



Administrative Package Cover Page

This file contains the following documents:

1. Summary of application (in plain language)
 - English
 - Alternative Language (Spanish)
2. First Notice (NORI-Notice of Receipt of Application and Intent to Obtain a Permit)
 - English
 - Alternative Language (Spanish)
3. Application materials



Portada de Paquete Administrativo

Este archivo contiene los siguientes documentos:

1. Resumen en lenguaje sencillo (PLS, por sus siglas en inglés) de la actividad propuesta
 - Inglés
 - Idioma alternativo (español)
2. Primer aviso (NORI, por sus siglas en inglés)
 - Inglés
 - Idioma alternativo (español)
3. Solicitud original

**ENGLISH TEMPLATE FOR TPDES or TLAP NEW/RENEWAL/AMENDMENT APPLICATIONS
INDUSTRIAL WASTEWATER/STORMWATER**

The following summary is provided for this pending water quality permit application being reviewed by the Texas Commission on Environmental Quality as required by 30 TAC Chapter 39. The information provided in this summary may change during the technical review of the application and is not a federal enforceable representation of the permit application.

Eastman Chemical Company (CN601214406) operates Eastman Chemical Texas Operations (RN100219815), which manufactures organic chemicals, polyethylene, and polypropylene. The plant is located at 300 Kodak Boulevard, south of the City of Longview, Harrison County, Texas 75602.

This application is for renewal of TPDES permit no. WQ0000471000. Outfall 001 is authorized to discharge river water, utility wastewaters, stormwater, miscellaneous wastewaters, and de minimis process wastewater at an intermittent and flow-variable rate. Outfall 001 discharges to Long Creek, which flows to the Sabine River above Toledo Bend Reservoir. Outfall 002 is authorized to discharge treated process wastewater, treated domestic wastewater, utility wastewater, and stormwater at a monthly average flow not to exceed 6.4 million gallons per day. Outfall 102 is an internal monitoring point for construction stormwater before transfer to Outfall 002. Outfall 002 discharges to an unnamed tributary of Sabine River above Toledo Bend Reservoir. Outfall 004 is authorized to discharge stormwater, river water, and water from Mason Lake at an intermittent and flow-variable rate to the Sabine River above Toledo Bend Reservoir. Outfall 005 is authorized to discharge river water, utility wastewater, stormwater, miscellaneous wastewater, and de minimis process wastewater at an intermittent and flow-variable rate. Outfall 005 discharges to an unnamed tributary of Sabine River above Toledo Bend Reservoir.

Wastewater treatment processes include oil/water separation, solids dewatering/removal, steam stripping, biological treatment, pH adjustment, incineration, and landfilling. Pollutants expected in the outfall discharges include suspended and dissolved solids, oil and grease, and metals. Other potential pollutants that may be in the discharges are included in Worksheet 2 of the TPDES application.

PLANTILLA EN ESPAÑOL PARA SOLICITUDES NUEVAS/RENOVACIONES/ENMIENDAS DE TPDES o TLAP**AGUAS RESIDUALES INDUSTRIALES /AGUAS PLUVIALES**

El siguiente resumen se proporciona para esta solicitud de permiso de calidad del agua pendiente que está siendo revisada por la Comisión de Calidad Ambiental de Texas según lo requerido por el Capítulo 39 del Código Administrativo de Texas 30. La información proporcionada en este resumen puede cambiar durante la revisión técnica de la solicitud y no es una representación ejecutiva fedérale de la solicitud de permiso.

Eastman Chemical Company (CN601214406) opera Eastman Chemical Texas Operations (RN100219815), que fabrica productos químicos orgánicos, polietileno y polipropileno. La planta está ubicada en 300 Kodak Boulevard, al sur de la ciudad de Longview, Condado de Harrison, Texas 75602.

Esta solicitud es para la renovación del permiso TPDES no. WQ0000471000. El Outfall 001 está autorizado a descargar agua de río, aguas residuales de servicios públicos, aguas pluviales, aguas residuales diversas y aguas residuales de procesos de minimis a un caudal intermitente y variable. El Outfall 001 descarga en Long Creek, que fluye hacia el río Sabine sobre el embalse de Toledo Bend. El Outfall 002 está autorizado a descargar aguas residuales de procesos tratadas, aguas residuales domésticas tratadas, aguas residuales de servicios públicos y aguas pluviales a un caudal medio mensual que no supere los 6.4 millones de galones por día. El Outfall 102 es un punto de monitoreo interno para aguas pluviales de construcción antes de su transferencia al Outfall 002. El Outfall 002 descarga en un afluente sin nombre del río Sabine sobre el embalse de Toledo Bend. El Outfall 004 está autorizado a descargar aguas pluviales, agua de río y agua del lago Mason a un caudal intermitente y variable al río Sabine sobre el embalse de Toledo Bend. El Outfall 005 está autorizado para descargar aguas pluviales, aguas residuales de servicios públicos, aguas pluviales, aguas residuales diversas y aguas residuales de procesos de minimis a un caudal intermitente y variable. El Outfalls 005 descarga a un afluente sin nombre del río Sabine, sobre el embalse de Toledo Bend.

Los procesos de tratamiento de aguas residuales incluyen la separación de aceite/agua, la deshidratación/eliminación de sólidos, la extracción con vapor, el tratamiento biológico, el ajuste del pH, la incineración y el vertido en vertederos. Los contaminantes esperados en las descargas de los puntos de descarga incluyen sólidos suspendidos y disueltos, aceite, grasa y metales. Otros posibles contaminantes que pueden estar presentes en las descargas se incluyen en la Worksheet 2 de la solicitud del TPDES.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY



NOTICE OF RECEIPT OF APPLICATION AND INTENT TO OBTAIN WATER QUALITY PERMIT RENEWAL

PERMIT NO. WQ0000471000

APPLICATION. Eastman Chemical Company, P.O. Box 7444, Longview, Texas 75607, which owns a plant manufacturing chemicals and plastics facility, has applied to the Texas Commission on Environmental Quality (TCEQ) to renew Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0000471000 (EPA I.D. No. TX0000949) to authorize the discharge of treated wastewater and stormwater at an intermittent and flow-variable volume via Outfalls 001 and 005; the discharge of treated wastewater and stormwater at a volume not to exceed a daily average flow of 6,400,000 gallons per day via Outfall 002; and the discharge of stormwater at an intermittent flow-variable volume via Outfall 004. The facility is located at 300 Kodak Boulevard, near the city of Longview, in Harrison County, Texas 75602. The discharge route is from the plant site via Outfall 001 to Long Creek; thence to the Sabine River above Toledo Bend Reservoir; via Outfalls 002 and 005 to an unnamed tributary; thence to the Sabine River above Toledo Bend Reservoir; and via Outfall 004 directly to the Sabine River above Toledo Bend Reservoir. TCEQ received this application on December 4, 2025. The permit application will be available for viewing and copying at Marshall Public Library, Public Notice Section, 300 South Alamo Boulevard, Marshall, in Harrison County, Texas and at Longview Public Library, Public Notice Section, 222 West Cotton Street, Longview, in Gregg County, Texas prior to the date this notice is published in the newspaper. The application and associated notices are available electronically at the following webpage:

<https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications>.

This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For the exact location, refer to the application.

<https://gisweb.tceq.texas.gov/LocationMapper/?marker=-94.6785,32.4287&level=18>

ALTERNATIVE LANGUAGE NOTICE. Alternative language notice in Spanish is available at:

<https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications>.

El aviso de idioma alternativo en español está disponible en

<https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications>.

ADDITIONAL NOTICE. TCEQ's Executive Director has determined the application is administratively complete and will conduct a technical review of the application. After technical review of the application is complete, the Executive Director may prepare a draft permit and will issue a preliminary decision on the application. **Notice of the Application and Preliminary Decision will be published and mailed to those who are on the county-**

wide mailing list and to those who are on the mailing list for this application. That notice will contain the deadline for submitting public comments.

PUBLIC COMMENT / PUBLIC MEETING. You may submit public comments or request a public meeting on this application. The purpose of a public meeting is to provide the opportunity to submit comments or to ask questions about the application. TCEQ will hold a public meeting if the Executive Director determines that there is a significant degree of public interest in the application or if requested by a local legislator. A public meeting is not a contested case hearing.

OPPORTUNITY FOR A CONTESTED CASE HEARING. After the deadline for submitting public comments, the Executive Director will consider all timely comments and prepare a response to all relevant and material, or significant public comments. **Unless the application is directly referred for a contested case hearing, the response to comments, and the Executive Director's decision on the application, will be mailed to everyone who submitted public comments and to those persons who are on the mailing list for this application.** If comments are received, the mailing will also provide instructions for requesting reconsideration of the Executive Director's decision and for requesting a contested case hearing. A contested case hearing is a legal proceeding similar to a civil trial in state district court.

TO REQUEST A CONTESTED CASE HEARING, YOU MUST INCLUDE THE FOLLOWING ITEMS IN YOUR REQUEST: your name, address, phone number; applicant's name and proposed permit number; the location and distance of your property/activities relative to the proposed facility; a specific description of how you would be adversely affected by the facility in a way not common to the general public; a list of all disputed issues of fact that you submit during the comment period and, the statement "[I/we] request a contested case hearing." If the request for contested case hearing is filed on behalf of a group or association, the request must designate the group's representative for receiving future correspondence; identify by name and physical address an individual member of the group who would be adversely affected by the proposed facility or activity; provide the information discussed above regarding the affected member's location and distance from the facility or activity; explain how and why the member would be affected; and explain how the interests the group seeks to protect are relevant to the group's purpose.

Following the close of all applicable comment and request periods, the Executive Director will forward the application and any requests for reconsideration or for a contested case hearing to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

The Commission may only grant a request for a contested case hearing on issues the requestor submitted in their timely comments that were not subsequently withdrawn. **If a hearing is granted, the subject of a hearing will be limited to disputed issues of fact or mixed questions of fact and law relating to relevant and material water quality concerns submitted during the comment period.**

TCEQ may act on an application to renew a permit for discharge of wastewater without providing an opportunity for a contested case hearing if certain criteria are met.

MAILING LIST. If you submit public comments, a request for a contested case hearing or a reconsideration of the Executive Director's decision, you will be added to the mailing list for

this specific application to receive future public notices mailed by the Office of the Chief Clerk. In addition, you may request to be placed on: (1) the permanent mailing list for a specific applicant name and permit number; and/or (2) the mailing list for a specific county. If you wish to be placed on the permanent and/or the county mailing list, clearly specify which list(s) and send your request to TCEQ Office of the Chief Clerk at the address below.

INFORMATION AVAILABLE ONLINE. For details about the status of the application, visit the Commissioners' Integrated Database at www.tceq.texas.gov/goto/cid. Search the database using the permit number for this application, which is provided at the top of this notice.

AGENCY CONTACTS AND INFORMATION. All public comments and requests must be submitted either electronically at <https://www14.tceq.texas.gov/epic/eComment/>, or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Please be aware that any contact information you provide, including your name, phone number, email address and physical address will become part of the agency's public record. For more information about this permit application or the permitting process, please call the TCEQ Public Education Program, Toll Free, at 1-800-687-4040 or visit their website at www.tceq.texas.gov/goto/pep. Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from Eastman Chemical Company at the address stated above or by calling Ms. Michelle Carder, Manager of Environmental Operations, at 903-237-6762.

Issuance Date: December 17, 2025

Comisión de Calidad Ambiental del Estado de Texas



AVISO DE RECIBO DE LA SOLICITUD Y EL INTENTO DE OBTENER PERMISO PARA LA CALIDAD DEL AGUA RENOVACION

PERMISO NO. WQ0000471000

SOLICITUD. Eastman Chemical Company, P.O. Box 7444, Longview, Texas 75607, propietaria de una planta que fabrica productos químicos y plásticos Instalación, ha solicitado a la Comisión de Calidad Ambiental del Estado de Texas (TCEQ) para renovar el Permiso No. WQ0000471000 (EPA I.D. No. TX0000949) del Sistema de Eliminación de Descargas de Contaminantes de Texas (TPDES) para autorizar la descarga de aguas residuales tratadas y aguas pluviales en volumen intermitente y variable mediante los efluentes 001 y 005; la descarga de aguas residuales tratadas y aguas pluviales en un volumen que no exceda un caudal medio diario de 6,400,000 galones por día mediante el efluente 002; y la descarga de aguas pluviales en un volumen intermitente y variable mediante el efluente 004. La planta está ubicada en 300 Kodak Boulevard, cerca de la ciudad de Longview en el Condado de Harrison, Texas 75602. La ruta de descarga es del sitio de la planta a través del efluente 001 hacia Long Creek; de ahí al río Sabine por encima del embalse Toledo Bend; vía los efluentes 002 y 005 a un afluente sin nombre; de ahí al río Sabine por encima del embalse Toledo Bend; y vía el efluente 004 directamente al río Sabine por encima del embalse Toledo Bend. La TCEQ recibió esta solicitud el 4 de diciembre de 2025. La solicitud para el permiso estará disponible para leerla y copiarla en Marshall Public Library, Sección de Avisos Públicos, 300 South Alamo Boulevard, Marshall, Condado de Harrison, Texas, y en Longview Public Library, Sección de Avisos Públicos, 222 West Cotton Street, Longview, Condado de Gregg, Texas antes de la fecha de publicación de este aviso en el periódico. La solicitud y los avisos asociados están disponibles electrónicamente en la siguiente página web:

<https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications>. Este enlace a un mapa electrónico de la ubicación general del sitio o de la instalación es proporcionado como una cortesía y no es parte de la solicitud o del aviso. Para la ubicación exacta, consulte la solicitud.

<https://gisweb.tceq.texas.gov/LocationMapper/?marker=-94.6785,32.4287&level=182>

AVISO DE IDIOMA ALTERNATIVO. El aviso de idioma alternativo en español está disponible en <https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications>.

AVISO ADICIONAL. El Director Ejecutivo de la TCEQ ha determinado que la solicitud es administrativamente completa y conducirá una revisión técnica de la solicitud. Después de completar la revisión técnica, el Director Ejecutivo puede preparar un borrador del permiso y emitirá una Decisión Preliminar sobre la solicitud. **El aviso de la solicitud y la decisión preliminar serán publicados y enviado a los que están en la lista de correo de las personas**

a lo largo del condado que desean recibir los avisos y los que están en la lista de correo que desean recibir avisos de esta solicitud. El aviso dará la fecha límite para someter comentarios públicos.

COMENTARIO PUBLICO / REUNION PUBLICA. Usted puede presentar comentarios públicos o pedir una reunión pública sobre esta solicitud. El propósito de una reunión pública es dar la oportunidad de presentar comentarios o hacer preguntas acerca de la solicitud. La TCEQ realiza una reunión pública si el Director Ejecutivo determina que hay un grado de interés público suficiente en la solicitud o si un legislador local lo pide. Una reunión pública no es una audiencia administrativa de lo contencioso.

OPORTUNIDAD DE UNA AUDIENCIA ADMINISTRATIVA DE LO CONTENCIOSO. Después del plazo para presentar comentarios públicos, el Director Ejecutivo considerará todos los comentarios apropiados y preparará una respuesta a todo los comentarios públicos esenciales, pertinentes, o significativos. **A menos que la solicitud haya sido referida directamente a una audiencia administrativa de lo contencioso, la respuesta a los comentarios y la decisión del Director Ejecutivo sobre la solicitud serán enviados por correo a todos los que presentaron un comentario público y a las personas que están en la lista para recibir avisos sobre esta solicitud. Si se reciben comentarios, el aviso también proveerá instrucciones para pedir una reconsideración de la decisión del Director Ejecutivo y para pedir una audiencia administrativa de lo contencioso.** Una audiencia administrativa de lo contencioso es un procedimiento legal similar a un procedimiento legal civil en un tribunal de distrito del estado.

PARA SOLICITAR UNA AUDIENCIA DE CASO IMPUGNADO, USTED DEBE INCLUIR EN SU SOLICITUD LOS SIGUIENTES DATOS: su nombre, dirección, y número de teléfono; el nombre del solicitante y número del permiso; la ubicación y distancia de su propiedad/actividad con respecto a la instalación; una descripción específica de la forma cómo usted sería afectado adversamente por el sitio de una manera no común al público en general; una lista de todas las cuestiones de hecho en disputa que usted presente durante el período de comentarios; y la declaración "[Yo/nosotros] solicito/solicitamos una audiencia de caso impugnado". Si presenta la petición para una audiencia de caso impugnado de parte de un grupo o asociación, debe identificar una persona que representa al grupo para recibir correspondencia en el futuro; identificar el nombre y la dirección de un miembro del grupo que sería afectado adversamente por la planta o la actividad propuesta; proveer la información indicada anteriormente con respecto a la ubicación del miembro afectado y su distancia de la planta o actividad propuesta; explicar cómo y porqué el miembro sería afectado; y explicar cómo los intereses que el grupo desea proteger son pertinentes al propósito del grupo.

Después del cierre de todos los períodos de comentarios y de petición que aplican, el Director Ejecutivo enviará la solicitud y cualquier petición para reconsideración o para una audiencia de caso impugnado a los Comisionados de la TCEQ para su consideración durante una reunión programada de la Comisión.

La Comisión sólo puede conceder una solicitud de una audiencia de caso impugnado sobre los temas que el solicitante haya presentado en sus comentarios oportunos que no fueron retirados posteriormente. **Si se concede una audiencia, el tema de la audiencia estará limitado a cuestiones de hecho en disputa o cuestiones mixtas de hecho y de derecho**

relacionadas a intereses pertinentes y materiales de calidad del agua que se hayan presentado durante el período de comentarios. Si ciertos criterios se cumplen, la TCEQ puede actuar sobre una solicitud para renovar un permiso sin proveer una oportunidad de una audiencia administrativa de lo contencioso.

LISTA DE CORREO. Si somete comentarios públicos, un pedido para una audiencia administrativa de lo contencioso o una reconsideración de la decisión del Director Ejecutivo, la Oficina del Secretario Principal enviará por correo los avisos públicos en relación con la solicitud. Además, puede pedir que la TCEQ ponga su nombre en una o más de las listas correos siguientes (1) la lista de correo permanente para recibir los avisos del solicitante indicado por nombre y número del permiso específico y/o (2) la lista de correo de todas las solicitudes en un condado específico. Si desea que se agrega su nombre en una de las listas designe cual lista(s) y envía por correo su pedido a la Oficina del Secretario Principal de la TCEQ.

INFORMACIÓN DISPONIBLE EN LÍNEA. Para detalles sobre el estado de la solicitud, favor de visitar la Base de Datos Integrada de los Comisionados en www.tceq.texas.gov/goto/cid. Para buscar en la base de datos, utilizar el número de permiso para esta solicitud que aparece en la parte superior de este aviso.

CONTACTOS E INFORMACIÓN A LA AGENCIA. Todos los comentarios públicos y solicitudes deben ser presentadas electrónicamente vía <http://www14.tceq.texas.gov/epic/eComment/> o por escrito dirigidos a la Comisión de Texas de Calidad Ambiental, Oficial de la Secretaría (Office of Chief Clerk), MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Tenga en cuenta que cualquier información personal que usted proporcione, incluyendo su nombre, número de teléfono, dirección de correo electrónico y dirección física pasarán a formar parte del registro público de la Agencia. Para obtener más información acerca de esta solicitud de permiso o el proceso de permisos, llame al programa de educación pública de la TCEQ, gratis, al 1-800-687-4040. Si desea información en Español, puede llamar al 1-800-687-4040.

También se puede obtener información adicional del Eastman Chemical Company a la dirección indicada arriba o llamando a Ms. Michelle Carder, Manager of Environmental Operations al 903-237-6762.

Fecha de emisión: 17 de diciembre de 2025

Brooke T. Paup, *Chairwoman*
Catarina R. Gonzales, *Commissioner*
Tonya R. Miller, *Commissioner*
Kelly Keel, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 4, 2025

Re: Confirmation of Submission of the Renewal without changes for Industrial Wastewater Authorization.

Dear Applicant:

This is an acknowledgement that you have successfully completed Renewal without changes for the Industrial Wastewater authorization.

ER Account Number: ER090919
Application Reference Number: 810483
Authorization Number: WQ0000471000
Site Name: Eastman Chemical Texas Operations
Regulated Entity: RN100219815 - Eastman Chemical Texas Operations
Customer(s): CN601214406 - Eastman Chemical Company

Please be aware that TCEQ staff may contact your designated contact for any additional information.

If you have any questions, you may contact the Applications Review and Processing Team by email at WQ-ARPTeam@tceq.texas.gov or by telephone at (512) 239-4671.

Sincerely,
Applications Review and Processing Team
Water Quality Division

Texas Commission on Environmental Quality

Update Domestic or Industrial Individual Permit

WQ0000471000

Site Information (Regulated Entity)

What is the name of the site to be authorized?	EASTMAN CHEMICAL TEXAS OPERATIONS
Does the site have a physical address?	Yes
Physical Address	
Number and Street	300 KODAK BLVD
City	LONGVIEW
State	TX
ZIP	75602
County	GREGG
Latitude (N) (##.#####)	32.4287
Longitude (W) (-###.#####)	-94.6785
Primary SIC Code	
Secondary SIC Code	2821,2869,4911
Primary NAICS Code	
Secondary NAICS Code	325199
Regulated Entity Site Information	
What is the Regulated Entity's Number (RN)?	RN100219815
What is the name of the Regulated Entity (RE)?	EASTMAN CHEMICAL TEXAS OPERATIONS
Does the RE site have a physical address?	Yes
Physical Address	
Number and Street	300 KODAK BLVD
City	LONGVIEW
State	TX
ZIP	75602
County	HARRISON
Latitude (N) (##.#####)	32.439444
Longitude (W) (-###.#####)	-94.701944
Facility NAICS Code	
What is the primary business of this entity?	MANUFACTURING CHEMICALS

Eastman-Customer (Applicant) Information (Owner)

How is this applicant associated with this site?	Owner
What is the applicant's Customer Number (CN)?	CN601214406
Type of Customer	Corporation
Full legal name of the applicant:	
Legal Name	Eastman Chemical Company
Texas SOS Filing Number	9719306
Federal Tax ID	621539359
State Franchise Tax ID	16215393592
State Sales Tax ID	
Local Tax ID	
DUNS Number	39108279
Number of Employees	501+
Independently Owned and Operated?	No
I certify that the full legal name of the entity applying for this permit has been provided and is legally authorized to do business in Texas.	Yes
Responsible Authority Contact	
Organization Name	Eastman Chemical Company
Prefix	
First	Eriik
Middle	
Last	Rowland
Suffix	
Credentials	
Title	Director, Ethylene Products Dept
Responsible Authority Mailing Address	
Enter new address or copy one from list:	
Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	PO BOX 7444
Routing (such as Mail Code, Dept., or Attn:)	
City	LONGVIEW
State	TX
ZIP	75607
Phone (###-###-####)	9032373753
Extension	
Alternate Phone (###-###-####)	

Fax (###-###-####)

E-mail

erowland@eastman.com

Billing Contact

Responsible contact for receiving billing statements:

Select the permittee that is responsible for payment of the annual fee.

Organization Name

CN601214406, Eastman Chemical Company
EASTMAN CHEMICAL COMPANY

Prefix

First

Alex

Middle

Last

Claiborne

Suffix

Credentials

Title

Environmental Technician

Enter new address or copy one from list:

Mailing Address

Address Type

Domestic

Mailing Address (include Suite or Bldg. here, if applicable)

PO BOX 7444

Routing (such as Mail Code, Dept., or Attn:)

Attn Alex Claiborne

City

LONGVIEW

State

TX

ZIP

75607

Phone (###-###-####)

9032376836

Extension

Alternate Phone (###-###-####)

Fax (###-###-####)

E-mail

jonathana.claiborne@eastman.com

Application Contact

Person TCEQ should contact for questions about this application:

Same as another contact?

Organization Name

EASTMAN CHEMICAL COMPANY

Prefix

First

MICHELLE

Middle

Last	CARDER
Suffix	
Credentials	
Title	Manager Environmental Operations
Enter new address or copy one from list:	
Mailing Address	
Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	PO BOX 7444
Routing (such as Mail Code, Dept., or Attn:)	
City	LONGVIEW
State	TX
ZIP	75607
Phone (###-###-####)	9032376762
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	
E-mail	MICHELLECARDER@EASTMAN.COM

Technical Contact

Person TCEQ should contact for questions about this application:

Same as another contact?	
Organization Name	EASTMAN CHEMICAL COMPANY
Prefix	MR
First	Joel
Middle	
Last	Murry
Suffix	
Credentials	
Title	ENVIRONMENTAL Representative
Enter new address or copy one from list:	
Mailing Address	
Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	PO BOX 7444
Routing (such as Mail Code, Dept., or Attn:)	
City	LONGVIEW
State	TX

ZIP	75607
Phone (###-###-####)	9032376181
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	
E-mail	rmurry@eastman.com

DMR Contact

Person responsible for submitting Discharge Monitoring Report Forms:

Same as another contact?	CN601214406, Eastman Chemical Company
Organization Name	Eastman Chemical Company
Prefix	
First	Eriik
Middle	
Last	Rowland
Suffix	
Credentials	
Title	Director, Ethylene Products Dept
Enter new address or copy one from list:	

Mailing Address:

Address Type	Domestic
Mailing Address (include Suite or Bldg. here, if applicable)	PO BOX 7444
Routing (such as Mail Code, Dept., or Attn:)	Attn Eriik Rowlan
City	LONGVIEW
State	TX
ZIP	75607
Phone (###-###-####)	9032373753
Extension	
Alternate Phone (###-###-####)	
Fax (###-###-####)	
E-mail	erowland@eastman.com

Section 1# Permit Contact

Permit Contact#: 1

Person TCEQ should contact throughout the permit term.

1) Same as another contact?	
2) Organization Name	Eastman Chemical Company
3) Prefix	
4) First	Andrew
5) Middle	
6) Last	Coggins
7) Suffix	
8) Credentials	
9) Title	VP, CI Manufacturing & TXO Site Leader
Mailing Address	
10) Enter new address or copy one from list	
11) Address Type	Domestic
11.1) Mailing Address (include Suite or Bldg. here, if applicable)	PO BOX 7444
11.2) Routing (such as Mail Code, Dept., or Attn:)	
11.3) City	LONGVIEW
11.4) State	TX
11.5) ZIP	75607
12) Phone (###-###-####)	9032376200
13) Extension	
14) Alternate Phone (###-###-####)	
15) Fax (###-###-####)	
16) E-mail	acoggins@eastman.com

Owner Information

Owner of Treatment Facility

1) Prefix	
2) First and Last Name	
3) Organization Name	Eastman Chemical Company
4) Mailing Address	PO Box 7444
5) City	Longview
6) State	TX
7) Zip Code	75607
8) Phone (###-###-####)	9032375000
9) Extension	
10) Email	acoggins@eastman.com
11) What is ownership of the treatment facility?	Private

Owner of Land (where treatment facility is or will be)

12) Prefix	
13) First and Last Name	
14) Organization Name	Eastman Chemical Company
15) Mailing Address	PO Box 7444
16) City	Longview
17) State	TX
18) Zip Code	75607
19) Phone (###-###-####)	9032375000
20) Extension	
21) Email	erowland@eastman.com
22) Is the landowner the same person as the facility owner or co-applicant?	Yes

General Information Renewal-Amendment

1) Current authorization expiration date:	06/03/2026
2) Current Facility operational status:	Active
3) Is the facility located on or does the treated effluent cross American Indian Land?	No
4) What is the application type that you are seeking?	Renewal without changes
5) Current Authorization type:	Industrial Wastewater
5.1) What is your EPA facility classification?	Major
5.1.1) Select the applicable fee	Renewal - \$2,015
6) What is the classification for your authorization?	TPDES
6.1) What is the EPA Identification Number?	TX0000949
6.2) Is the wastewater treatment facility location in the existing permit accurate?	Yes
6.3) Are the point(s) of discharge and the discharge route(s) in the existing permit correct?	Yes
6.4) City nearest the outfall(s):	Longview
6.5) County where the outfalls are located:	HARRISON GREGG
6.6) Is or will the treated wastewater discharge to a city, county, or state highway right-of-way, or a flood control district drainage ditch?	No
6.7) Is the daily average discharge at your facility of 5 MGD or more?	Yes
6.7.1) Provide the names of all counties located within 100 statute miles downstream of the point(s) of discharge:	GREGG HARRISON PANOLA RUSK SABINE SHELBY
7) Did any person formerly employed by the TCEQ represent your company and get paid for service regarding this application?	No

Public Notice Information

Individual Publishing the Notices

1) Prefix
2) First and Last Name Alex Claiborne
3) Credential
4) Title Environmental Technician
5) Organization Name
6) Mailing Address PO BOX 7444
7) Address Line 2 B-1
8) City LONGVIEW
9) State TX
10) Zip Code 75607
11) Phone (###-###-####) 9032376836
12) Extension
13) Fax (###-###-####)
14) Email jonathana.claiborne@eastman.com

Contact person to be listed in the Notices

15) Prefix
16) First and Last Name Michelle Carder
17) Credential
18) Title Manager, Environmental Operations
19) Organization Name
20) Phone (###-###-####) 9032376762
21) Fax (###-###-####)
22) Email michellecarder@eastman.com

Bilingual Notice Requirements

23) Is a bilingual education program required by the Texas Education Code at the elementary or middle school nearest to the facility or proposed facility? Yes
23.1) Are the students who attend either the elementary school or the middle school enrolled in a bilingual education program at that school? Yes
23.2) Do the students at these schools attend a bilingual education program at another location? No
23.3) Would the school be required to provide a bilingual education program but the school has waived out of this requirement under 19 TAC 89.1205(g)? No
23.4) Which language is required by the bilingual program? Spanish

Section 1# Public Viewing Information

County#: 1

1) County	HARRISON
2) Public building name	Marshall Public Library
3) Location within the building	Public Notice Section
4) Physical Address of Building	300 S Alamo Blvd
5) City	Marshall
6) Contact Name	Librarian
7) Phone (###-###-####)	9039354465
8) Extension	
9) Is the location open to the public?	Yes

County#: 2

1) County	GREGG
2) Public building name	Longview Public Library
3) Location within the building	Public Notice Section
4) Physical Address of Building	222 W Cotton St
5) City	Longview
6) Contact Name	
7) Phone (###-###-####)	9032371350
8) Extension	
9) Is the location open to the public?	Yes

Plain Language

1) Plain Language

[File Properties]

File Name	LANG_A-3 PLS-1 Plain Language Summary WQ0000471000.docx
Hash	AF1790AD20E9748908A7C69BB4C64994A1FFC32B044ACADCF4616F61E2B570A0
MIME-Type	application/vnd.openxmlformats-officedocument.wordprocessingml.document

Supplemental Permit Information Form

1) Supplemental Permit Information Form (SPIF)

[File Properties]

File Name	SPIF_A4_SPIF20971.pdf
Hash	3802BDA552D07B8D15AEE8254616D8F6207246909F34A0392A2DDAE17A34B7CA
MIME-Type	application/pdf

Industrial Attachments

1) Attach an 8.5"x11", reproduced portion of the most current and original USGS Topographic Quadrangle Map(s) that meets the 1:24,000 scale.

[File Properties]

File Name	MAP_Fig 1 - Lakeport Quad highlighted 8-11.jpg
Hash	21A4BCEEB3E647BF7386B3925147D195BF5C7577DCA4C9C3D9C9BA4502510537
MIME-Type	image/jpeg

[File Properties]

File Name	MAP_Fig 2 - Easton Quad 8-11.jpg
Hash	1469EC311B8D571F17D9B4F5FE63EF55336EBECFAE9C37A0C3ED77676F504497
MIME-Type	image/jpeg

2) I confirm that all required sections of Technical Report 1.0 are complete and will be included in the Technical Attachment. Yes

2.1) I confirm that Worksheet 2.0 (Pollutant Analyses Requirements) is complete and included in the Technical Attachment. Yes

2.2) I confirm that Worksheet 4.0 (Receiving Waters) is complete and included in the Technical Attachment. Yes

2.3) Are you planning to include Worksheet 4.1 (Waterbody Physical Characteristics) in the Technical Attachment? No

2.4) Are you planning to include Worksheet 6.0 (Industrial Waste Contribution) in the Technical Attachment? No

2.5) Are you planning to include Worksheet 7.0 (Stormwater Discharges Associated with Industrial Activities) to the Technical Attachment? No

2.6) Are you planning to include Worksheet 8.0 (Aquaculture) in the Technical Attachment? No

2.7) Are you planning to include Worksheet 9.0 (Class V Injection Well Inventory/Authorization) in the Technical Attachment? No

2.8) Are you planning to include Worksheet 10.0 (Quarries in the John Graves Scenic Riverway) in the Technical Attachment? No

2.9) Are you planning to include Worksheet 11.0 (Cooling Water System Information) in the Technical Attachment? No

2.10) Are you planning to include Worksheet 11.1 (Impingement Mortality) in the Technical Attachment? No

2.11) Are you planning to include Worksheet 11.2 (Source Water Biological Data) in the Technical Attachment? No

2.12) Are you planning to include Worksheet 11.3 (Entrainment) in the Technical Attachment? No

2.13) Technical Attachment

[File Properties]

File Name	TECH_10055_2024_Eastman_TechnicalReport.pdf
Hash	E455867BB2013A0035DD69DDABEE1BA3A0D94F230C7EAAAC10A5EE18C8E4F032
MIME-Type	application/pdf
3) Flow Diagram	
[File Properties]	
File Name	FLDIA_T4_Item2b_Schematic_WaterBalance.pdf
Hash	29D3C60F9791FDE0494C92AA0264C19092DFAFAF3716EDCFACBA4CB1678F2C45
MIME-Type	application/pdf
4) Site Drawing	
[File Properties]	
File Name	SITEDR_TR_Fig1_Item1d_ProductionAreas.pdf
Hash	23D412008F5DB730D87DA8749974F0DA79A24B70317CA9EAE1550D3F51709F08
MIME-Type	application/pdf
[File Properties]	
File Name	SITEDR_TR_Fig2_Item1d_WWTP.pdf
Hash	AA68C17CCA8E8755B081C68034DADF8845F05A92D21DD27D16B2216CAD3D2E30A
MIME-Type	application/pdf
5) Design Calculations	
[File Properties]	
File Name	DES_CAL_T6_Item5b_Final SDS and chemicals.pdf
Hash	912786E1678099C7EA92C063D9B9DE55DBDEC09E2DE61CA17EA50A6CB9D1DF0E
MIME-Type	application/pdf
6) Solids Management Plan	
7) Water Balance	
[File Properties]	
File Name	WB_T4_Item2b_Schematic_WaterBalance.pdf
Hash	29D3C60F9791FDE0494C92AA0264C19092DFAFAF3716EDCFACBA4CB1678F2C45
MIME-Type	application/pdf
8) Other Attachments	
[File Properties]	
File Name	OTHER_T1_Item1C_MaterialsList.pdf
Hash	9EB69205E61BFCD48759C7A78C427E3DDA33D389AB0B210FFBF087EA62B3F7F1

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MIME-Type	application/pdf
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File Name	OTHER_T7_Item10b_OffSiteContributors.pdf
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MIME-Type	application/pdf
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File Name	OTHER_T8_ContractLabs_WS2_Item1C.pdf
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MIME-Type	application/pdf
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File Name	OTHER_T-9_WS1_Item3_001Flows.pdf
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[File Properties]	

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Hash	CBBBA9D5D5119FF6E88FEB5727DE4EE3974BE05192796B936E29EB66ABA4F86B
MIME-Type	application/pdf

Certification

I certify that I am authorized under 30 Texas Administrative Code 305.44 to sign this document and can provide documentation in proof of such authorization upon request.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

1. I am Eriik Rowland, the owner of the STEERS account ER118143.
2. I have the authority to sign this data on behalf of the applicant named above.
3. I have personally examined the foregoing and am familiar with its content and the content of any attachments, and based upon my personal knowledge and/or inquiry of any individual responsible for information contained herein, that this information is true, accurate, and complete.
4. I further certify that I have not violated any term in my TCEQ STEERS participation agreement and that I have no reason to believe that the confidentiality or use of my password has been compromised at any time.
5. I understand that use of my password constitutes an electronic signature legally equivalent to my written signature.
6. I also understand that the attestations of fact contained herein pertain to the implementation, oversight and enforcement of a state and/or federal environmental program and must be true and complete to the best of my knowledge.
7. I am aware that criminal penalties may be imposed for statements or omissions that I know or have reason to believe are untrue or misleading.
8. I am knowingly and intentionally signing Update Domestic or Industrial Individual Permit WQ0000471000.
9. My signature indicates that I am in agreement with the information on this form, and authorize its submittal to the TCEQ.

OWNER Signature: Eriik Rowland OWNER

Customer Number:	CN601214406
Legal Name:	Eastman Chemical Company
Account Number:	ER118143
Signature IP Address:	104.225.168.64
Signature Date:	2025-12-03
Signature Hash:	8D6742BDE761D3BD9C2D54732E6823E4976E495906A3E038FAC705BE10556D57
Form Hash Code at time of Signature:	D9205A5BB323C998BEAFBC060A6749F48C3AF39D4C28B343907B03ED12CAD91B

Fee Payment

Transaction by:	The application fee payment transaction was made by ALEX CLAIBORNE
Paid by:	The application fee was paid by ALEX CLAIBORNE
Fee Amount:	\$2000.00
Paid Date:	The application fee was paid on 2025-12-02

Transaction/Voucher number:

The transaction number is 582EA000698131 and the voucher number is 797000

Submission

Reference Number:

The application reference number is 810483

Submitted by:

The application was submitted by ER090919/Rucker Murry

Submitted Timestamp:

The application was submitted on 2025-12-04 at 10:15:48 CST

Submitted From:

The application was submitted from IP address 104.225.168.94

Confirmation Number:

The confirmation number is 704888

Steers Version:

The STEERS version is 6.93

Permit Number:

The permit number is WQ0000471000

Additional Information

Application Creator: This account was created by Rucker Murry



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

**SUMMARY OF APPLICATION IN PLAIN
LANGUAGE FOR TPDES OR TLAP PERMIT
APPLICATIONS****Summary of Application (in plain language) Template and
Instructions for Texas Pollutant Discharge Elimination System
(TPDES) and Texas Land Application (TLAP) Permit
Applications**

Applicants should use this template to develop a plain language summary of your facility and application as required by Title 30, Texas Administrative Code (30 TAC), Chapter 39, Subchapter H. You may modify the template as necessary to accurately describe your facility as long as the summary includes the following information: (1) the function of the proposed plant or facility; (2) the expected output of the proposed plant or facility; (3) the expected pollutants that may be emitted or discharged by the proposed plant or facility; and (4) how you will control those pollutants, so that the proposed plant will not have an adverse impact on human health or the environment.

If you are subject to the alternative language notice requirements in 30 TAC Section 39.426, **you must provide a translated copy of the completed plain language summary in the appropriate alternative language as part of your application package.** For your convenience, a Spanish template has been provided below.

**ENGLISH TEMPLATE FOR TPDES or TLAP NEW/RENEWAL/AMENDMENT APPLICATIONS
INDUSTRIAL WASTEWATER/STORMWATER**

The following summary is provided for this pending water quality permit application being reviewed by the Texas Commission on Environmental Quality as required by 30 TAC Chapter 39. The information provided in this summary may change during the technical review of the application and is not a federal enforceable representation of the permit application.

Eastman Chemical Company (CN601214406) operates Eastman Chemical Texas Operations (RN100219815), which manufactures organic chemicals, polyethylene, and polypropylene. The plant is located at 300 Kodak Boulevard, south of the City of Longview, Harrison County, Texas 75602.

This application is for renewal of TPDES permit no. WQ0000471000. Outfall 001 is authorized to discharge river water, utility wastewaters, stormwater, miscellaneous wastewaters, and de minimis process wastewater at an intermittent and flow-variable rate. Outfall 001 discharges to Long Creek, which flows to the Sabine River above Toledo Bend Reservoir. Outfall 002 is authorized to discharge treated process wastewater, treated domestic wastewater, utility wastewater, and stormwater at a monthly average flow not to exceed 6.4 million gallons per day. Outfall 102 is an internal monitoring point for construction stormwater before transfer to Outfall 002. Outfall 002 discharges to an unnamed tributary of Sabine River above Toledo Bend Reservoir. Outfall 004 is authorized to discharge stormwater, river water, and water from Mason Lake at an intermittent and flow-variable rate to the Sabine River above Toledo Bend Reservoir. Outfall 005 is authorized to discharge river water, utility wastewater, stormwater, miscellaneous wastewater, and de minimis process wastewater at an intermittent and flow-variable rate. Outfall 005 discharges to an unnamed tributary of Sabine River above Toledo Bend Reservoir.

Wastewater treatment processes include oil/water separation, solids dewatering/removal, steam stripping, biological treatment, pH adjustment, incineration, and landfilling. Pollutants expected in the outfall discharges include suspended and dissolved solids, oil and grease, and metals. Other potential pollutants that may be in the discharges are included in Worksheet 2 of the TPDES application.

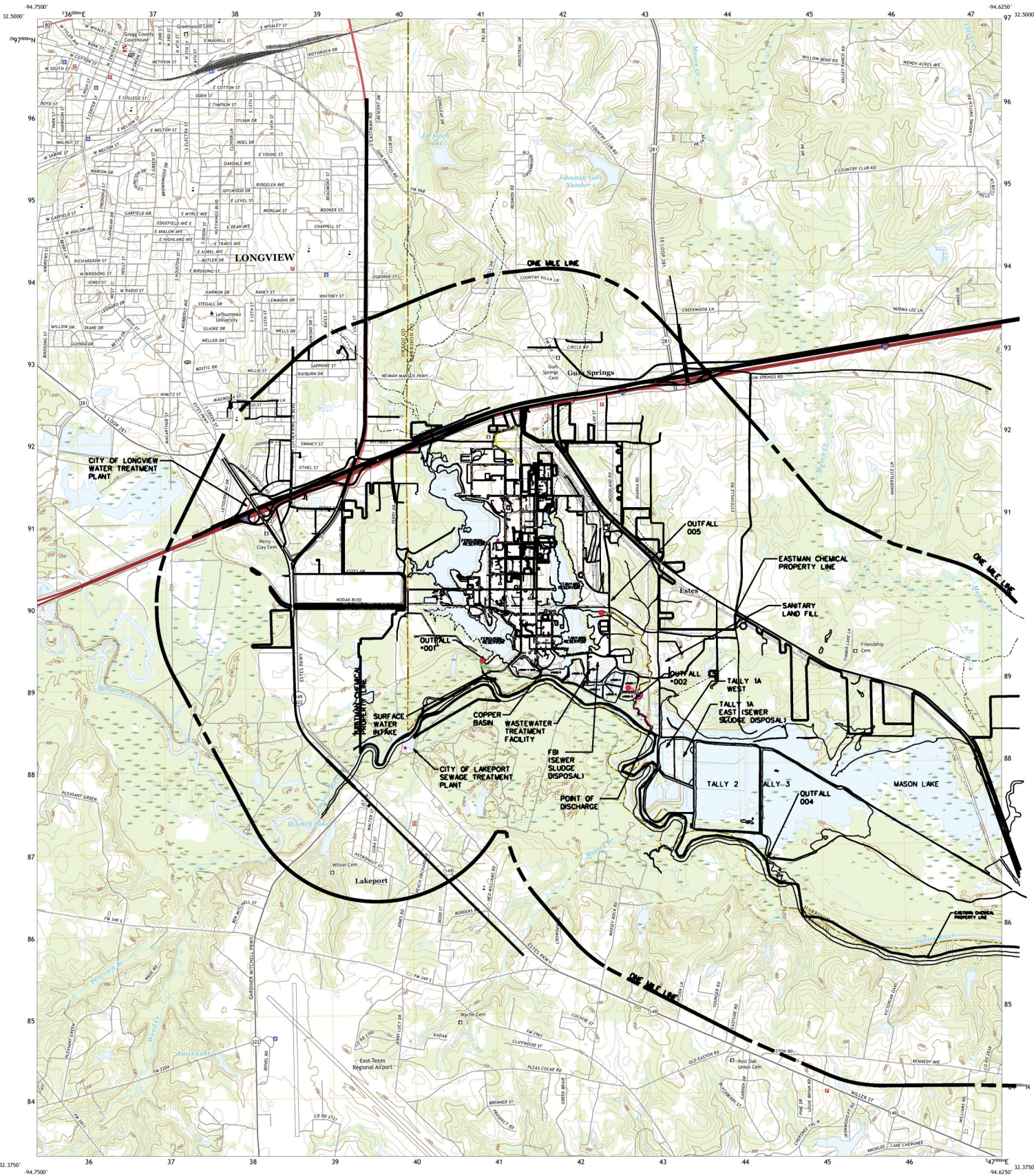
PLANTILLA EN ESPAÑOL PARA SOLICITUDES NUEVAS/RENOVACIONES/ENMIENDAS DE TPDES o TLAP**AGUAS RESIDUALES INDUSTRIALES /AGUAS PLUVIALES**

El siguiente resumen se proporciona para esta solicitud de permiso de calidad del agua pendiente que está siendo revisada por la Comisión de Calidad Ambiental de Texas según lo requerido por el Capítulo 39 del Código Administrativo de Texas 30. La información proporcionada en este resumen puede cambiar durante la revisión técnica de la solicitud y no es una representación ejecutiva fedérale de la solicitud de permiso.

Eastman Chemical Company (CN601214406) opera Eastman Chemical Texas Operations (RN100219815), que fabrica productos químicos orgánicos, polietileno y polipropileno. La planta está ubicada en 300 Kodak Boulevard, al sur de la ciudad de Longview, Condado de Harrison, Texas 75602.

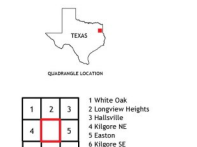
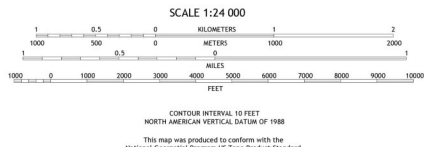
Esta solicitud es para la renovación del permiso TPDES no. WQ0000471000. El Outfall 001 está autorizado a descargar agua de río, aguas residuales de servicios públicos, aguas pluviales, aguas residuales diversas y aguas residuales de procesos de minimis a un caudal intermitente y variable. El Outfall 001 descarga en Long Creek, que fluye hacia el río Sabine sobre el embalse de Toledo Bend. El Outfall 002 está autorizado a descargar aguas residuales de procesos tratadas, aguas residuales domésticas tratadas, aguas residuales de servicios públicos y aguas pluviales a un caudal medio mensual que no supere los 6.4 millones de galones por día. El Outfall 102 es un punto de monitoreo interno para aguas pluviales de construcción antes de su transferencia al Outfall 002. El Outfall 002 descarga en un afluente sin nombre del río Sabine sobre el embalse de Toledo Bend. El Outfall 004 está autorizado a descargar aguas pluviales, agua de río y agua del lago Mason a un caudal intermitente y variable al río Sabine sobre el embalse de Toledo Bend. El Outfall 005 está autorizado para descargar aguas pluviales, aguas residuales de servicios públicos, aguas pluviales, aguas residuales diversas y aguas residuales de procesos de minimis a un caudal intermitente y variable. El Outfalls 005 descarga a un afluente sin nombre del río Sabine, sobre el embalse de Toledo Bend.

Los procesos de tratamiento de aguas residuales incluyen la separación de aceite/agua, la deshidratación/eliminación de sólidos, la extracción con vapor, el tratamiento biológico, el ajuste del pH, la incineración y el vertido en vertederos. Los contaminantes esperados en las descargas de los puntos de descarga incluyen sólidos suspendidos y disueltos, aceite, grasa y metales. Otros posibles contaminantes que pueden estar presentes en las descargas se incluyen en la Worksheet 2 de la solicitud del TPDES.



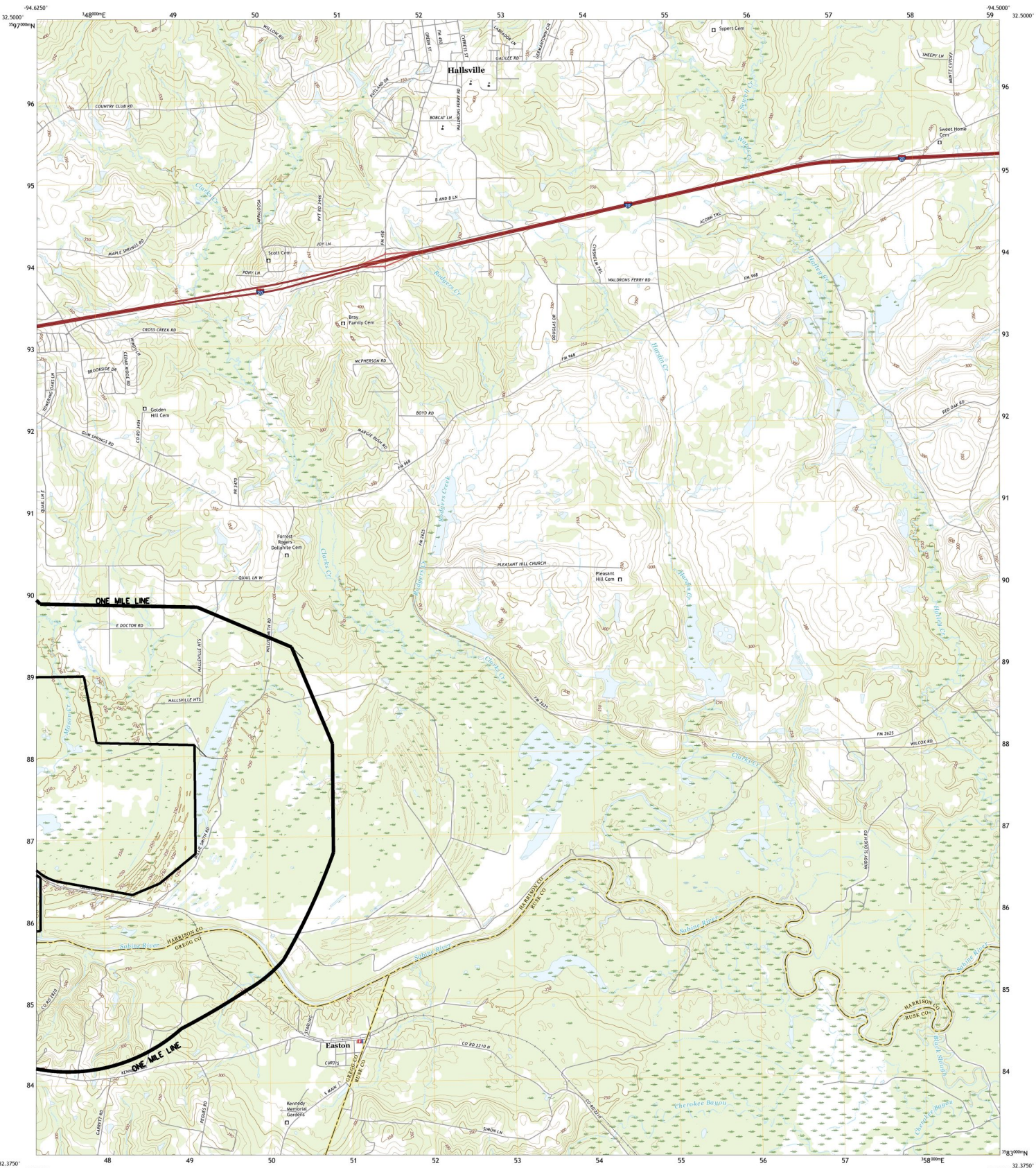
Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84), Projection and
1 600-meter grid/Universal Transverse Mercator, Zone 15S
This map is not a legal document. Boundaries may be
generated for this map scale. Private lands within government
reservations may not be shown. Obtain permission before
clearing private lands.

Imagery.....NAP, September 2016 - November 2016
Roads.....U.S. Census Bureau, 2015 - 2018
Names.....CENSUS, 1979 - 2002
Hydrography.....National Hydrography Dataset, 2004 - 2022
Contours.....NATIONAL Elevation Dataset, 2019
Boundaries.....Multiple sources; see metadata file 2019 - 2021
Wetlands.....FWS National Wetlands Inventory Not Available



ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Interstate Route
Local Connector
Local Road
4WD
US Route
State Route



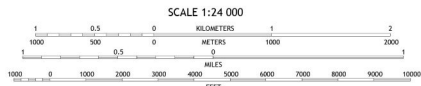


Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 800-meter grid/Universal Transverse Mercator, Zone 15S
This map is not a legal document. Boundaries may be
generalized for this map scale. Private lands within government
reservations may not be shown. Obtain permission before
entering private lands.

Imagery.....NAP, September 2016 - November 2016
Roads.....U.S. Census Bureau, 2015 - 2019
Names.....CGI, 1979 - 2021
Hydrography.....National Hydrography Dataset, 2004 - 2022
Contours.....National Elevation Dataset, 2019
Boundaries.....Multiple sources; see metadata file 2019 - 2021
Wetlands.....FWS National Wetlands Inventory Not Available

UTM GRID AND 2019 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

U.S. National Grid	UTM Zone Designation	15S
Magnetic Declination	Year	15S



ROAD CLASSIFICATION

Expressway	Local Connector
Secondary Hwy	Local Road
Ramp	6WD
Interstate Route	US Route
	State Route

1	2	3	1 Longview Heights
4	5	6	2 Hallsville
7	8	9	3 Marshall West
			4 Lakaport
			5 Luro
			6 Eldersville
			7 Tatum
			8 Harris Chapel

EASTON, TX
2022



**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
SUPPLEMENTAL PERMIT INFORMATION FORM (SPIF)**

**FOR AGENCIES REVIEWING DOMESTIC OR INDUSTRIAL
TPDES WASTEWATER PERMIT APPLICATIONS**

TCEQ USE ONLY:	
Application type: ____Renewal ____Major Amendment ____Minor Amendment ____New	
County: _____ Segment Number: _____	
Admin Complete Date: _____	
Agency Receiving SPIF:	
____ Texas Historical Commission	____ U.S. Fish and Wildlife
____ Texas Parks and Wildlife Department	____ U.S. Army Corps of Engineers

This form applies to TPDES permit applications only. (Instructions, Page 53)

Complete this form as a separate document. TCEQ will mail a copy to each agency as required by our agreement with EPA. If any of the items are not completely addressed or further information is needed, we will contact you to provide the information before issuing the permit. Address each item completely.

Do not refer to your response to any item in the permit application form. Provide each attachment for this form separately from the Administrative Report of the application. The application will not be declared administratively complete without this SPIF form being completed in its entirety including all attachments. Questions or comments concerning this form may be directed to the Water Quality Division’s Application Review and Processing Team by email at WO-ARPTeam@tceq.texas.gov or by phone at (512) 239-4671.

The following applies to all applications:

1. Permittee: Eastman Chemical Company

Permit No. WQ00 0000471000

EPA ID No. TX 0000949

Address of the project (or a location description that includes street/highway, city/vicinity, and county):

Eastman Chemical Company, Texas Operations. Located south of Longview, TX, south side of Interstate Highway 20 near the intersection of Interstate Highway 20 and State Highway 149, off of Kodak Blvd in Harrison County.

Provide the name, address, phone and fax number of an individual that can be contacted to answer specific questions about the property.

Prefix (Mr., Ms., Miss): Mr.

First and Last Name: Joel Murry

Credential (P.E, P.G., Ph.D., etc.):

Title: Environmental Specialist

Mailing Address: Eastman Chemical Company

City, State, Zip Code: Longview, TX 75607

Phone No.: 903-237-6181 Ext.: Fax No.:

E-mail Address: rmurry@eastman.com

2. List the county in which the facility is located: Harrison/Gregg
3. If the property is publicly owned and the owner is different than the permittee/applicant, please list the owner of the property.

N/A

4. Provide a description of the effluent discharge route. The discharge route must follow the flow of effluent from the point of discharge to the nearest major watercourse (from the point of discharge to a classified segment as defined in 30 TAC Chapter 307). If known, please identify the classified segment number.

Outfall 001 to Long Creek, thence to Segment 0505 of the Sabine River. Outfall 002 to an unnamed tributary known as Buckhorn Creek, thence to Segment 0505 of the Sabine River. Outfall 004 to Segment 0505 of the Sabine River. Outfall 005 to a spillway/ditch, thence to unnamed tributary known as Buckhorn Creek, thence to Segment 0505 of the Sabine River.

5. Please provide a separate 7.5-minute USGS quadrangle map with the project boundaries plotted and a general location map showing the project area. Please highlight the discharge route from the point of discharge for a distance of one mile downstream. (This map is required in addition to the map in the administrative report).

Provide original photographs of any structures 50 years or older on the property.

Does your project involve any of the following? Check all that apply.

- Proposed access roads, utility lines, construction easements
- Visual effects that could damage or detract from a historic property's integrity
- Vibration effects during construction or as a result of project design
- Additional phases of development that are planned for the future

Sealing caves, fractures, sinkholes, other karst features

Disturbance of vegetation or wetlands

1. List proposed construction impact (surface acres to be impacted, depth of excavation, sealing of caves, or other karst features):

None at this time but there could be any area within the Eastman property boundary.

2. Describe existing disturbances, vegetation, and land use:

None currently. Repairs could require disturbances within the Eastman property boundary

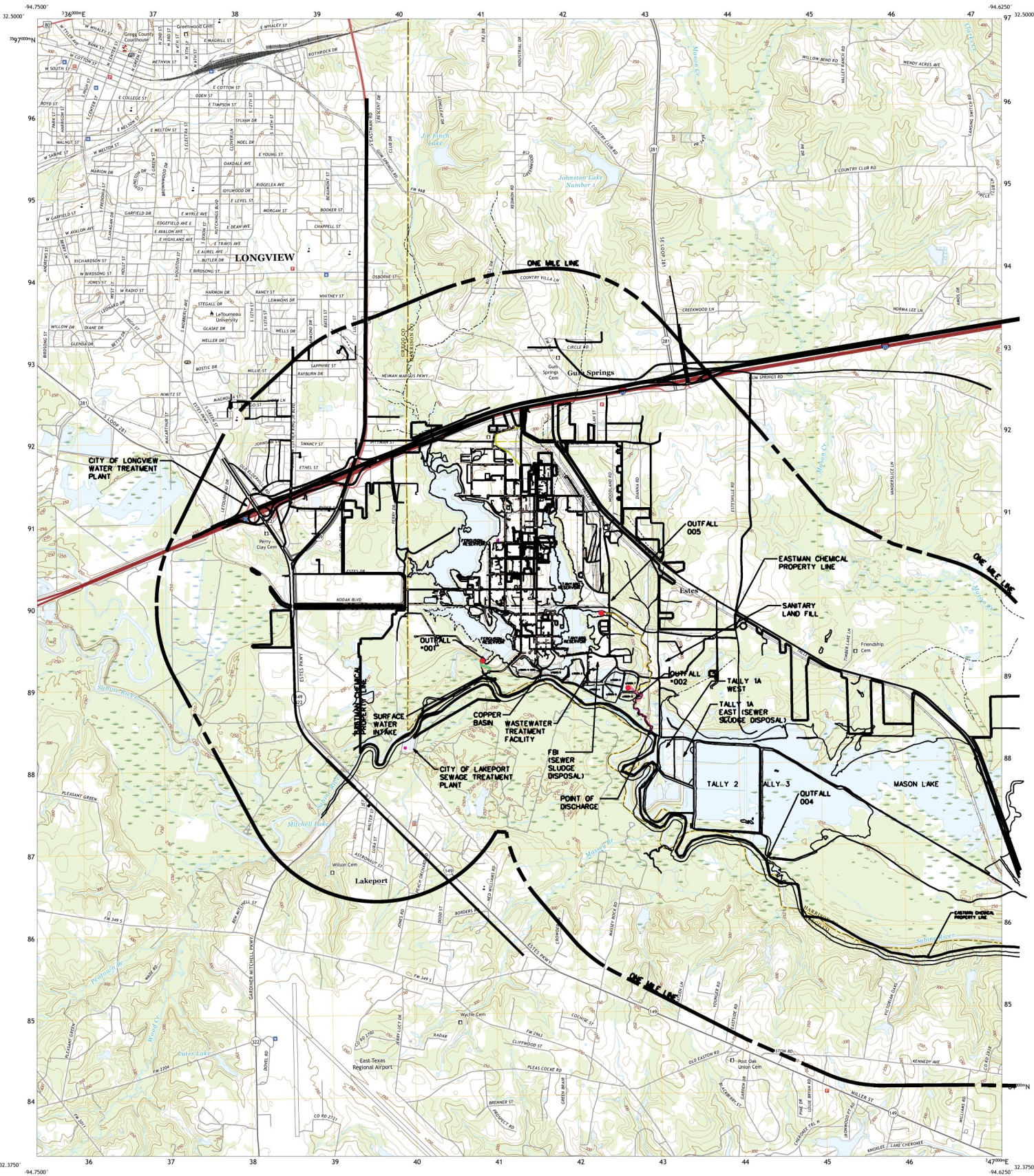
THE FOLLOWING ITEMS APPLY ONLY TO APPLICATIONS FOR NEW TPDES PERMITS AND MAJOR AMENDMENTS TO TPDES PERMITS

3. List construction dates of all buildings and structures on the property:

N/A

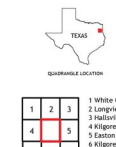
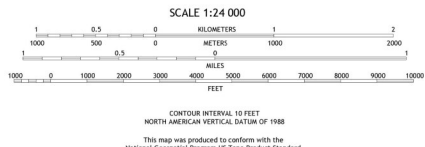
4. Provide a brief history of the property, and name of the architect/builder, if known.

An undeveloped wooded area converted to a chemical manufacturing plant. Some areas are still undeveloped. Some on-site plans are now owned by other companies (i.e. Westlake Longview Corporation, Synthomer Inc. Air Liquide Corp, Eastman Credit Union, and Invista).



Produced by the United States Geological Survey North American Datum of 1983 (NAD83) World Geodetic System of 1984 (WGS84) Projection and 1:600-meter grid/Universal Transverse Mercator, Zone 15S This map is not a legal document. Boundaries may be generated for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

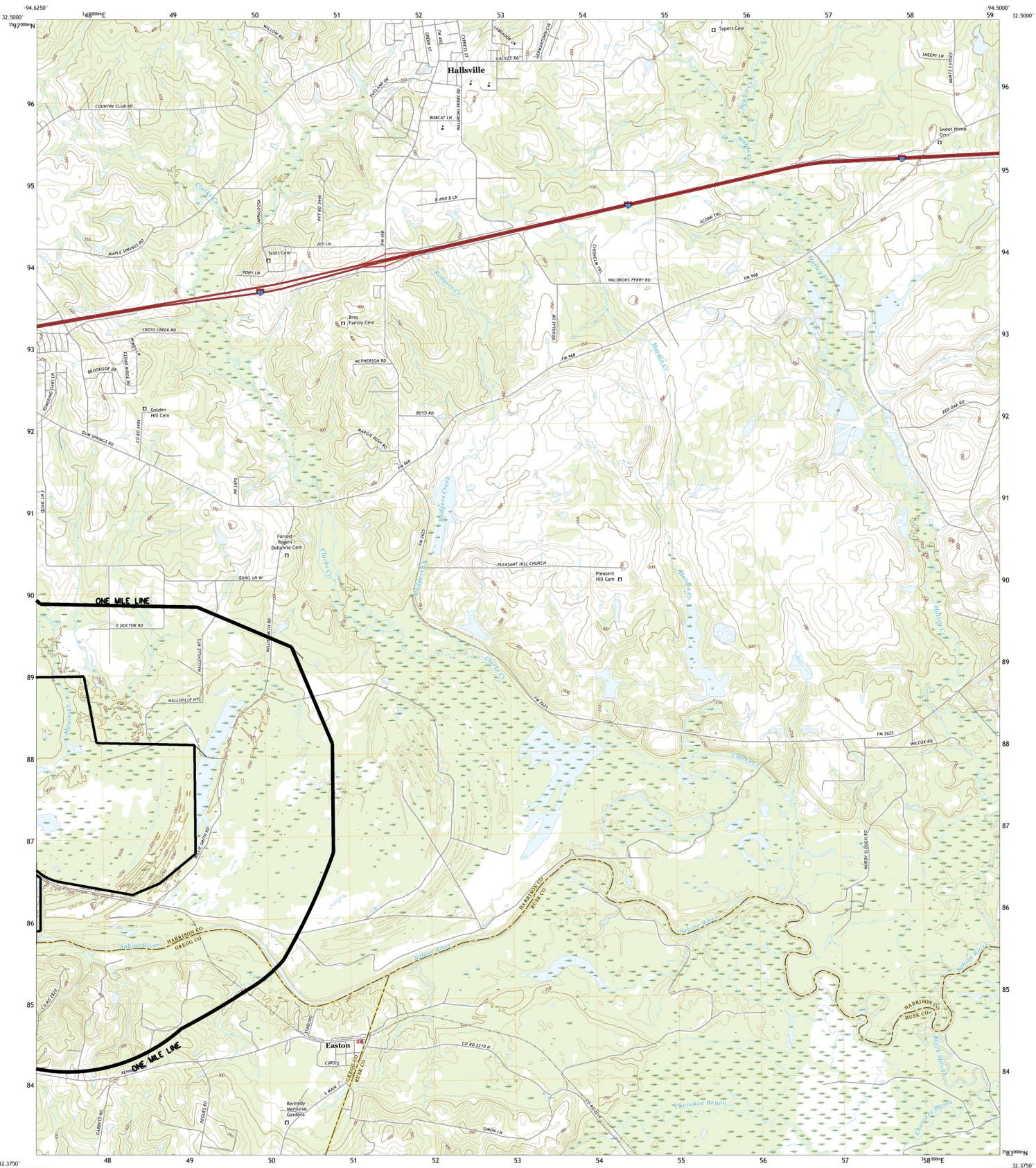
UTM GRID AND 2011 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET



ROAD CLASSIFICATION table with columns for Road Type and Road Number. Includes categories like Expressway, Secondary Hwy, Interstate Route, Local Connector, Local Road, and State Route.

LAKEPORT, TX 2022





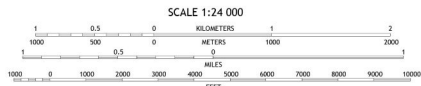
Produced by the United States Geological Survey
 North American Datum of 1983 (NAD83)
 World Geodetic System of 1984 (WGS84), Projection and
 1 800-meter grid/Universal Transverse Mercator, Zone 15S
 This map is not a legal document. Boundaries may be
 generated for this map scale. Private lands within government
 reservations may not be shown. Obtain permission before
 entering private lands.

Imagery.....NAPP, September 2016 - November 2016
 Roads.....U.S. Census Bureau, 2015 - 2019
 Names.....GPO, 1979 - 2021
 Hydrography.....National Hydrography Dataset, 2004 - 2022
 Contours.....National Elevation Dataset, 2019
 Boundaries.....Multiple sources; see metadata file 2019 - 2021

Wetlands.....FWS National Wetlands Inventory Not Available

UTM GRID AND 2019 MAGNETIC NORTH
 DECLINATION AT CENTER OF SHEET

UTM Zone Designation	UTM Easting	UTM Northing
18Q	500000	9600000
Grid Zone Designation	18Q	



QUADRANGLE LOCATION

1	2	3	1 Longview Heights
4	5	6	2 Hallsville
7	8	9	3 Marshall West
			4 Lakaport
			5 Luroc
			6 Eldersville
			7 Tatum
			8 Harris Chapel

ADJOINING QUADRANGLES

ROAD CLASSIFICATION

- Expressway (thick red line)
- Secondary Hwy (red line)
- Ramp (dashed red line)
- Interstate Route (blue shield)
- US Route (white circle)
- State Route (black circle)
- Local Connector (thin black line)
- Local Road (dashed black line)
- 6WD (black line)

EASTON, TX
2022



(1) Bld. No. 1 - Camera facing northeast



(2) Bld No. 1/1A – Camera facing north



(3) Bld No. 2 – Camera facing southwest



(4) Bld. No. 3 – Camera south southwest



(5) Bld. No. 4 – Camera facing southwest



(6) Bld. No. 5 – Camera facing south



(7) Bld. No. 6 – Camera facing northeast



(8) Bld No. 7/7A – Camera facing east



(9) Bld. No. 8 – Camera facing southwest



(10) Bld. No. 9 – Camera facing northwest



(11) Bld. No. 10 – Camera facing northeast



(12) Bld, No. 11 – Camera facing southwest



(13) Bld. No. 11-1 – Camera facing west



(14) Bld. No. 11-3 – Camera facing southwest



(15) Bld. No. 13 – Camera facing northeast



(16) Bld. No. 13-1 – Camera facing north



(17) Bld. No. 14 – Camera facing southeast



(18) Bld. No. 16 – Camera facing north



(19) Bld. No. 17 – Camera facing southwest



(20) Bld. No. 18 – Camera facing southwest



(21) Bld. No. 20 – Camera facing west



(22) Bld. No. 21 – Camera facing southwest



(23) Bld. No. 22 – Camera facing west



(24) Bld. No. 23 – Camera facing northeast



(25) Bld. No. 25-15 - Camera facing west



(26) Bld. No. 25-5 – Camera facing west



(27) Bld. No. 26 – Camera facing south



(28) Bld. No. 27-2 – Camera facing north



(29) Bld. No. 27-3 – Camera facing northeast



(30) Bld. No. 29 – Camera facing south



(31) Bld. No. 30-9 – Camera facing northeast



(32) Bld. No. 31- Camera facing southwest



(33) Bld. No. 32 – Camera facing northeast



(34) Bld. No. 33 – Camera facing south



(35) Bld. No. 34 – Camera facing northeast



(36) Bld. No. 36-1 – Camera facing northeast



(37) Bld. 36-2 – Camera facing northwest



(38) Bld. 37 – Camera facing east



(39) Bld. No. 39 – Camera facing northwest



(40) Bld. No. 39-1 – Camera facing northwest



(41) Bld. No. 41 – Camera facing north



(42) Bld. No. 46 – Camera facing north



(43) Bld. No. 47 – Camera facing northwest



(44) Bld. No. 48 – Camera facing northeast



(45) Bld. No. 50-1 – Camera facing southeast



(46) Bld. 50-3 – Camera facing southwest



(47) Bld. 50-4 – Camera facing north



(48) Bld. No. 51 – Camera facing southeast



(49) Bld. No. 52-1 – Camera facing northwest



(50) Bld. 39-2 – Camera facing northwest



(51) Bld No. 54



(52) Bld. No. 55 – Camera facing northeast



(53) Bld. No. 56-1 – Camera facing southwest



(54) Bld. No. 59-1 – Camera facing north



(55) Bld. No. 64-2



(56) Bld. No. 64-3



(57) Bld. No. 68



(58) Bld. No. 70-10



(59) Bld. No. 71-4



(60) Bld. No. 72-3



(61) Bld. No. 73





TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

INDUSTRIAL WASTEWATER PERMIT APPLICATION TECHNICAL REPORT 1.0

The following information **is required** for all applications for a TLAP or an individual TPDES discharge permit.

For **additional information** or clarification on the requested information, please refer to the [Instructions for Completing the Industrial Wastewater Permit Application](#)¹ available on the TCEQ website. Please contact the Industrial Permits Team at 512-239-4671 with any questions about this form.

If more than one outfall is included in the application, provide applicable information for each individual outfall. **If an item does not apply to the facility, enter N/A** to indicate that the item has been considered. Include separate reports or additional sheets as **clearly cross-referenced attachments** and provide the attachment number in the space provided for the item the attachment addresses.

NOTE: This application is for an industrial wastewater permit only. Additional authorizations from the TCEQ Waste Permits Division or the TCEQ Air Permits Division may be needed.

Item 1. Facility/Site Information (Instructions, Page 39)

- a. Describe the general nature of the business and type(s) of industrial and commercial activities. Include all applicable SIC codes (up to 4).

Production of Organic Chemicals and Plastics. Eastman Chemical Company also supplies services to captured facilities. SIC Codes 2869, 2821, 4937, 4619.

- b. Describe all wastewater-generating processes at the facility.

Eastman Chemical Company, Texas Operations (Eastman) is an integrated petrochemical manufacturing plant which primarily uses ethane and propane as feedstocks to produce a wide variety of chemicals and plastics, which creates wastewater. The wastewater treatment plant is an on-site facility, owned and operated by Eastman Chemical Company. Domestic sewage/septage is also generated and combined with industrial wastewater for treatment. Some septic tanks do not discharge into industrial wastewater collection. Industrial wastewater and domestic wastewater are also generated from captured facilities, Westlake Longview Corporation, Air Liquide Corporation, INVISTA Longview, Synthomer Adhesive Technologies LLC, and Eastman Credit Union. Eastman's wastewater system consists of an activated sludge plant (ASP), surface impoundments and ancillary equipment to collect, treat and convey wastewater. Eastman also operates a Fluid Bed Incinerator to reduce sludge volume from ASP operations. Incinerator ashes are landfilled on-site in TCEQ registered units. ASP dewatered sludge may also be landfilled on-site without incineration. Eastman also operates other Resource Conservation and Recovery Act (RCRA) facilities (e.g., Rotary Kiln Incinerator, Hazardous Waste Landfill, Tanks, Containers, etc.) which generate wastewaters. Flares are also used at this site to reduce and control emissions to the

¹
https://www.tceq.texas.gov/permitting/wastewater/industrial/TPDES_industrial_wastewater_steps.html

atmosphere, which also create wastewater. There will also be de minimis releases of chemicals to Eastman's process sewer collection system that are routed to the ASP. Industrial wastewater generation may increase with plant production increases. Domestic wastewater sewage/septage may increase slightly.

- c. Provide a list of raw materials, major intermediates, and final products handled at the facility.

Materials List

Raw Materials	Intermediate Products	Final Products

Attachment: See Attachment T-1

- d. Attach a facility map (drawn to scale) with the following information:
- Production areas, maintenance areas, materials-handling areas, waste-disposal areas, and water intake structures.
 - The location of each unit of the WWTP including the location of wastewater collection sumps, impoundments, outfalls, and sampling points, if significantly different from outfall locations.

Attachment: See Figures T-1 & T-2 and Attachment T-2

- e. Is this a new permit application for an existing facility?

Yes No

If yes, provide background discussion: [Click to enter text.](#)

f. Is/will the treatment facility/disposal site be located above the 100-year frequency flood level.

Yes No

List source(s) used to determine 100-year frequency flood plain: See Attachment T-3

If **no**, provide the elevation of the 100-year frequency flood plain and describe what protective measures are used/proposed to prevent flooding (including tail water and rainfall run-on controls) of the treatment facility and disposal area: [Click to enter text.](#)

Attachment: N/A

g. For **new** or **major amendment** permit applications, will any construction operations result in a discharge of fill material into a water in the state?

Yes No N/A (renewal only)

h. If **yes** to Item 1.g, has the applicant applied for a USACE CWA Chapter 404 Dredge and Fill permit? Not Applicable

Yes No

If **yes**, provide the permit number: N/A

If **no**, provide an approximate date of application submittal to the USACE: N/A

Item 2. Treatment System (Instructions, Page 40)

a. List any physical, chemical, or biological treatment process(es) used/proposed to treat wastewater at this facility. Include a description of each treatment process, starting with initial treatment and finishing with the outfall/point of disposal.

Eastman Chemical Company, Texas Operations (Eastman) operates a conventional activated sludge plant (ASP) for treatment of process wastewater generated by the production areas within the plant boundary, manages on-site generated domestic sewage/septage in the wastewater treatment plant and at times manages trucked-in wastewater generated by our Eastman Chemical Company Tyler Terminal facility. Prior to entering the ASP system, the influent wastewater is routed through equipment that removes some solids, which should not flow into the primary treatment system. The primary treatment system (approximate capacity of 202,821 gallons) includes a collection tank, splitter tank, clarifiers, screen, and holding tank. Solids from initial screening and the primary treatment system are dewatered and burned in Eastman's RCRA part B permitted rotary kiln incinerator (RKI). After primary treatment, the wastewater stream passes through a heat exchanger where the wastewater is cooled to a level which is conducive to treatment at the ASP. Upon entering the ASP, the wastewater goes to one of two equalization basins, each having approximately 840,000 gallons capacity. From equalization, the flow goes through a 25,000 gallon capacity tank for pH adjustment and nutrient addition (e.g., acid solutions, ammonia, etc.). From this tank, the wastewater flow is split and flows in parallel through the covered aeration basins which provide fine bubble aeration. Each aeration basin (there are eight basins) has a capacity of approximately 2,400,000 gallons and provides a nominal residence time of four days at normal flow (approximately 2,600 gallons per minute). After polymer addition, when needed, rapid mixing occurs in a 5,000 gallon capacity tank and flocculation in a 15,000 gallon capacity flocculation/splitter tank, the treated wastewater flow goes through the secondary clarifiers in parallel. Each of three clarifiers is 100 feet in diameter with a 14 foot sidewall and has a retention time of about twelve hours. After leaving the clarifiers treated wastewater can be sent directly to outfall 002 or can be diverted to Eastman's aerated lagoon system for diversionary needs or further treatment/polishing and then routed to outfall 002. Recycle sludge can be sent to a 2,100 gallon capacity holding tank prior to going back to the aeration basis or to a waste sludge

tank, but typically is routed off an aeration basin, which is used as a digester and then routed to the sludge dewatering building. Waste sludge is dewatered. The dewatered sludge is then sent to Eastman's RCRA part B permitted storage tank (107TK-30), which feeds the dewatered sludge into Eastman's Fluid Bed Incinerator (FBI). Dewatered sludge may also be landfilled without incineration. FBI incinerator ash is collected in containers and then disposed of in on-site landfill facilities. Several other treatment units are operated at Eastman to pre-treat, collect and/or pump wastewater prior to entering the ASP. These include API separators (approximately 15,000 gallons each) and a CPI separator (approximately 11,000 gallons) which removes light and heavy oils from the wastewater generated by the olefin units. Also, wastewater from the production of Acetaldehyde is reacted with a caustic solution which converts the chlorinated organics to inorganic salts. This occurs in three tanks with an approximate capacity of 41,000 gallons. The reacted stream is then stripped in a wastewater stripper column, whose capacity is approximately 2,200 gallons, with natural gas. The stripped gas is routed to Eastman's on-site RCRA, part B permitted RKI or a flare. A small surface impoundment, i.e., copper basin (CB), is used to settle and remove copper prior to pumping liquids to the ASP. Process once through cooling waters are routed to Eastman's cooling water reservoir system (i.e., Ferguson Reservoir/Cooling Water Reservoir No. 1 and Tanyard Reservoir/Cooling Water Reservoir No. 2). The reservoir system is used to dissipate heat generated from the once through cooling waters. The reservoir system also serves as low-rate waste stabilization ponds to provide biological treatment and reduction of organic chemicals, plastics and synthetic fiber (OCPSF) wastewater, storm water, and other low contamination potential wastewaters. Reservoir waters typically discharge through permitted Outfall 001 when the reservoir level is high enough but can and periodically discharge through Outfall 005, when heavy rainfall occurs. Reservoir No. 1 and Reservoir No. 2 are hydraulically connected via an underground gravity flow pipeline. Eastman believes Tanyard Reservoir handles very similar waters/wastewaters as those in Ferguson Reservoir, since the water within Ferguson Reservoir is also discharged into Tanyard Reservoir by process manufacturing plants from a closed cycle circulation system (CCRS). Outfall 004 is currently used to discharge collected rainfall from Talley's 2 and 3, which are no longer used for process wastewater treatment and which rarely occurs. There has been no process wastewater routed to the Talley 2 or Talley 3 for many years. The Talleys were formerly used for wastewater treatment but have since been certified closed per TCEQ's previous predecessor and closed per the regulatory requirements. Talley 2 and Talley 3 collecting waters may be returned to our plant for future use/re-use.

- b. Attach a flow schematic **with a water balance** showing all sources of water and wastewater flow into the facility, wastewater flow into and from each treatment unit, and wastewater flow to each outfall/point of disposal.

Attachment: See Attachment T-4

Item 3. Impoundments (Instructions, Page 40)

Does the facility use or plan to use any wastewater impoundments (e.g., lagoons or ponds?)

Yes No

If **no**, proceed to Item 4. If **yes**, complete **Item 3.a** for **existing** impoundments and **Items 3.a - 3.e** for **new or proposed** impoundments. **NOTE:** See instructions, Pages 40-42, for additional information on the attachments required by Items 3.a - 3.e.

- a. Complete the table with the following information for each existing, new, or proposed impoundment. Attach additional copies of the Impoundment Information table, if needed.

Use Designation: Indicate the use designation for each impoundment as Treatment (T), Disposal (D), Containment (C), or Evaporation (E).

Associated Outfall Number: Provide an outfall number if a discharge occurs or will occur.

Liner Type: Indicate the liner type as Compacted clay liner (C), In-situ clay liner (I), Synthetic/plastic/rubber liner (S), or Alternate liner (A). **NOTE:** See instructions for further detail on liner specifications. If an alternate liner (A) is selected, include an attachment that provides a description of the alternate liner and any additional technical information necessary for an evaluation.

Leak Detection System: If any leak detection systems are in place/planned, enter Y for yes. Otherwise, enter N for no.

Groundwater Monitoring Wells and Data: If groundwater monitoring wells are in place/planned, enter Y for yes. Otherwise, enter N for no. Attach any existing groundwater monitoring data.

Dimensions: Provide the dimensions, freeboard, surface area, storage capacity of the impoundments, and the maximum depth (not including freeboard). For impoundments with irregular shapes, submit surface area instead of length and width.

Compliance with 40 CFR Part 257, Subpart D: If the impoundment is required to be in compliance with 40 CFR Part 257, Subpart D, enter Y for yes. Otherwise, enter N for no.

Date of Construction: Enter the date construction of the impoundment commenced (mm/dd/yy).

Impoundment Information

Parameter	Pond # L4	Pond # L5	Pond # L6	Pond # L7
Use Designation: (T) (D) (C) or (E)	T	T	C and/or T	C and/or T
Associated Outfall Number	002	002	002	002
Liner Type (C) (I) (S) or (A)	None	None	None	None
Alt. Liner Attachment Reference	N/A	N/A	N/A	N/A
Leak Detection System, Y/N	N	N	N	N
Groundwater Monitoring Wells, Y/N	*	*	*	*
Groundwater Monitoring Data Attachment	*Groundwater monitoring program covered under RCRA permit 50043			
Pond Bottom Located Above The Seasonal High-Water Table, Y/N	Y	Y	Y	Y
Length (ft)	690	615	479	527
Width (ft)	352	605	479	527
Max Depth From Water Surface (ft), Not Including Freeboard	8	8	7.5	9.5
Freeboard (ft)	≥2	≥2	≥2	≥2
Surface Area (acres)	5.6	8.6	6.6	7.8
Storage Capacity (gallons)	18 M	28 M	20 M	29 M
40 CFR Part 257, Subpart D, Y/N	N	N	N	N
Date of Construction	1959	1959	1959	1959

Attachment: See Attachment T-5

The following information (**Items 3.b – 3.e**) is required only for **new or proposed** impoundments. Not Applicable

b. For new or proposed impoundments, attach any available information on the following items. If attached, check **yes** in the appropriate box. Otherwise, check **no** or **not yet designed**.

1. Liner data

Yes No Not yet designed

2. Leak detection system or groundwater monitoring data

Yes No Not yet designed

3. Groundwater impacts

Yes No Not yet designed

NOTE: Item b.3 is required if the bottom of the pond is not above the seasonal high-water table in the shallowest water-bearing zone.

Attachment: [Click to enter text.](#)

For TLAP applications: Items 3.c – 3.e are not required, continue to Item 4.

c. Attach a USGS map or a color copy of original quality and scale which accurately locates and identifies all known water supply wells and monitor wells within ½-mile of the impoundments.

Attachment: [Click to enter text.](#)

d. Attach copies of State Water Well Reports (e.g., driller’s logs, completion data, etc.), and data on depths to groundwater for all known water supply wells including a description of how the depths to groundwater were obtained.

Attachment: [Click to enter text.](#)

e. Attach information pertaining to the groundwater, soils, geology, pond liner, etc. used to assess the potential for migration of wastes from the impoundments or the potential for contamination of groundwater or surface water.

Attachment: [Click to enter text.](#)

Item 4. Outfall/Disposal Method Information (Instructions, Page 42)

Complete the following tables to describe the location and wastewater discharge or disposal operations for each outfall for discharge, and for each point of disposal for TLAP operations.

If there are more outfalls/points of disposal at the facility than the spaces provided, copies of pages 6 and/or numbered accordingly (i.e., page 6a, 6b, etc.) may be used to provide information on the additional outfalls.

For TLAP applications: Indicate the disposal method and each individual irrigation area **I**, evaporation pond **E**, or subsurface drainage system **S** by providing the appropriate letter designation for the disposal method followed by a numerical designation for each disposal area in the space provided for **Outfall** number (e.g. **E1** for evaporation pond 1, **I2** for irrigation area No. 2, etc.).

Outfall Longitude and Latitude

Outfall No.	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)
001	32.429568	-94.692511
002	32.426562	-94.673494
004	32.409007	-94.656497
005	32.434792	-94.676979

Outfall Location Description

Outfall No.	Location Description
001	Concrete spillway (broad crested rectangular weir) from reservoir No. 1 (Ferguson Reservoir) to Long Creek, then to the Sabine River, Segment No. 0505. The drainage area above Eastman property contributes to the water flow into reservoir. The drainage area running into the reservoir is known as Long Creek.
002	Effluent weir (sharp crested rectangular weir) box structure for flow from the Activated Sludge Plant (ASP) and/or various combinations of flow from Lagoon Numbers 4-8 (and collected storm water from Lagoon 2 and 3) through the weir box structure prior to outfall which enters an unnamed tributary, locally known as Buckhorn Creek, which then flows to the Sabine River, Segment No. 0505.
004	Effluent weir (sharp crested rectangular weir) box structure for flow from Talley 3 (i.e., surface impoundment) to Outfall 004. Eastman manages rainfall waters and low contamination potential wastewaters from past industrial wastewater input to Talley 2 and Talley 3. Talley 2 waters can flow to Talley 3 as done previously, if needed. Both Talley 2 and Talley 3 were certified closed by Eastman and an independent Professional Engineer on October 3, 1997 and have received no process wastewaters since that closure. Mason Lake, a freshwater reservoir, could also potentially flow rainfall waters into Talley 3 during flooding conditions. Mason Lake does not receive process wastewaters.
005	At the center of the roadway where the Tanyard Reservoir emergency spillway overflows in an easterly direction. The flow is to a widened drainage area flowing to an unnamed tributary, locally known as Buckhorn Creek, which then flows to the Sabine River, Segment No. 0505.

Description of Sampling Point(s) (if different from Outfall location)

Outfall No.	Description of sampling point
001	Not different
002	Not different
004	Not different
005	At a point where the flow velocity does not endanger the sample collector, but near the roadway overflow point.

Outfall Flow Information - Permitted and Proposed

Outfall No.	Permitted Daily Avg Flow (MGD)	Permitted Daily Max Flow (MGD)	Proposed Daily Avg Flow (MGD)	Proposed Daily Max Flow (MGD)	Anticipated Discharge Date (mm/dd/yy)
001	Report	Report			
002	6.4	8.0			
004	Report	Report			
005	Report	Report			

Outfall Discharge - Method and Measurement

Outfall No.	Pumped Discharge? Y/N	Gravity Discharge? Y/N	Type of Flow Measurement Device Used
001	N	Y	Broad crested rectangular concrete weir.
002	N	Y	Bubble pulse flow meter
004	N	Y	Rectangular sharp crested weir
005	N	Y	Calculated estimation

Outfall Discharge - Flow Characteristics

Outfall No.	Intermittent Discharge? Y/N	Continuous Discharge? Y/N	Seasonal Discharge? Y/N	Discharge Duration (hrs/day)	Discharge Duration (days/mo)	Discharge Duration (mo/yr)
001	Y	N	N	Varies	Varies	Varies
002	N	N	Y	24	28-31	12
004	Y	N	N	Varies	Varies	Varies
005	Y	N	N	Varies	Varies	Varies

Outfall Wastestream Contributions

Outfall No. 001

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow
Process wastewater	0.0018	0.02
Boiler blowdown	0.0063	0.03
Once Through cooling waters	8.9	99.3
Utility	0.053	0.59

Outfall No. 002

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow
Process Wastewater	4.38	68.4
Cooling Tower Blowdown	1.32	20.6
Deionizer Regenerate WW	0.25	3.91
Domestic Wastewater	0.21	3.28
Boiler Blowdowns	0.24	3.75

Outfall No. [Click to enter text.](#)004

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow
Stormwater from certified closed Talley 2, Talley 3. Mason Lake	Varies	0-100

Outfall No. 005

Contributing Wastestream	Volume (MGD)	Percent (%) of Total Flow
Process wastewater	6.0 x 10 ⁻⁵	0.02
Boiler blowdown	9.0 x 10 ⁻⁵	0.03
Once Through cooling waters	3.0 x 10 ⁻¹	99.3
Utility	1.8 x 10 ⁻³	0.59
<p>Note: Outfall 005 is the emergency spillway for Cooling Water Reservoir No. 2, also known as Ferguson Lake. There is very low potential for any waste stream to discharge out of the outfall. The outfall averaged 0.06 MGD in 2024.</p>		

Attachment: [Click to enter text.](#)

Item 5. Blowdown and Once-Through Cooling Water Discharges (Instructions, Page 43)

a. Indicate if the facility currently or proposes to:

- Yes No Use cooling towers that discharge blowdown or other wastestreams
- Yes No Use boilers that discharge blowdown or other wastestreams
- Yes No Discharge once-through cooling water

NOTE: If the facility uses or plans to use cooling towers or once-through cooling water, Item 12 is required.

b. If **yes** to any of the above, attach an SDS with the following information for each chemical additive.

- Manufacturers Product Identification Number
- Product use (e.g., biocide, fungicide, corrosion inhibitor, etc.)
- Chemical composition including CASRN for each ingredient
- Classify product as non-persistent, persistent, or bioaccumulative
- Product or active ingredient half-life
- Frequency of product use (e.g., 2 hours/day once every two weeks)
- Product toxicity data specific to fish and aquatic invertebrate organisms
- Concentration of whole product or active ingredient, as appropriate, in wastestream.

In addition to each SDS, attach a summary of the above information for each specific wastestream and the associated chemical additives. Specify which outfalls are affected.

Attachment: See attachment T-6

c. Cooling Towers and Boilers

If the facility currently or proposes to use cooling towers or boilers that discharge blowdown or other wastestreams to the outfall(s), complete the following table.

Cooling Towers and Boilers

Type of Unit	Number of Units	Daily Avg Blowdown (gallons/day)	Daily Max Blowdown (gallons/day)
Cooling Towers	10	792,864	1,937,265
Boilers	36	257,519	343,746

Item 6. Stormwater Management (Instructions, Page 44)

Will any existing/proposed outfalls discharge stormwater associated with industrial activities, as defined at 40 CFR § 122.26(b)(14), commingled with any other wastestream?

- Yes No

If **yes**, briefly describe the industrial processes and activities that occur outdoors or in a manner which may result in exposure of the activities or materials to stormwater:

Manufacturing processes at this facility are open to rainfall. Numerous locations throughout the plant

capture rainwater and route that rainwater to the Activated Sludge Plant (ASP), which discharges to Outfall 002. Chemical transfer and loading operations also occur in areas susceptible to rainfall. Processing and storage of chemicals occurs in facilities located outdoors. Some of these areas discharge to process sewer locations and other locations discharge to our reservoirs (i.e., Ferguson Reservoir – No. 1 and Tanyard Reservoir – No. 2) via stormwater drains. Some secondary containment areas, which contain process equipment, tanks farms, etc., also route rainfall run-off into Ferguson and Tanyard Reservoirs. Stormwater sources of rainfall run-off could also include water containing pesticides and/or herbicides, air conditioner condensate, steam trap blowdowns, cooling tower leaks, etc.. The volume of stormwater flow into Ferguson Reservoir and Tanyard Reservoir is not controllable by Eastman. Our reservoirs are located down gradient and flow enters each reservoir from the boundary limits of the City of Longview. A Multi-Sector General storm water permit has been issued for certain areas of Eastman’s plant, related to the Buckhorn Creek watershed area.

Item 7. Domestic Sewage, Sewage Sludge, and Septage Management and Disposal (Instructions, Page 44)

Domestic Sewage - Waste and wastewater from humans or household operations that is discharged to a wastewater collection system or otherwise enters a treatment works.

- a. Check the box next to the appropriate method of domestic sewage and domestic sewage sludge treatment or disposal. Complete Worksheet 5.0 or Item 7.b if directed to do so.
 - Domestic sewage is routed (i.e., connected to or transported to) to a WWTP permitted to receive domestic sewage for treatment, disposal, or both. Complete Item 7.b.
 - Domestic sewage disposed of by an on-site septic tank and drainfield system. Complete Item 7.b.
 - Domestic and industrial treatment sludge ARE commingled prior to use or disposal.
 - Industrial wastewater and domestic sewage are treated separately, and the respective sludge IS NOT commingled prior to sludge use or disposal. Complete Worksheet 5.0.
 - Facility is a POTW. Complete Worksheet 5.0.
 - Domestic sewage is not generated on-site.
 - Other (e.g., portable toilets), specify and Complete Item 7.b: Portable toilets are used at Eastman. A contractor services those units. Currently, those wastewaters are comingled with industrial wastewater prior to sludge disposal.
- b. Provide the name and TCEQ, NPDES, or TPDES Permit No. of the waste-disposal facility which receives the domestic sewage/septage. If hauled by motorized vehicle, provide the name and TCEQ Registration No. of the hauler.

Domestic Sewage Plant/Hauler Name

Plant/Hauler Name	Permit/Registration No.
Red Fox Services, LLC	08202/26768
AP Equipment & Rentals, Inc	WQ0010589002/22172

Item 8. Improvements or Compliance/Enforcement Requirements (Instructions, Page 45)

- a. Is the permittee currently required to meet any implementation schedule for compliance or enforcement?
 Yes No
- b. Has the permittee completed or planned for any improvements or construction projects?
 Yes No
- c. If **yes** to either 8.a or 8.b, provide a brief summary of the requirements and a status update: N/A

Item 9. Toxicity Testing (Instructions, Page 45)

Have any biological tests for acute or chronic toxicity been made on any of the discharges or on a receiving water in relation to the discharge within the last three years?

Yes No

If **yes**, identify the tests and describe their purposes: Eastman conducts acute and chronic biomonitoring for Outfall 002 as required by the current permit. All results have been submitted, and no additional testing is performed.

Additionally, attach a copy of all tests performed which **have not** been submitted to the TCEQ or EPA. **Attachment:** All results have been submitted through NetDMR

Item 10. Off-Site/Third Party Wastes (Instructions, Page 45)

- a. Does or will the facility receive wastes from off-site sources for treatment at the facility, disposal on-site via land application, or discharge via a permitted outfall?

Yes No

If **yes**, provide responses to Items 10.b through 10.d below.

If **no**, proceed to Item 11.

- b. Attach the following information to the application:

- List of wastes received (including volumes, characterization, and capability with on-site wastes).
- Identify the sources of wastes received (including the legal name and addresses of the generators).
- Description of the relationship of waste source(s) with the facility's activities.

Attachment: See Attachment T-7

- c. Is or will wastewater from another TCEQ, NPDES, or TPDES permitted facility commingled with this facility's wastewater after final treatment and prior to discharge via the final outfall/point of disposal?

Yes No

If **yes**, provide the name, address, and TCEQ, NPDES, or TPDES permit number of the contributing facility and a copy of any agreements or contracts relating to this activity.

Attachment: N/A

d. Is this facility a POTW that accepts/will accept process wastewater from any SIU and has/is required to have an approved pretreatment program under the NPDES/TPDES program?

- Yes No

If **yes**, **Worksheet 6.0** of this application is required.

Item 11. Radioactive Materials (Instructions, Page 46)

a. Are/will radioactive materials be mined, used, stored, or processed at this facility?

- Yes No

If **yes**, use the following table to provide the results of one analysis of the effluent for all radioactive materials that may be present. Provide results in pCi/L.

Radioactive Materials Mined, Used, Stored, or Processed

Radioactive Material Name	Concentration (pCi/L)
N/A per instructions for radioactive materials fixed in an instrument.	

b. Does the applicant or anyone at the facility have any knowledge or reason to believe that radioactive materials may be present in the discharge, including naturally occurring radioactive materials in the source waters or on the facility property?

- Yes No

If **yes**, use the following table to provide the results of one analysis of the effluent for all radioactive materials that may be present. Provide results in pCi/L. Do not include information provided in response to Item 11.a.

Radioactive Materials Present in the Discharge

Radioactive Material Name	Concentration (pCi/L)

Item 12. Cooling Water (Instructions, Page 46)

a. Does the facility use or propose to use water for cooling purposes?

- Yes
 No
 Decommissioned: [Click to enter text.](#)
 To Be Decommissioned: [Click to enter text.](#)

If **yes**, complete Items 12.b thru 12.f. If **no**, stop here.

If **decommissioned**, provide the date operation ceased and stop here.

If to **be decommissioned**, provide the date operation is anticipated to cease and stop here.

b. Cooling water is/will be obtained from a groundwater source (e.g., on-site well).

- Yes No

If **yes**, stop here. If **no**, continue.

c. Cooling Water Supplier

- Provide the name of the owner(s) and operator(s) for the CWIS that supplies or will supply water for cooling purposes to the facility.

Cooling Water Intake Structure(s) Owner(s) and Operator(s)

CWIS ID	CWIS-8			
Owner	Eastman Chemical Company			
Operator	Eastman Chemical Company			

- Cooling water is/will be obtained from a Public Water Supplier (PWS)

- No Yes; PWS No.: [Click to enter text.](#)

If **no**, continue. If **yes**, provide the PWS Registration No. and stop here.

- Cooling water is/will be obtained from a reclaimed water source?

- No Yes; Auth No.: [Click to enter text.](#)

If **no**, continue. If **yes**, provide the Reuse Authorization No. and stop here.

- Cooling water is/will be obtained from an Independent Supplier

- No Yes; AIF: [Click to enter text.](#)

If **no**, proceed to Item 12.d. If **yes**, provide the actual intake flow of the Independent Supplier's CWIS that is/will be used to provide water for cooling purposes and proceed.

d. 316(b) General Criteria

1. The CWIS(s) used to provide water for cooling purposes to the facility has or will have a cumulative design intake flow of 2 MGD or greater.

Yes No

2. At least 25% of the total water withdrawn by the CWIS(s) is/will be used at the facility exclusively for cooling purposes on an annual average basis.

Yes No

3. The CWIS(s) withdraw(s)/propose(s) to withdraw water for cooling purposes from surface waters that meet the definition of Waters of the United States in *40 CFR § 122.2*.

Yes No. Explanation: [Click to enter text.](#)

If **no**, provide an explanation of how the waterbody does not meet the definition of Waters of the United States in *40 CFR § 122.2*.

If **yes** to all three questions in Item 12.d, the facility **meets** the minimum criteria to be subject to the full requirements of Section 316(b) of the CWA. Proceed to **Item 12.f**.

If **no** to any of the questions in Item 12.d, the facility **does not meet** the minimum criteria to be subject to the full requirements of Section 316(b) of the CWA; however, a determination is required based upon BPJ. Proceed to **Item 12.e**.

e. The facility does not meet the minimum requirements to be subject to the fill requirements of Section 316(b) **and uses/proposes to use cooling towers**.

Yes No

If **yes**, stop here. If **no**, complete Worksheet 11.0, Items 1.a, 1.b.1-3 and 6, 2.b.1, and 3.a to allow for a determination based upon BPJ.

f. Oil and Gas Exploration and Production

1. The facility is subject to requirements at 40 CFR Part 435, Subparts A or D.

Yes No

If **yes**, continue. If **no**, skip to Item 12.g.

2. The facility is an existing facility as defined at 40 CFR § 125.92(k) or a new unit at an existing facility as defined at 40 CFR § 125.92(u).

Yes No

If **yes**, complete Worksheet 11.0, Items 1.a, 1.b.1-3 and 6, 2.b.1, and 3.a to allow for a determination based upon BPJ. If **no**, skip to Item 12.g.3.

g. Compliance Phase and Track Selection

1. Phase I - New facility subject to 40 CFR Part 125, Subpart I

Yes No

If **yes**, check the box next to the compliance track selection, attach the requested information, and complete Worksheet 11.0, Items 2 and 3, and Worksheet 11.2.

Track I - AIF greater than 2 MGD, but less than 10 MGD

- Attach information required by 40 CFR §§ 125.86(b)(2)-(4).
- Track I - AIF greater than 10 MGD
 - Attach information required by 40 CFR § 125.86(b).
- Track II
 - Attach information required by 40 CFR § 125.86(c).

Attachment: N/A

2. Phase II - Existing facility subject to 40 CFR Part 125, Subpart J

- Yes No

If **yes**, complete Worksheets 11.0 through 11.3, as applicable.

3. Phase III - New facility subject to 40 CFR Part 125, Subpart N

- Yes No

If **yes**, check the box next to the compliance track selection and provide the requested information.

- Track I - Fixed facility
 - Attach information required by 40 CFR § 125.136(b) and complete Worksheet 11.0, Items 2 and 3, and Worksheet 11.2.
- Track I - Not a fixed facility
 - Attach information required by 40 CFR § 125.136(b) and complete Worksheet 11.0, Item 2 (except CWIS latitude/longitude under Item 2.a).
- Track II - Fixed facility
 - Attach information required by 40 CFR § 125.136(c) and complete Worksheet 11.0, Items 2 and 3.

Attachment: N/A

Item 13. Permit Change Requests (Instructions, Page 48)

This item is only applicable to existing permitted facilities.

a. Is the facility requesting a **major amendment** of an existing permit?

- Yes No

If **yes**, list each request individually and provide the following information: 1) detailed information regarding the scope of each request and 2) a justification for each request. Attach any supplemental information or additional data to support each request.

Click to enter text.

b. Is the facility requesting any **minor amendments** to the permit?

- Yes No

If **yes**, list and describe each change individually.

Click to enter text.

c. Is the facility requesting any **minor modifications** to the permit?

- Yes No

If **yes**, list and describe each change individually.

Click to enter text.

Item 14. Laboratory Accreditation (Instructions, Page 49)

All laboratory tests performed must meet the requirements of *30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification*, which includes the following general exemptions from National Environmental Laboratory Accreditation Program (NELAP) certification requirements:

- The laboratory is an in-house laboratory and is:
 - periodically inspected by the TCEQ; or
 - located in another state and is accredited or inspected by that state; or
 - performing work for another company with a unit located in the same site; or
 - performing pro bono work for a governmental agency or charitable organization.
- The laboratory is accredited under federal law.
- The data are needed for emergency-response activities, and a laboratory accredited under the Texas Laboratory Accreditation Program is not available.
- The laboratory supplies data for which the TCEQ does not offer accreditation.

The applicant should review *30 TAC Chapter 25* for specific requirements.

The following certification statement shall be signed and submitted with every application. See the *Signature Page* section in the Instructions, for a list of designated representatives who may sign the certification.

CERTIFICATION:

I certify that all laboratory tests submitted with this application meet the requirements of 30 TAC Chapter 25, *Environmental Testing Laboratory Accreditation and Certification*.

Printed Name: [Click to enter text.](#)

Title: [Click to enter text.](#)

Signature: _____

Date: _____

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 1.0: EPA CATEGORICAL EFFLUENT GUIDELINES

This worksheet **is required** for all applications for TPDES permits for discharges of wastewaters subject to EPA categorical effluent limitation guidelines (ELGs).

Item 1. Categorical Industries (Instructions, Page 53)

Is this facility subject to any 40 CFR categorical ELGs outlined on page 53 of the instructions?

Yes No

If **no**, this worksheet is not required. If **yes**, provide the appropriate information below.

40 CFR Effluent Guideline

Industry	40 CFR Part
Organic Chemicals, Plastics, and Synthetic Fibers	414
Inorganic Chemicals	415

Item 2. Production/Process Data (Instructions, Page 54)

NOTE: For all TPDES permit applications requesting individual permit coverage for discharges of oil and gas exploration and production wastewater (discharges into or adjacent to water in the state, falling under the Oil and Gas Extraction Effluent Guidelines – 40 CFR Part 435), see Worksheet 12.0, Item 2 instead.

a. Production Data

Provide appropriate data for effluent guidelines with production-based effluent limitations.

Production Data

Subcategory	Actual Quantity/Day	Design Quantity/Day	Units
Part 415 Subpart AW - Oxygen production	2,500,000	2,580,000	Lbs./day

b. Organic Chemicals, Plastics, and Synthetic Fibers Manufacturing Data (40 CFR Part 414)

Provide each applicable subpart and the percent of total production. Provide data for metal-bearing and cyanide-bearing wastestreams, as required by 40 CFR Part 414, Appendices A and B.

Percentage of Total Production

Subcategory	Percent of Total Production	Appendix A and B - Metals	Appendix A - Cyanide
D-Thermoplastic Resins	25.2%	See Attachment T-11	N/A
F-Commodity Organic Chemicals	29.3 %		N/A
G-Bulk Organic Chemicals	38.2%		N/A
H-Specialty Organic Chemicals	7.3 %		N/A

c. Refineries (40 CFR Part 419)

Provide the applicable subcategory and a brief justification.

N/A

Item 3. Process/Non-Process Wastewater Flows (Instructions, Page 54)

Provide a breakdown of wastewater flow(s) generated by the facility, including both process and non-process wastewater flow(s). Specify which wastewater flows are to be authorized for discharge under this permit and the disposal practices for wastewater flows, excluding domestic, which are not to be authorized for discharge under this permit.

See Attachments T-4, T-7, T-9, T-10

Item 4. New Source Determination (Instructions, Page 54)

Provide a list of all wastewater-generating processes subject to EPA categorical ELGs, identify the appropriate guideline Part and Subpart, and provide the date the process/construction commenced.

Wastewater Generating Processes Subject to Effluent Guidelines

Process	EPA Guideline Part	EPA Guideline Subpart	Date Process/Construction Commenced
Hydrocarbon Cracking Unit 3	414	F	1965
Hydrocarbon Cracking Unit 3A	414	F	1970
Hydrocarbon Cracking Unit 4	414	F	1974
Acetaldehyde Plant 1	414	F	1983
Acetaldehyde Plant 2	414	F	1966
Polyethylene Plant 1	414	D	1969
Polyethylene Plant 2	414	D	1954
Polyethylene Plant 3	414	D	1983
Aldehyde Reduction Plant	414	G	1952
Oxo Aldehyde Plant	414	G, H	1952
Texanol Plant	414	H	1961
Ethylene Glycol Plant 1	414	F, G, H	1966
Ethylene Glycol Plant 2	414	F, G, H	1975
Epolene Plant	414	D	1959
Isobutyric Acid Plant 1	414	H	1972
Isobutyric Acid Plant 2	414	H	1986
Polypropylene Plant 2, Line 1	414	D	1989
Polypropylene Plant 2, Line 2	414	D	1991
Neo-pentyl Glycol Plant	414	H	1957
Glycol Ether Plant 1	414	G,H	1969
Glycol Ether Plant 2	414	Subpart G,H	1979
Eastotac Plant	414	D	1971
Eastoflex	414	D	~1987
Ethyl Acetate	414	H	1968
Propionic Acid	414	Subpart G	1995
Pilot Plant	414	H	~1952
EpB Plant	414	Subpart H	1995
Semi-works	414	Subpart F,G,H	~1990

Process	EPA Guideline Part	EPA Guideline Subpart	Date Process/ Construction Commenced
Air Liquide Corporation - Oxygen supplied to Eastman	415	AW	2002
Landfills (Hazardous)	445*	A*	1987
Landfill (Non-hazardous)	445*	B*	1984

**40 CFR Part 445 not applicable. Eastman is claiming 40 CFR, Part 445.1(f) for landfills used by Eastman and captured facilities

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 2.0: POLLUTANT ANALYSIS

Worksheet 2.0 is **required** for all applications submitted for a TPDES permit. Worksheet 2.0 is not required for applications for a permit to dispose of all wastewater by land disposal or for discharges solely of stormwater associated with industrial activities.

Item 1. General Testing Requirements (Instructions, Page 55)

- a. Provide the date range of all sampling events conducted to obtain the analytical data submitted with this application (e.g., 05/01/2018-05/30/2018): 09/23/25-ongoing
- b. Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.
- c. Read the general testing requirements in the instructions for important information about sampling, test methods, and MALs. If a contact laboratory was used, attach a list which includes the name, contact information, and pollutants analyzed for each laboratory/firm.
Attachment: See Attachment T-8

Item 2. Specific Testing Requirements (Instructions, Page 56)

Attach correspondence from TCEQ approving submittal of less than the required number of samples, if applicable. **Attachment:** N/A **Note: Outfall was not flowing during most of the application period, additional results will be submitted when they become available.**

TABLE 1 and TABLE 2 (Instructions, Page 58)

Completion of Tables 1 and 2 is required for all external outfalls for all TPDES permit applications.

Table 1 for Outfall No.: 001

Samples are (check one): Composite Grab

Note: Outfall 001 flows intermittently and only a few samples could be caught before the application was due. Results will continue to be reported as sampling is available.

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
BOD (5-day)				
CBOD (5-day)				
Chemical oxygen demand				
Total organic carbon				
Dissolved oxygen				
Ammonia nitrogen				
Total suspended solids				
Nitrate nitrogen				
Total organic nitrogen				
Total phosphorus				
Oil and grease	<1.65			

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
Total residual chlorine				
Total dissolved solids				
Sulfate				
Chloride				
Fluoride				
Total alkalinity (mg/L as CaCO3)				
Temperature (°F)				
pH (standard units)				

Table 2 for Outfall No.: **001**

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	MAL (µg/L)
Aluminum, total					2.5
Antimony, total					5
Arsenic, total					0.5
Barium, total					3
Beryllium, total					0.5
Cadmium, total					1
Chromium, total					3
Chromium, hexavalent					3
Chromium, trivalent					N/A
Copper, total					2
Cyanide, available					2/10
Lead, total					0.5
Mercury, total					0.005/0.0005
Nickel, total					2
Selenium, total					5
Silver, total					0.5
Thallium, total					0.5
Zinc, total					5.0

TABLE 3 (Instructions, Page 58)

Completion of Table 3 is required for all **external outfalls** which discharge process wastewater.

Partial completion of Table 3 is required for all **external outfalls** which discharge non-process wastewater and stormwater associated with industrial activities commingled with other wastestreams (see instructions for additional guidance).

Table 3 for Outfall No.: **001**

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Acrylonitrile	<0.35				50
Anthracene					10
Benzene	<0.66				10
Benzdine	<0.38				50
Benzo(a)anthracene	<0.85				5
Benzo(a)pyrene	<0.72				5
Bis(2-chloroethyl)ether	<2.2				10
Bis(2-ethylhexyl)phthalate					10
Bromodichloromethane [Dichlorobromomethane]					10
Bromoform					10
Carbon tetrachloride					2
Chlorobenzene					10
Chlorodibromomethane [Dibromochloromethane]					10
Chloroform	<0.57				10
Chrysene					5
m-Cresol [3-Methylphenol]	<1				10
o-Cresol [2-Methylphenol]					10
p-Cresol [4-Methylphenol]					10
1,2-Dibromoethane					10
m-Dichlorobenzene [1,3-Dichlorobenzene]					10
o-Dichlorobenzene [1,2-Dichlorobenzene]					10
p-Dichlorobenzene [1,4-Dichlorobenzene]	<0.88				10
3,3'-Dichlorobenzidine					5
1,2-Dichloroethane					10
1,1-Dichloroethene					10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
[1,1-Dichloroethylene]					
Dichloromethane [Methylene chloride]					20
1,2-Dichloropropane					10
1,3-Dichloropropene [1,3-Dichloropropylene]	<0.53				10
2,4-Dimethylphenol	<1.22				10
Di-n-Butyl phthalate					10
Epichlorohydrin (1-Chloro-2,3-epoxypropane)					---
Ethylbenzene					10
Ethylene Glycol	<0.69				---
Fluoride	<0.41				500
Hexachlorobenzene	<0.35				5
Hexachlorobutadiene	<0.47				10
Hexachlorocyclopentadiene					10
Hexachloroethane					20
4,4'-Isopropylidenediphenol (bisphenol A)					1
Methyl ethyl ketone	<0.91				50
Methyl tert-butyl ether (MTBE)	<5				---
Nitrobenzene	<5				10
N-Nitrosodiethylamine					20
N-Nitroso-di-n-butylamine	<3				20
Nonylphenol	<0.5				333
Pentachlorobenzene	<0.44				20
Pentachlorophenol					5
Phenanthrene	<0.35				10
Polychlorinated biphenyls (PCBs) (**)	<5				0.2
Pyridine	<0.35				20
1,2,4,5-Tetrachlorobenzene					20
1,1,2,2-Tetrachloroethane					10
Tetrachloroethene [Tetrachloroethylene]					10
Toluene					10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
1,1,1-Trichloroethane					10
1,1,2-Trichloroethane					10
Trichloroethene [Trichloroethylene]					10
2,4,5-Trichlorophenol					50
TTHM (Total trihalomethanes)					10
Vinyl chloride					10

(*) Indicate units if different from µg/L.

(**) Total of detects for PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, and PCB-1016. If all non-detects, enter the highest non-detect preceded by a "<".

TABLE 4 (Instructions, Pages 58-59)

Partial completion of Table 4 **is required** for each **external outfall** based on the conditions below.

a. Tributyltin

Is this facility an industrial/commercial facility which currently or proposes to directly dispose of wastewater from the types of operations listed below or a domestic facility which currently or proposes to receive wastewater from the types of industrial/commercial operations listed below?

Yes No

If **yes**, check the box next to each of the following criteria which apply and provide the appropriate testing results in Table 4 below (check all that apply).

- Manufacturers and formulators of tributyltin or related compounds.
- Painting of ships, boats and marine structures.
- Ship and boat building and repairing.
- Ship and boat cleaning, salvage, wrecking and scaling.
- Operation and maintenance of marine cargo handling facilities and marinas.
- Facilities engaged in wood preserving.
- Any other industrial/commercial facility for which tributyltin is known to be present, or for which there is any reason to believe that tributyltin may be present in the effluent.

b. Enterococci (discharge to saltwater)

This facility discharges/proposes to discharge directly into saltwater receiving waters **and** Enterococci bacteria are expected to be present in the discharge based on facility processes.

Yes No

Domestic wastewater is/will be discharged.

Yes No

If **yes to either** question, provide the appropriate testing results in Table 4 below.

c. E. coli (discharge to freshwater)

This facility discharges/proposes to discharge directly into freshwater receiving waters and *E. coli* bacteria are expected to be present in the discharge based on facility processes.

Yes No

Domestic wastewater is/will be discharged.

Yes No

If **yes to either** question, provide the appropriate testing results in Table 4 below.

Table 4 for Outfall No.: **001**

Samples are (check one): Composite Grab

Pollutant	Sample 1	Sample 2	Sample 3	Sample 4	MAL
Tributyltin (µg/L)					0.010
Enterococci (cfu or MPN/100 mL)					N/A
<i>E. coli</i> (cfu or MPN/100 mL)					N/A

TABLE 5 (Instructions, Page 59)

Completion of Table 5 is required for all external outfalls which discharge process wastewater from a facility which manufactures or formulates pesticides or herbicides or other wastewaters which may contain pesticides or herbicides.

If this facility does not/will not manufacture or formulate pesticides or herbicides and does not/will not discharge other wastewaters that may contain pesticides or herbicides, check N/A.

N/A

Table 5 for Outfall No.: [Click to enter text.](#)

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Aldrin					0.01
Carbaryl					5
Chlordane					0.2
Chlorpyrifos					0.05
4,4'-DDD					0.1
4,4'-DDE					0.1
4,4'-DDT					0.02
2,4-D					0.7
Danitol [Fenpropathrin]					—
Demeton					0.20
Diazinon					0.5/0.1
Dicofol [Kelthane]					1
Dieldrin					0.02
Diuron					0.090
Endosulfan I (<i>alpha</i>)					0.01

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Endosulfan II (<i>beta</i>)					0.02
Endosulfan sulfate					0.1
Endrin					0.02
Guthion [Azinphos methyl]					0.1
Heptachlor					0.01
Heptachlor epoxide					0.01
Hexachlorocyclohexane (<i>alpha</i>)					0.05
Hexachlorocyclohexane (<i>beta</i>)					0.05
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]					0.05
Hexachlorophene					10
Malathion					0.1
Methoxychlor					2.0
Mirex					0.02
Parathion (ethyl)					0.1
Toxaphene					0.3
2,4,5-TP [Silvex]					0.3

* Indicate units if different from µg/L.

TABLE 6 (Instructions, Page 59)

Completion of Table 6 is required for all external outfalls.

Table 6 for Outfall No.: **001**

Samples are (check one): Composite Grab

Pollutants	Believed Present	Believed Absent	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)	MAL (µg/L)*
Bromide	<input type="checkbox"/>	<input checked="" type="checkbox"/>					400
Color (PCU)	<input checked="" type="checkbox"/>	<input type="checkbox"/>					—
Nitrate-Nitrite (as N)	<input checked="" type="checkbox"/>	<input type="checkbox"/>					—
Sulfide (as S)	<input type="checkbox"/>	<input checked="" type="checkbox"/>					—
Sulfite (as SO3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>					—
Surfactants	<input type="checkbox"/>	<input checked="" type="checkbox"/>					—
Boron, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					20
Cobalt, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>					0.3
Iron, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>					7
Magnesium, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>					20
Manganese, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>					0.5
Molybdenum, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>					1
Tin, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					5
Titanium, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					30

TABLE 7 (Instructions, Page 60)

Check the box next to any of the industrial categories applicable to this facility. If no categories are applicable, check N/A. If GC/MS testing is required, check the box provided to confirm the testing results for the appropriate parameters are provided with the application.

N/A

Table 7 for Applicable Industrial Categories

Industrial Category	40 CFR Part	Volatiles Table 8	Acids Table 9	Bases/Neutrals Table 10	Pesticides Table 11
<input type="checkbox"/> Adhesives and Sealants		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Aluminum Forming	467	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Auto and Other Laundries		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Battery Manufacturing	461	<input type="checkbox"/> Yes	No	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Coal Mining	434	No	No	No	No
<input type="checkbox"/> Coil Coating	465	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Copper Forming	468	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Electric and Electronic Components	469	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Electroplating	413	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Explosives Manufacturing	457	No	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Foundries		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Gum and Wood Chemicals - Subparts A,B,C,E	454	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No	No
<input type="checkbox"/> Gum and Wood Chemicals - Subparts D,F	454	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Inorganic Chemicals Manufacturing	415	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Iron and Steel Manufacturing	420	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Leather Tanning and Finishing	425	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Mechanical Products Manufacturing		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Nonferrous Metals Manufacturing	421,471	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Oil and Gas Extraction - Subparts A, D, E, F, G, H	435	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Ore Mining - Subpart B	440	No	<input type="checkbox"/> Yes	No	No
<input checked="" type="checkbox"/> Organic Chemicals Manufacturing	414	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes
<input type="checkbox"/> Paint and Ink Formulation	446,447	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Pesticides	455	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Petroleum Refining	419	<input type="checkbox"/> Yes	No	No	No
<input type="checkbox"/> Pharmaceutical Preparations	439	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Photographic Equipment and Supplies	459	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input checked="" type="checkbox"/> Plastic and Synthetic Materials Manufacturing	414	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes
<input type="checkbox"/> Plastic Processing	463	<input type="checkbox"/> Yes	No	No	No
<input type="checkbox"/> Porcelain Enameling	466	No	No	No	No
<input type="checkbox"/> Printing and Publishing		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subpart C	430	<input type="checkbox"/> *	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts F, K	430	<input type="checkbox"/> *	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> *
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts A, B, D, G, H	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> *
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts I, J, L	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subpart E	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *
<input type="checkbox"/> Rubber Processing	428	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Soap and Detergent Manufacturing	417	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Steam Electric Power Plants	423	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No	No
<input type="checkbox"/> Textile Mills (Not Subpart C)	410	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Timber Products Processing	429	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes

* Test if believed present.

TABLES 8, 9, 10, and 11 (Instructions, Page 60)

Completion of Tables 8, 9, 10, and 11 **is required** as specified in Table 7 for all **external outfalls** that contain process wastewater.

Completion of Tables 8, 9, 10, and 11 **may be required** for types of industry not specified in Table 7 for specific parameters that are believed to be present in the wastewater.

Table 8 for Outfall No.: 001

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Acrolein					50
Acrylonitrile					50
Benzene					10
Bromoform					10
Carbon tetrachloride					2
Chlorobenzene					10
Chlorodibromomethane					10
Chloroethane					50
2-Chloroethylvinyl ether					10
Chloroform					10
Dichlorobromomethane [Bromodichloromethane]					10
1,1-Dichloroethane					10
1,2-Dichloroethane					10
1,1-Dichloroethylene [1,1-Dichloroethene]					10
1,2-Dichloropropane					10
1,3-Dichloropropylene [1,3-Dichloropropene]					10
Ethylbenzene					10
Methyl bromide [Bromomethane]					50
Methyl chloride [Chloromethane]					50
Methylene chloride [Dichloromethane]					20
1,1,2,2-Tetrachloroethane					10
Tetrachloroethylene [Tetrachloroethene]					10
Toluene					10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]					10
1,1,1-Trichloroethane					10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
1,1,2-Trichloroethane					10
Trichloroethylene [Trichloroethene]					10
Vinyl chloride					10

* Indicate units if different from µg/L.

Table 9 for Outfall No.: **001**

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
2-Chlorophenol	<0.5				10
2,4-Dichlorophenol	<0.69				10
2,4-Dimethylphenol	<0.66				10
4,6-Dinitro-o-cresol	<1.41				50
2,4-Dinitrophenol	<0.88				50
2-Nitrophenol	<1.13				20
4-Nitrophenol	<0.53				50
p-Chloro-m-cresol	<0.44				10
Pentachlorophenol	<0.79				5
Phenol	<0.5				10
2,4,6-Trichlorophenol	<0.69				10

* Indicate units if different from µg/L.

Table 10 for Outfall No.: **001**

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Acenaphthene	<0.28				10
Acenaphthylene	<0.47				10
Anthracene	<0.57				10
Benzidine	<0.63				50
Benzo(a)anthracene	<0.57				5
Benzo(a)pyrene	<0.35				5
3,4-Benzofluoranthene [Benzo(b)fluoranthene]	<0.85				10
Benzo(ghi)perylene	<0.41				20
Benzo(k)fluoranthene	<0.69				5
Bis(2-chloroethoxy)methane	<0.28				10
Bis(2-chloroethyl)ether	<0.66				10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Bis(2-chloroisopropyl)ether	<0.69				10
Bis(2-ethylhexyl)phthalate	<0.63				10
4-Bromophenyl phenyl ether	<0.72				10
Butylbenzyl phthalate	<0.97				10
2-Chloronaphthalene	<1.22				10
4-Chlorophenyl phenyl ether	<2.76				10
Chrysene	<0.22				5
Dibenzo(a,h)anthracene	<0.44				5
1,2-Dichlorobenzene [o-Dichlorobenzene]	<0.47				10
1,3-Dichlorobenzene [m-Dichlorobenzene]	<0.22				10
1,4-Dichlorobenzene [p-Dichlorobenzene]	<0.28				10
3,3'-Dichlorobenzidine	<0.31				5
Diethyl phthalate	<0.79				10
Dimethyl phthalate	<0.72				10
Di-n-butyl phthalate	<0.47				10
2,4-Dinitrotoluene	<0.57				10
2,6-Dinitrotoluene	<0.53				10
Di-n-octyl phthalate	<0.28				10
1,2-Diphenylhydrazine (as Azobenzene)	<0.47				20
Fluoranthene	<0.57				10
Fluorene	<0.63				10
Hexachlorobenzene	<0.57				5
Hexachlorobutadiene	<0.35				10
Hexachlorocyclopentadiene	<0.85				10
Hexachloroethane	<0.41				20
Indeno(1,2,3-cd)pyrene	<0.69				5
Isophorone	<0.28				10
Naphthalene	<0.66				10
Nitrobenzene	<0.69				10
N-Nitrosodimethylamine	<0.63				50
N-Nitrosodi-n-propylamine	<0.72				20

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
N-Nitrosodiphenylamine	<0.97				20
Phenanthrene	<1.22				10
Pyrene	<2.76				10
1,2,4-Trichlorobenzene	<0.22				10

* Indicate units if different from µg/L.

Table 11 for Outfall No.: **001**

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Aldrin					0.01
alpha-BHC [alpha-Hexachlorocyclohexane]					0.05
beta-BHC [beta-Hexachlorocyclohexane]					0.05
gamma-BHC [gamma-Hexachlorocyclohexane]					0.05
delta-BHC [delta-Hexachlorocyclohexane]					0.05
Chlordane					0.2
4,4'-DDT					0.02
4,4'-DDE					0.1
4,4'-DDD					0.1
Dieldrin					0.02
Endosulfan I (alpha)					0.01
Endosulfan II (beta)					0.02
Endosulfan sulfate					0.1
Endrin					0.02
Endrin aldehyde					0.1
Heptachlor					0.01
Heptachlor epoxide					0.01
PCB 1242					0.2
PCB 1254					0.2
PCB 1221					0.2
PCB 1232					0.2
PCB 1248					0.2
PCB 1260					0.2
PCB 1016					0.2

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Toxaphene					0.3

* Indicate units if different from µg/L.

Attachment: [Click to enter text.](#)

TABLE 12 (DIOXINS/FURAN COMPOUNDS)

Complete of Table 12 **is required** for **external outfalls**, as directed below. (Instructions, Pages 59-60)

Indicate which compound(s) are manufactured or used at the facility and provide a brief description of the conditions of its/their presence at the facility (check all that apply).

- 2,4,5-trichlorophenoxy acetic acid (2,4,5-T) CASRN 93-76-5
- 2-(2,4,5-trichlorophenoxy) propanoic acid (Silvex, 2,4,5-TP) CASRN 93-72-1
- 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon) CASRN 136-25-4
- 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate (Ronnel) CASRN 299-84-3
- 2,4,5-trichlorophenol (TCP) CASRN 95-95-4
- hexachlorophene (HCP) CASRN 70-30-4
- None of the above

Description: [Click to enter text.](#)

Does the applicant or anyone at the facility know or have any reason to believe that 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) or any congeners of TCDD may be present in the effluent proposed for discharge?

- Yes No

Description: [Click to enter text.](#)

If **yes** to either Items a **or** b, complete Table 12 as instructed.

Table 12 for Outfall No.: [Click to enter text.](#) Samples are (check one): Composite Grab

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,7,8-TCDD	1					10
1,2,3,7,8-PeCDD	1.0					50
2,3,7,8-HxCDDs	0.1					50
1,2,3,4,6,7,8-HpCDD	0.01					50
2,3,7,8-TCDF	0.1					10
1,2,3,7,8-PeCDF	0.03					50

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,4,7,8-PeCDF	0.3					50
2,3,7,8-HxCDFs	0.1					50
2,3,4,7,8-HpCDFs	0.01					50
OCDD	0.0003					100
OCDF	0.0003					100
PCB 77	0.0001					500
PCB 81	0.0003					500
PCB 126	0.1					500
PCB 169	0.03					500
Total						

TABLE 13 (HAZARDOUS SUBSTANCES)

Complete Table 13 is required for all external outfalls as directed below. (Instructions, Pages 60-61)

Are there any pollutants listed in the instructions (pages 55-62) believed present in the discharge?

Yes No

Are there pollutants listed in Item 1.c. of Technical Report 1.0 which are believed present in the discharge and have not been analytically quantified elsewhere in this application?

Yes No

If yes to either Items a or b, complete Table 13 as instructed.

Table 13 for Outfall No.: **001**

Samples are (check one): Composite Grab

Pollutant	CASRN	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	Analytical Method
Heptane	142-82-5					
4-Methyl 2-Pentanone	108-10-1					
Methanol	67-56-1					
Calcium	7440-70-2					
Potassium	7440-09-7					
Sodium	7440-23-5					
Lithium	7439-93-2					
Zirconium	7440-67-7					
Dissolved Silicon	7440-21-3					

Pollutant	CASRN	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	Analytical Method
Vanadium	7440-62-2					
Palladium	7440-05-3					
Acetone	67-64-1					
Xylenes	1330-20-7					
Ethylene glycol monoethyl ether	110-80-5					
i-butanol	78-83-1					
Isopropyl benzene (Cumene)	98-82-8					
Styrene	100-42-5					
1,3 Butadiene	106-99-0					
Benzyl alcohol	100-51-6	<0.66				EPA 625.1
Propionaldehyde	123-38-6					
1,4 Naphthoquinone	130-15-4	<5				EPA 625.1
Hexane	110-54-3					

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 2.0: POLLUTANT ANALYSIS

Worksheet 2.0 is **required** for all applications submitted for a TPDES permit. Worksheet 2.0 is not required for applications for a permit to dispose of all wastewater by land disposal or for discharges solely of stormwater associated with industrial activities.

Item 1. General Testing Requirements (Instructions, Page 55)

- a. Provide the date range of all sampling events conducted to obtain the analytical data submitted with this application (e.g., 05/01/2018-05/30/2018): 09/23/25 - Ongoing
- b. Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.
- c. Read the general testing requirements in the instructions for important information about sampling, test methods, and MALs. If a contact laboratory was used, attach a list which includes the name, contact information, and pollutants analyzed for each laboratory/firm.
Attachment: See Attachment T-8

Item 2. Specific Testing Requirements (Instructions, Page 56)

Attach correspondence from TCEQ approving submittal of less than the required number of samples, if applicable. **Attachment:** [Click to enter text.](#) **Analysis incomplete, re-sampling will continue and updates will be submitted**

TABLE 1 and TABLE 2 (Instructions, Page 58)

Completion of Tables 1 and 2 is required for all external outfalls for all TPDES permit applications.

Table 1 for Outfall No.: 002

Samples are (check one): Composite Grab

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
BOD (5-day)	22.4	4.6	4.6	8.63
CBOD (5-day)	13.2	5.25	5.25	7.89
Chemical oxygen demand	111	134	134	98.3
Total organic carbon	42.8	50	50	33.6
Dissolved oxygen	7.92	6.74	4.25	6.11
Ammonia nitrogen	<0.020	<0.020	<0.020	0.169
Total suspended solids	8.7	13.1	13.1	13.3
Nitrate nitrogen	7.91	<0.1	<0.1	0.402
Total organic nitrogen	3.61	1.42	1.42	2.331
Total phosphorus	1.18	1.07	1.07	0.828
Oil and grease	<1.65	<1.51	<1.51	<1.53
Total residual chlorine	0.11	0.26	0.04	0.9
Total dissolved solids	2300	2390	2390	1780

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
Sulfate	918	897	897	812
Chloride	291	264	264	127
Fluoride	<0.503	<0.503	<0.503	<0.503
Total alkalinity (mg/L as CaCO3)	438	416	416	286
Temperature (°F)	91.9	89.4	86.4	86.8
pH (standard units)	7.88	7.56	7.42	7.44

Table 2 for Outfall No.: **002**

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	MAL (µg/L)
Aluminum, total	668	450	290	185	2.5
Antimony, total	<0.847	<3	<3	<3	5
Arsenic, total	5.63	3.21	3.74	4	0.5
Barium, total	42.5	46.2	39.6	45	3
Beryllium, total	<0.162	<0.162	<0.139	<0.162	0.5
Cadmium, total	<1	<1	<1	<1	1
Chromium, total	1.73	1.51	1.67	1.44	3
Chromium, hexavalent	<3.00	<3.00	<3	<3.00	3
Chromium, trivalent	<3	<3	<3	<3	N/A
Copper, total	6.8	6.66	0.00393	3.99	2
Cyanide, available	<2.38	<5	<5	<5	2/10
Lead, total	0.659	<0.5	<0.5	<0.5	0.5
Mercury, total	<0.00213		<0.00213	<0.00213	0.005/0.0005
Nickel, total	6.77	6.16	4.37	7.06	2
Selenium, total	10.6	<5	<5	6.01	5
Silver, total	0.595	<0.276	<0.226	<0.276	0.5
Thallium, total	<1	<1	<0.966	<0.966	0.5
Zinc, total	23.9	28.1	15.7	57.2	5.0

TABLE 3 (Instructions, Page 58)

Completion of Table 3 is required for all **external outfalls** which discharge process wastewater.

Partial completion of Table 3 is required for all **external outfalls** which discharge non-process wastewater and stormwater associated with industrial activities commingled with other wastestreams (see instructions for additional guidance).

Table 3 for Outfall No.: **002**

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Acrylonitrile	<1.00		<20.0	<1.00	50
Anthracene	<1.75	<1.75	<1.75	<0.35	10
Benzene	<1.00		<1.00	<1.00	10
Benzidine	<3.3	<3.3	<3.3	<0.66	50
Benzo(a)anthracene	<1.9	<1.9	<1.9	<0.38	5
Benzo(a)pyrene	<4.25	<4.25	<4.25	<0.85	5
Bis(2-chloroethyl)ether	<3.6	<3.6	<3.6	<0.72	10
Bis(2-ethylhexyl)phthalate	<11	<11	<11	5.125	10
Bromodichloromethane [Dichlorobromomethane]	<1.00		<1.00	<1.00	10
Bromoform	<1.00		<1.00	<1.00	10
Carbon tetrachloride	<1.00		<1.00	<1.00	2
Chlorobenzene	<1.00		<1.00	<1.00	10
Chlorodibromomethane [Dibromochloromethane]	<1.00		<1.00	<1.00	10
Chloroform	<1.00		<1.00	1.24	10
Chrysene	<2.85	<2.85	<2.85	<0.57	5
m-Cresol [3-Methylphenol]	<20	<20	<20	<0.4	10
o-Cresol [2-Methylphenol]	<5	<5	<5	<1	10
p-Cresol [4-Methylphenol]	<20	<20	<20	<0.4	10
1,2-Dibromoethane	<1.00		<1.00	<1.00	10
m-Dichlorobenzene [1,3-Dichlorobenzene]	<1.00		<1.00	<1.00	10
o-Dichlorobenzene [1,2-Dichlorobenzene]	<1.00		<1.00	<1.00	10
p-Dichlorobenzene [1,4-Dichlorobenzene]	<1.00		<1.00	<1.00	10
3,3'-Dichlorobenzidine	<4.4	<4.4	<4.4	<0.88	5
1,2-Dichloroethane	<1.00		<1.00	<1.00	10
1,1-Dichloroethene	<1.00		<1.00	<1.00	10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
[1,1-Dichloroethylene]					
Dichloromethane [Methylene chloride]	<1.00		<1.00	<1.00	20
1,2-Dichloropropane	<1.00		<1.00	<1.00	10
1,3-Dichloropropene [1,3-Dichloropropylene]	<1.00		<1.00	<1.00	10
2,4-Dimethylphenol	<2.65	<2.65	<2.65	<0.53	10
Di-n-Butyl phthalate	<6.1	<6.1	<6.1	<1.22	10
Epichlorohydrin (1-Chloro-2,3-epoxypropane)	<20.0		<20.0	<20.0	---
Ethylbenzene	<1.00		<1.00	<1.00	10
Ethylene Glycol	<50000		<50000	<50000	---
Fluoride	0	<0.503	<0.503	<0.503	500
Hexachlorobenzene	<3.45	<3.45	<3.45	<0.69	5
Hexachlorobutadiene	<2.05	<2.05	<2.05	<0.41	10
Hexachlorocyclopentadiene	<1.75	<1.75	<1.75	<0.35	10
Hexachloroethane	<2.35	<2.35	<2.35	<0.47	20
4,4'-Isopropylidenediphenol (bisphenol A)					1
Methyl ethyl ketone	<50.0		<1.00	<1.00	50
Methyl tert-butyl ether (MTBE)			<1.00	<1.00	---
Nitrobenzene	<4.55	<4.55	<4.55	<0.91	10
N-Nitrosodiethylamine	<25	<25	<25	<5	20
N-Nitroso-di-n-butylamine	<25	<25	<25	<5	20
Nonylphenol	<34.5		<40.7	<34.2	333
Pentachlorobenzene	<15	<15	<15	<3	20
Pentachlorophenol	<2.5	<2.5	<2.5	<0.5	5
Phenanthrene	<2.2	<2.2	<2.2	<0.44	10
Polychlorinated biphenyls (PCBs) (**)	<0.2	<0.192	<0.2	<0.2	0.2
Pyridine	<1.75	<1.75	<1.75	<0.35	20
1,2,4,5-Tetrachlorobenzene	<25	<25	<25	<5	20
1,1,2,2-Tetrachloroethane	<1.00		<1.00	<1.00	10
Tetrachloroethene [Tetrachloroethylene]	<1.00		<1.00	<1.00	10
Toluene	<1.00		<1.00	<1.00	10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
1,1,1-Trichloroethane	<1.00		<1.00	<1.00	10
1,1,2-Trichloroethane	<1.00		<1.00	<1.00	10
Trichloroethene [Trichloroethylene]	<1.00		<1.00	<1.00	10
2,4,5-Trichlorophenol					50
TTHM (Total trihalomethanes)	<1		<1	1.24	10
Vinyl chloride	<1.00		<1	<1.00	10

(*) Indicate units if different from µg/L.

(**) Total of detects for PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, and PCB-1016. If all non-detects, enter the highest non-detect preceded by a "<".

TABLE 4 (Instructions, Pages 58-59)

Partial completion of Table 4 **is required** for each **external outfall** based on the conditions below.

a. Tributyltin

Is this facility an industrial/commercial facility which currently or proposes to directly dispose of wastewater from the types of operations listed below or a domestic facility which currently or proposes to receive wastewater from the types of industrial/commercial operations listed below?

Yes No

If **yes**, check the box next to each of the following criteria which apply and provide the appropriate testing results in Table 4 below (check all that apply).

- Manufacturers and formulators of tributyltin or related compounds.
- Painting of ships, boats and marine structures.
- Ship and boat building and repairing.
- Ship and boat cleaning, salvage, wrecking and scaling.
- Operation and maintenance of marine cargo handling facilities and marinas.
- Facilities engaged in wood preserving.
- Any other industrial/commercial facility for which tributyltin is known to be present, or for which there is any reason to believe that tributyltin may be present in the effluent.

b. Enterococci (discharge to saltwater)

This facility discharges/proposes to discharge directly into saltwater receiving waters **and** Enterococci bacteria are expected to be present in the discharge based on facility processes.

Yes No

Domestic wastewater is/will be discharged.

Yes No

If **yes to either** question, provide the appropriate testing results in Table 4 below.

c. E. coli (discharge to freshwater)

This facility discharges/proposes to discharge directly into freshwater receiving waters **and** *E. coli* bacteria are expected to be present in the discharge based on facility processes.

Yes No

Domestic wastewater is/will be discharged.

Yes No

If **yes to either** question, provide the appropriate testing results in Table 4 below.

Table 4 for Outfall No.: **002**

Samples are (check one): Composite Grab

Pollutant	Sample 1	Sample 2	Sample 3	Sample 4	MAL
Tributyltin (µg/L)					0.010
Enterococci (cfu or MPN/100 mL)					N/A
<i>E. coli</i> (cfu or MPN/100 mL)	67.6		5.2	19.9	N/A

TABLE 5 (Instructions, Page 59)

Completion of Table 5 is required for all external outfalls which discharge process wastewater from a facility which manufactures or formulates pesticides or herbicides or other wastewaters which may contain pesticides or herbicides.

If this facility does not/will not manufacture or formulate pesticides or herbicides and does not/will not discharge other wastewaters that may contain pesticides or herbicides, check N/A.

N/A

Table 5 for Outfall No.: [Click to enter text.](#)

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Aldrin					0.01
Carbaryl					5
Chlordane					0.2
Chlorpyrifos					0.05
4,4'-DDD					0.1
4,4'-DDE					0.1
4,4'-DDT					0.02
2,4-D					0.7
Danitol [Fenpropathrin]					—
Demeton					0.20
Diazinon					0.5/0.1
Dicofol [Kelthane]					1
Dieldrin					0.02
Diuron					0.090
Endosulfan I (<i>alpha</i>)					0.01

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Endosulfan II (<i>beta</i>)					0.02
Endosulfan sulfate					0.1
Endrin					0.02
Guthion [Azinphos methyl]					0.1
Heptachlor					0.01
Heptachlor epoxide					0.01
Hexachlorocyclohexane (<i>alpha</i>)					0.05
Hexachlorocyclohexane (<i>beta</i>)					0.05
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]					0.05
Hexachlorophene					10
Malathion					0.1
Methoxychlor					2.0
Mirex					0.02
Parathion (ethyl)					0.1
Toxaphene					0.3
2,4,5-TP [Silvex]					0.3

* Indicate units if different from µg/L.

TABLE 6 (Instructions, Page 59)

Completion of Table 6 is required for all external outfalls.

Table 6 for Outfall No.: **002**

Samples are (check one): Composite Grab

Pollutants	Believed Present	Believed Absent	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)	MAL (µg/L)*
Bromide	<input type="checkbox"/>	<input checked="" type="checkbox"/>					400
Color (PCU)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	140				—
Nitrate-Nitrite (as N)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.44				—
Sulfide (as S)	<input type="checkbox"/>	<input checked="" type="checkbox"/>					—
Sulfite (as SO3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>					—
Surfactants	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<0.2				—
Boron, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					20
Cobalt, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1.85				0.3
Iron, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	42.5				7
Magnesium, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5570				20
Manganese, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	43				0.5
Molybdenum, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16.2				1
Tin, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					5
Titanium, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					30

TABLE 7 (Instructions, Page 60)

Check the box next to any of the industrial categories applicable to this facility. If no categories are applicable, check N/A. If GC/MS testing is required, check the box provided to confirm the testing results for the appropriate parameters are provided with the application.

N/A

Table 7 for Applicable Industrial Categories

Industrial Category	40 CFR Part	Volatiles Table 8	Acids Table 9	Bases/Neutrals Table 10	Pesticides Table 11
<input type="checkbox"/> Adhesives and Sealants		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Aluminum Forming	467	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Auto and Other Laundries		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Battery Manufacturing	461	<input type="checkbox"/> Yes	No	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Coal Mining	434	No	No	No	No
<input type="checkbox"/> Coil Coating	465	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Copper Forming	468	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Electric and Electronic Components	469	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Electroplating	413	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Explosives Manufacturing	457	No	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Foundries		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Gum and Wood Chemicals - Subparts A,B,C,E	454	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No	No
<input type="checkbox"/> Gum and Wood Chemicals - Subparts D,F	454	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Inorganic Chemicals Manufacturing	415	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Iron and Steel Manufacturing	420	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Leather Tanning and Finishing	425	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Mechanical Products Manufacturing		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Nonferrous Metals Manufacturing	421,471	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Oil and Gas Extraction - Subparts A, D, E, F, G, H	435	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Ore Mining - Subpart B	440	No	<input type="checkbox"/> Yes	No	No
<input checked="" type="checkbox"/> Organic Chemicals Manufacturing	414	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes
<input type="checkbox"/> Paint and Ink Formulation	446,447	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Pesticides	455	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Petroleum Refining	419	<input type="checkbox"/> Yes	No	No	No
<input type="checkbox"/> Pharmaceutical Preparations	439	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Photographic Equipment and Supplies	459	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input checked="" type="checkbox"/> Plastic and Synthetic Materials Manufacturing	414	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes
<input type="checkbox"/> Plastic Processing	463	<input type="checkbox"/> Yes	No	No	No
<input type="checkbox"/> Porcelain Enameling	466	No	No	No	No
<input type="checkbox"/> Printing and Publishing		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subpart C	430	<input type="checkbox"/> *	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts F, K	430	<input type="checkbox"/> *	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> *
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts A, B, D, G, H	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> *
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts I, J, L	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subpart E	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *
<input type="checkbox"/> Rubber Processing	428	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Soap and Detergent Manufacturing	417	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Steam Electric Power Plants	423	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No	No
<input type="checkbox"/> Textile Mills (Not Subpart C)	410	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Timber Products Processing	429	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes

* Test if believed present.

TABLES 8, 9, 10, and 11 (Instructions, Page 60)

Completion of Tables 8, 9, 10, and 11 **is required** as specified in Table 7 for all **external outfalls** that contain process wastewater.

Completion of Tables 8, 9, 10, and 11 **may be required** for types of industry not specified in Table 7 for specific parameters that are believed to be present in the wastewater.

Table 8 for Outfall No.: 002

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Acrolein					50
Acrylonitrile	<1.00	<1.00	<1.00	<1.00	50
Benzene	<1.00	<1.00	<1.00	<1.00	10
Bromoform	<1.00		<1.00	<1.00	10
Carbon tetrachloride	<1.00		<1.00	<1.00	2
Chlorobenzene	<1.00		<1.00	<1.00	10
Chlorodibromomethane	<1.00		<1.00	<1.00	10
Chloroethane	<1.00				50
2-Chloroethylvinyl ether	<1.00				10
Chloroform	<1.00		<1.00	1.24	10
Dichlorobromomethane [Bromodichloromethane]	<1.00		<1.00	<1.00	10
1,1-Dichloroethane	<1.00				10
1,2-Dichloroethane	<1.00		<1.00	<1.00	10
1,1-Dichloroethylene [1,1-Dichloroethene]	<1.00		<1.00	<1.00	10
1,2-Dichloropropane	<1.00		<1.00	<1.00	10
1,3-Dichloropropylene [1,3-Dichloropropene]	<1.00		<1.00	<1.00	10
Ethylbenzene	<1.00		<1.00	<1.00	10
Methyl bromide [Bromomethane]	<1.00				50
Methyl chloride [Chloromethane]	<1.00				50
Methylene chloride [Dichloromethane]	<1.00		<1.00	<1.00	20
1,1,2,2-Tetrachloroethane	<1.00		<1.00	<1.00	10
Tetrachloroethylene [Tetrachloroethene]	<1.00		<1.00	<1.00	10
Toluene	<1.00		<1.00	<1.00	10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]	<1.00				10
1,1,1-Trichloroethane	<1.00		<1.00	<1.00	10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
1,1,2-Trichloroethane	<1.00		<1.00	<1.00	10
Trichloroethylene [Trichloroethene]	<1.00		<1.00	<1.00	10
Vinyl chloride	<1.00		<0.001	<1.00	10

* Indicate units if different from µg/L.

Table 9 for Outfall No.: **002**

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
2-Chlorophenol	<2.5				10
2,4-Dichlorophenol	<3.45				10
2,4-Dimethylphenol	<2.65				10
4,6-Dinitro-o-cresol	<3.3				50
2,4-Dinitrophenol	<7.05				50
2-Nitrophenol	<4.4				20
4-Nitrophenol	<5.65				50
p-Chloro-m-cresol	<2.65				10
Pentachlorophenol	<2.5				5
Phenol	<2.2				10
2,4,6-Trichlorophenol	<3.95				10

* Indicate units if different from µg/L.

Table 10 for Outfall No.: **002**

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Acenaphthene	<1.4				10
Acenaphthylene	<2.35				10
Anthracene	<1.75	<1.75	<1.75	<0.35	10
Ben-zidine	<3.3	<3.3	<3.3	<0.66	50
Benzo(a)anthracene	<1.9	<1.9	<1.9	<0.38	5
Benzo(a)pyrene	<4.25	<4.25	<4.25	<0.85	5
3,4-Benzofluoranthene [Benzo(b)fluoranthene]	<2.85				10
Benzo(ghi)perylene	<3.15				20
Benzo(k)fluoranthene	<2.85				5
Bis(2-chloroethoxy)methane	<1.75				10
Bis(2-chloroethyl)ether	<3.6	<3.6	<3.6	<0.72	10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Bis(2-chloroisopropyl)ether	<4.25				10
Bis(2-ethylhexyl)phthalate	<11	<11	<11	5.125	10
4-Bromophenyl phenyl ether	<2.05				10
Butylbenzyl phthalate	<3.45				10
2-Chloronaphthalene	<1.4				10
4-Chlorophenyl phenyl ether	<3.3				10
Chrysene	<2.85	<2.85	<2.85	<0.57	5
Dibenzo(a,h)anthracene	<3.45				5
1,2-Dichlorobenzene [o-Dichlorobenzene]	<1.00	0	<1.00	<1.00	10
1,3-Dichlorobenzene [m-Dichlorobenzene]	<1.00	0	<1.00	<1.00	10
1,4-Dichlorobenzene [p-Dichlorobenzene]	<1.00	0	<1.00	<1.00	10
3,3'-Dichlorobenzidine	<4.4	<4.4	<4.4	<0.88	5
Diethyl phthalate	<3.15				10
Dimethyl phthalate	<3.6				10
Di-n-butyl phthalate	<6.1	<6.1	<6.1	<1.22	10
2,4-Dinitrotoluene	<4.85				10
2,6-Dinitrotoluene	<6.1				10
Di-n-octyl phthalate	<13.8				10
1,2-Diphenylhydrazine (as Azobenzene)	<1.1				20
Fluoranthene	<2.2				10
Fluorene	<2.35				10
Hexachlorobenzene	<3.45	<3.45	<3.45	<0.69	5
Hexachlorobutadiene	<2.05	<2.05	<2.05	<0.41	10
Hexachlorocyclopentadiene	<1.75	<1.75	<1.75	<0.35	10
Hexachloroethane	<2.35	<2.35	<2.35	<0.47	20
Indeno(1,2,3-cd)pyrene	<1.1				5
Isophorone	<1.4				10
Naphthalene	<1.55				10
Nitrobenzene	<4.55	<4.55	<4.55	<0.91	10
N-Nitrosodimethylamine	<3.95				50
N-Nitrosodi-n-propylamine	<3.6				20

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
N-Nitrosodiphenylamine	<2.35				20
Phenanthrene	<2.2	<2.2	<2.2	<0.44	10
Pyrene	<2.85				10
1,2,4-Trichlorobenzene	<2.65				10

* Indicate units if different from µg/L.

Table 11 for Outfall No.: 002

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Aldrin					0.01
alpha-BHC [alpha-Hexachlorocyclohexane]					0.05
beta-BHC [beta-Hexachlorocyclohexane]					0.05
gamma-BHC [gamma-Hexachlorocyclohexane]					0.05
delta-BHC [delta-Hexachlorocyclohexane]					0.05
Chlordane					0.2
4,4'-DDT					0.02
4,4'-DDE					0.1
4,4'-DDD					0.1
Dieldrin					0.02
Endosulfan I (alpha)					0.01
Endosulfan II (beta)					0.02
Endosulfan sulfate					0.1
Endrin					0.02
Endrin aldehyde					0.1
Heptachlor					0.01
Heptachlor epoxide					0.01
PCB 1242	<0.2	<0.192	<0.2	<0.2	0.2
PCB 1254	<0.2	<0.192	<0.2	<0.2	0.2
PCB 1221	<0.2	<0.192	<0.2	<0.2	0.2
PCB 1232	<0.2	<0.192	<0.2	<0.2	0.2
PCB 1248	<0.2	<0.192	<0.2	<0.2	0.2
PCB 1260	<0.2	<0.192	<0.2	<0.2	0.2
PCB 1016	<0.2	<0.192	<0.2	<0.2	0.2

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Toxaphene					0.3

* Indicate units if different from µg/L.

Attachment: [Click to enter text.](#)

TABLE 12 (DIOXINS/FURAN COMPOUNDS)

Complete of Table 12 **is required** for **external outfalls**, as directed below. (Instructions, Pages 59-60)

Indicate which compound(s) are manufactured or used at the facility and provide a brief description of the conditions of its/their presence at the facility (check all that apply).

- 2,4,5-trichlorophenoxy acetic acid (2,4,5-T) CASRN 93-76-5
- 2-(2,4,5-trichlorophenoxy) propanoic acid (Silvex, 2,4,5-TP) CASRN 93-72-1
- 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon) CASRN 136-25-4
- 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate (Ronnel) CASRN 299-84-3
- 2,4,5-trichlorophenol (TCP) CASRN 95-95-4
- hexachlorophene (HCP) CASRN 70-30-4
- None of the above

Description: [Click to enter text.](#)

Does the applicant or anyone at the facility know or have any reason to believe that 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) or any congeners of TCDD may be present in the effluent proposed for discharge?

- Yes No

Description: Combustion of wastes at the Rotary Kin Incinerator, Fluid Bed Incinerator, and Hydrochloric Acid Recovery Unit.

If **yes** to either Items a **or** b, complete Table 12 as instructed.

Table 12 for Outfall No.: **002**

Samples are (check one): Composite Grab

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,7,8-TCDD	1	<5.63	<5.63			10
1,2,3,7,8-PeCDD	1.0	1.77	1.77			50
2,3,7,8-HxCDDs	0.1	3.61	0.361			50
1,2,3,4,6,7,8-HpCDD	0.01	1.92	0.0192			50
2,3,7,8-TCDF	0.1	<5.63	<0.563			10
1,2,3,7,8-PeCDF	0.03	<28.2	<0.846			50

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,4,7,8-PeCDF	0.3	<28.2	<8.46			50
2,3,7,8-HxCDFs	0.1	4.554	0.4554			50
2,3,4,7,8-HpCDFs	0.01	2.395	0.02395			50
OCDD	0.0003	0.90	0.00027			100
OCDF	0.0003	1.01	0.000303			100
PCB 77	0.0001	<8.8	<0.0088			500
PCB 81	0.0003	<0.59	<0.000177			500
PCB 126	0.1	2.97	0.297			500
PCB 169	0.03	<1.5	<0.045			500
Total		19.13	2.94			

TABLE 13 (HAZARDOUS SUBSTANCES)

Complete Table 13 is required for all external outfalls as directed below. (Instructions, Pages 60-61)

Are there any pollutants listed in the instructions (pages 55-62) believed present in the discharge?

Yes No

Are there pollutants listed in Item 1.c. of Technical Report 1.0 which are believed present in the discharge and have not been analytically quantified elsewhere in this application?

Yes No

If yes to either Items a or b, complete Table 13 as instructed.

Table 13 for Outfall No.: **002**

Samples are (check one): Composite Grab

Pollutant	CASRN	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	Analytical Method
Acetaldehyde	75-07-0	27.6				EPA 1667
Abestos	1332-21-4					
Calcium	7440-70-2	28700				EPA 200.7 4.4
Cesium	7440-46-2	<2.5				6020B
Ethyl acetate	141-78-6	<1.00				624.1
Ethyl Ether	60-29-7	<1.00				624.1
4-Methyl 2-Pentanone	108-10-1	<50				EPA 624.1
Acetone	67-64-1	<5.02				

Pollutant	CASRN	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	Analytical Method
Acetonitrile	75-05-8	<50				EPA 624.1
1,3 Butadiene	106-99-0	<1				EPA 624.1
Benzyl alcohol	100-51-6	<3.3				EPA 625.1
n-butanol	71-36-3	<5000				EPA 8015C
isobutanol	78-83-1	<5000				EPA 8015C
butyl acetate	540-88-5					
Carbon disulfide	75-15-0	<1.00				1624
Lithium	7439-93-2	17.7				EPA 200.7 4.4
Methanol	67-56-1	<5000				EPA 8015C
o-phosphate	7727-37-9	3630				EPA 300.0 2.1
Potassium	7440-09-7	14300				EPA 200.7 4.4
Dissolved Silicon	7440-21-3	5080				EPA 200.7, Rev. 4.4
Sodium	7440-23-5	806000				EPA 200.7 4.4
Styrene	100-42-5	<1.0				1625
Vanadium	7440-62-2	13.6				EPA 200.8 5.4
Palladium	7440-05-3	<100				EPA 200.7, Rev. 4.4
Zirconium	7440-67-7	<10				EPA 200.7, Rev. 4.4
Tert-butanol	75-65-0	<5000				EPA 8015C
Hexane	110-54-3	<1.0				EPA 624.1
Heptane	142-82-5	<10.0				EPA 1666
Isopropyl alcohol	67-63-0	<5000				EPA 8015C
Xylenes	1330-20-7	<1				624
Iodine	7553-56-2	<500				9056
Ethylene glycol monoethyl ether	110-80-5	<10000				EPA 8015C
1,4 Naphthoquinone	130-15-4	<25				EPA 625.1

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 2.0: POLLUTANT ANALYSIS

Worksheet 2.0 is **required** for all applications submitted for a TPDES permit. Worksheet 2.0 is not required for applications for a permit to dispose of all wastewater by land disposal or for discharges solely of stormwater associated with industrial activities.

Item 1. General Testing Requirements (Instructions, Page 55)

- a. Provide the date range of all sampling events conducted to obtain the analytical data submitted with this application (e.g., 05/01/2018-05/30/2018): 9/23/25-ongoing
- b. Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.
- c. Read the general testing requirements in the instructions for important information about sampling, test methods, and MALs. If a contact laboratory was used, attach a list which includes the name, contact information, and pollutants analyzed for each laboratory/firm.
Attachment: See Attachment t-8

Item 2. Specific Testing Requirements (Instructions, Page 56)

Attach correspondence from TCEQ approving submittal of less than the required number of samples, if applicable. **Attachment:** [Click to enter text.](#)

TABLE 1 and TABLE 2 (Instructions, Page 58)

Completion of Tables 1 and 2 is required for all external outfalls for all TPDES permit applications.

Table 1 for Outfall No.: **004**

Samples are (check one): Composite Grab

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
BOD (5-day)	3.48	3.55	2.71	2.63
CBOD (5-day)	3.52	<2.00	<2.00	2.13
Chemical oxygen demand	<20.0	<20.0	<20.0	<20.0
Total organic carbon	6.39	5.78	9.89	6.04
Dissolved oxygen	1.9	27.1	4.01	4.67
Ammonia nitrogen		<0.010	0.389	0.952
Total suspended solids	12.4	6.4	9.88	13.2
Nitrate nitrogen	<0.1	<0.1	<0.100	<0.1
Total organic nitrogen		0.97	1.681	0.688
Total phosphorus	0.0453	0.164	0.192	<0.040
Oil and grease	<1.67	<1.79	<1.51	<1.53
Total residual chlorine	0.37	0.1	0.16	0.16
Total dissolved solids	92	104	92	110

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
Sulfate	4.96	3.54	5.39	5.41
Chloride	14.6	15.6	16.1	15.3
Fluoride	<0.503	<0.503	<0.500	<0.503
Total alkalinity (mg/L as CaCO ₃)	64.8	63.7	64.6	65.2
Temperature (°F)	80.2	75.9	81.4	74.9
pH (standard units)	6.98	6.81	7.02	4.67

Table 2 for Outfall No.: **004**

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	MAL (µg/L)
Aluminum, total	187	221	273	190	2.5
Antimony, total	<0.847	<3	<3	<3	5
Arsenic, total	<0.902	1.6	1.87	<0.902	0.5
Barium, total	47.5	47.8	46.9	51.9	3
Beryllium, total	<0.162	<1	<0.139	<0.162	0.5
Cadmium, total	<0.12	<1	<1	<1	1
Chromium, total	1.51	1.07	1.44	1.42	3
Chromium, hexavalent	<3.00	<3.00	<3.00	<3.00	3
Chromium, trivalent	<3	<3	<3	<3	N/A
Copper, total	2.32	3.03	1.73	6.75	2
Cyanide, available	<2.38	<0.5	<0.5	<0.5	2/10
Lead, total	<0.5	<0.5	0.733	<0.5	0.5
Mercury, total	<0.00213	<0.00213	<0.00213	<0.00213	0.005/0.0005
Nickel, total	0.733	1.27	1.09	1.14	2
Selenium, total	<2.94	<5	<5	<5	5
Silver, total	<2.26	<0.276	<0.226	<0.276	0.5
Thallium, total	<0.966	<1	<0.966	<0.966	0.5
Zinc, total	42.4	17.1	16.4	6	5.0

TABLE 3 (Instructions, Page 58) – Not Applicable

Completion of Table 3 is required for all **external outfalls** which discharge process wastewater.

Partial completion of Table 3 is required for all **external outfalls** which discharge non-process wastewater and stormwater associated with industrial activities commingled with other wastestreams (see instructions for additional guidance).

Table 3 for Outfall No.: [Click to enter text.](#) Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Acrylonitrile					50
Anthracene					10
Benzene					10
Benidine					50
Benzo(a)anthracene					5
Benzo(a)pyrene					5
Bis(2-chloroethyl)ether					10
Bis(2-ethylhexyl)phthalate					10
Bromodichloromethane [Dichlorobromomethane]					10
Bromoform					10
Carbon tetrachloride					2
Chlorobenzene					10
Chlorodibromomethane [Dibromochloromethane]					10
Chloroform					10
Chrysene					5
m-Cresol [3-Methylphenol]					10
o-Cresol [2-Methylphenol]					10
p-Cresol [4-Methylphenol]					10
1,2-Dibromoethane					10
m-Dichlorobenzene [1,3-Dichlorobenzene]					10
o-Dichlorobenzene [1,2-Dichlorobenzene]					10
p-Dichlorobenzene [1,4-Dichlorobenzene]					10
3,3'-Dichlorobenzidine					5
1,2-Dichloroethane					10
1,1-Dichloroethene [1,1-Dichloroethylene]					10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Dichloromethane [Methylene chloride]					20
1,2-Dichloropropane					10
1,3-Dichloropropene [1,3-Dichloropropylene]					10
2,4-Dimethylphenol					10
Di-n-Butyl phthalate					10
Epichlorohydrin (1-Chloro-2,3-epoxypropane)					---
Ethylbenzene					10
Ethylene Glycol					---
Fluoride					500
Hexachlorobenzene					5
Hexachlorobutadiene					10
Hexachlorocyclopentadiene					10
Hexachloroethane					20
4,4'-Isopropylidenediphenol (bisphenol A)					1
Methyl ethyl ketone					50
Methyl tert-butyl ether (MTBE)					---
Nitrobenzene					10
N-Nitrosodiethylamine					20
N-Nitroso-di-n-butylamine					20
Nonylphenol					333
Pentachlorobenzene					20
Pentachlorophenol					5
Phenanthrene					10
Polychlorinated biphenyls (PCBs) (**)					0.2
Pyridine					20
1,2,4,5-Tetrachlorobenzene					20
1,1,2,2-Tetrachloroethane					10
Tetrachloroethene [Tetrachloroethylene]					10
Toluene					10
1,1,1-Trichloroethane					10
1,1,2-Trichloroethane					10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Trichloroethene [Trichloroethylene]					10
2,4,5-Trichlorophenol					50
TTHM (Total trihalomethanes)					10
Vinyl chloride					10

(*) Indicate units if different from µg/L.

(**) Total of detects for PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, and PCB-1016. If all non-detects, enter the highest non-detect preceded by a “<”.

TABLE 4 (Instructions, Pages 58-59)

Partial completion of Table 4 **is required** for each **external outfall** based on the conditions below.

a. Tributyltin

Is this facility an industrial/commercial facility which currently or proposes to directly dispose of wastewater from the types of operations listed below or a domestic facility which currently or proposes to receive wastewater from the types of industrial/commercial operations listed below?

- Yes No

If **yes**, check the box next to each of the following criteria which apply and provide the appropriate testing results in Table 4 below (check all that apply).

- Manufacturers and formulators of tributyltin or related compounds.
- Painting of ships, boats and marine structures.
- Ship and boat building and repairing.
- Ship and boat cleaning, salvage, wrecking and scaling.
- Operation and maintenance of marine cargo handling facilities and marinas.
- Facilities engaged in wood preserving.
- Any other industrial/commercial facility for which tributyltin is known to be present, or for which there is any reason to believe that tributyltin may be present in the effluent.

b. Enterococci (discharge to saltwater)

This facility discharges/proposes to discharge directly into saltwater receiving waters **and** Enterococci bacteria are expected to be present in the discharge based on facility processes.

- Yes No

Domestic wastewater is/will be discharged.

- Yes No

If **yes to either** question, provide the appropriate testing results in Table 4 below.

c. E. coli (discharge to freshwater)

This facility discharges/proposes to discharge directly into freshwater receiving waters **and** *E. coli* bacteria are expected to be present in the discharge based on facility processes.

Yes No

Domestic wastewater is/will be discharged.

Yes No

If **yes to either** question, provide the appropriate testing results in Table 4 below.

Table 4 for Outfall No.: 004

Samples are (check one): Composite Grab

Pollutant	Sample 1	Sample 2	Sample 3	Sample 4	MAL
Tributyltin (µg/L)					0.010
Enterococci (cfu or MPN/100 mL)					N/A
<i>E. coli</i> (cfu or MPN/100 mL)	3	2	2	<1.0	N/A

TABLE 5 (Instructions, Page 59) - Not Applicable

Completion of Table 5 is required for all external outfalls which discharge process wastewater from a facility which manufactures or formulates pesticides or herbicides or other wastewaters which may contain pesticides or herbicides.

If this facility does not/will not manufacture or formulate pesticides or herbicides and does not/will not discharge other wastewaters that may contain pesticides or herbicides, check N/A.

N/A

Table 5 for Outfall No.: [Click to enter text.](#)

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Aldrin					0.01
Carbaryl					5
Chlordane					0.2
Chlorpyrifos					0.05
4,4'-DDD					0.1
4,4'-DDE					0.1
4,4'-DDT					0.02
2,4-D					0.7
Danitol [Fenpropathrin]					—
Demeton					0.20
Diazinon					0.5/0.1
Dicofol [Kelthane]					1
Dieldrin					0.02
Diuron					0.090
Endosulfan I (<i>alpha</i>)					0.01

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Endosulfan II (<i>beta</i>)					0.02
Endosulfan sulfate					0.1
Endrin					0.02
Guthion [Azinphos methyl]					0.1
Heptachlor					0.01
Heptachlor epoxide					0.01
Hexachlorocyclohexane (<i>alpha</i>)					0.05
Hexachlorocyclohexane (<i>beta</i>)					0.05
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]					0.05
Hexachlorophene					10
Malathion					0.1
Methoxychlor					2.0
Mirex					0.02
Parathion (ethyl)					0.1
Toxaphene					0.3
2,4,5-TP [Silvex]					0.3

* Indicate units if different from µg/L.

TABLE 6 (Instructions, Page 59)

Completion of Table 6 is required for all external outfalls.

Table 6 for Outfall No.: **004**

Samples are (check one): Composite Grab

Pollutants	Believed Present	Believed Absent	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)	MAL (µg/L)*
Bromide	<input type="checkbox"/>	<input checked="" type="checkbox"/>					400
Color (PCU)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	40				—
Nitrate-Nitrite (as N)	<input type="checkbox"/>	<input checked="" type="checkbox"/>					—
Sulfide (as S)	<input type="checkbox"/>	<input checked="" type="checkbox"/>					—
Sulfite (as SO3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>					—
Surfactants	<input type="checkbox"/>	<input checked="" type="checkbox"/>					—
Boron, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					20
Cobalt, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.483				0.3
Iron, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	737				7
Magnesium, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2740				20
Manganese, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	116				0.5
Molybdenum, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.567				1
Tin, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.021				5
Titanium, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<0.0284				30

TABLE 7 (Instructions, Page 60)

Check the box next to any of the industrial categories applicable to this facility. If no categories are applicable, check N/A. If GC/MS testing is required, check the box provided to confirm the testing results for the appropriate parameters are provided with the application.

N/A

Table 7 for Applicable Industrial Categories

Industrial Category	40 CFR Part	Volatiles Table 8	Acids Table 9	Bases/Neutrals Table 10	Pesticides Table 11
<input type="checkbox"/> Adhesives and Sealants		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Aluminum Forming	467	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Auto and Other Laundries		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Battery Manufacturing	461	<input type="checkbox"/> Yes	No	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Coal Mining	434	No	No	No	No
<input type="checkbox"/> Coil Coating	465	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Copper Forming	468	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Electric and Electronic Components	469	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Electroplating	413	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Explosives Manufacturing	457	No	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Foundries		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Gum and Wood Chemicals - Subparts A,B,C,E	454	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No	No
<input type="checkbox"/> Gum and Wood Chemicals - Subparts D,F	454	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Inorganic Chemicals Manufacturing	415	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Iron and Steel Manufacturing	420	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Leather Tanning and Finishing	425	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Mechanical Products Manufacturing		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Nonferrous Metals Manufacturing	421,471	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Oil and Gas Extraction - Subparts A, D, E, F, G, H	435	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Ore Mining - Subpart B	440	No	<input type="checkbox"/> Yes	No	No
<input type="checkbox"/> Organic Chemicals Manufacturing	414	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Paint and Ink Formulation	446,447	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Pesticides	455	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Petroleum Refining	419	<input type="checkbox"/> Yes	No	No	No
<input type="checkbox"/> Pharmaceutical Preparations	439	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Photographic Equipment and Supplies	459	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Plastic and Synthetic Materials Manufacturing	414	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Plastic Processing	463	<input type="checkbox"/> Yes	No	No	No
<input type="checkbox"/> Porcelain Enameling	466	No	No	No	No
<input type="checkbox"/> Printing and Publishing		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subpart C	430	<input type="checkbox"/> *	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts F, K	430	<input type="checkbox"/> *	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> *
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts A, B, D, G, H	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> *
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts I, J, L	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subpart E	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *
<input type="checkbox"/> Rubber Processing	428	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Soap and Detergent Manufacturing	417	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Steam Electric Power Plants	423	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No	No
<input type="checkbox"/> Textile Mills (Not Subpart C)	410	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Timber Products Processing	429	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes

* Test if believed present.

TABLES 8, 9, 10, and 11 (Instructions, Page 60) - Not Applicable

Completion of Tables 8, 9, 10, and 11 **is required** as specified in Table 7 for all **external outfalls** that contain process wastewater.

Completion of Tables 8, 9, 10, and 11 **may be required** for types of industry not specified in Table 7 for specific parameters that are believed to be present in the wastewater.

Table 8 for Outfall No.: [Click to enter text.](#) Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Acrolein					50
Acrylonitrile					50
Benzene					10
Bromoform					10
Carbon tetrachloride					2
Chlorobenzene					10
Chlorodibromomethane					10
Chloroethane					50
2-Chloroethylvinyl ether					10
Chloroform					10
Dichlorobromomethane [Bromodichloromethane]					10
1,1-Dichloroethane					10
1,2-Dichloroethane					10
1,1-Dichloroethylene [1,1-Dichloroethene]					10
1,2-Dichloropropane					10
1,3-Dichloropropylene [1,3-Dichloropropene]					10
Ethylbenzene					10
Methyl bromide [Bromomethane]					50
Methyl chloride [Chloromethane]					50
Methylene chloride [Dichloromethane]					20
1,1,2,2-Tetrachloroethane					10
Tetrachloroethylene [Tetrachloroethene]					10
Toluene					10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]					10
1,1,1-Trichloroethane					10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
1,1,2-Trichloroethane					10
Trichloroethylene [Trichloroethene]					10
Vinyl chloride					10

* Indicate units if different from µg/L.

Table 9 for Outfall No.: [Click to enter text.](#) Samples are (check one): Composite Grab

- Not Applicable

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
2-Chlorophenol					10
2,4-Dichlorophenol					10
2,4-Dimethylphenol					10
4,6-Dinitro-o-cresol					50
2,4-Dinitrophenol					50
2-Nitrophenol					20
4-Nitrophenol					50
p-Chloro-m-cresol					10
Pentachlorophenol					5
Phenol					10
2,4,6-Trichlorophenol					10

* Indicate units if different from µg/L.

Table 10 for Outfall No.: [Click to enter text.](#) Samples are (check one): Composite Grab

- Not Applicable

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Acenaphthene					10
Acenaphthylene					10
Anthracene					10
Benzidine					50
Benzo(a)anthracene					5
Benzo(a)pyrene					5
3,4-Benzofluoranthene [Benzo(b)fluoranthene]					10
Benzo(ghi)perylene					20
Benzo(k)fluoranthene					5
Bis(2-chloroethoxy)methane					10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Bis(2-chloroethyl)ether					10
Bis(2-chloroisopropyl)ether					10
Bis(2-ethylhexyl)phthalate					10
4-Bromophenyl phenyl ether					10
Butylbenzyl phthalate					10
2-Chloronaphthalene					10
4-Chlorophenyl phenyl ether					10
Chrysene					5
Dibenzo(a,h)anthracene					5
1,2-Dichlorobenzene [o-Dichlorobenzene]					10
1,3-Dichlorobenzene [m-Dichlorobenzene]					10
1,4-Dichlorobenzene [p-Dichlorobenzene]					10
3,3'-Dichlorobenzidine					5
Diethyl phthalate					10
Dimethyl phthalate					10
Di-n-butyl phthalate					10
2,4-Dinitrotoluene					10
2,6-Dinitrotoluene					10
Di-n-octyl phthalate					10
1,2-Diphenylhydrazine (as Azobenzene)					20
Fluoranthene					10
Fluorene					10
Hexachlorobenzene					5
Hexachlorobutadiene					10
Hexachlorocyclopentadiene					10
Hexachloroethane					20
Indeno(1,2,3-cd)pyrene					5
Isophorone					10
Naphthalene					10
Nitrobenzene					10
N-Nitrosodimethylamine					50
N-Nitrosodi-n-propylamine					20

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
N-Nitrosodiphenylamine					20
Phenanthrene					10
Pyrene					10
1,2,4-Trichlorobenzene					10

* Indicate units if different from µg/L.

Table 11 for Outfall No.: [Click to enter text.](#) Samples are (check one): Composite Grab
- Not Applicable

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Aldrin					0.01
alpha-BHC [alpha-Hexachlorocyclohexane]					0.05
beta-BHC [beta-Hexachlorocyclohexane]					0.05
gamma-BHC [gamma-Hexachlorocyclohexane]					0.05
delta-BHC [delta-Hexachlorocyclohexane]					0.05
Chlordane					0.2
4,4'-DDT					0.02
4,4'-DDE					0.1
4,4'-DDD					0.1
Dieldrin					0.02
Endosulfan I (alpha)					0.01
Endosulfan II (beta)					0.02
Endosulfan sulfate					0.1
Endrin					0.02
Endrin aldehyde					0.1
Heptachlor					0.01
Heptachlor epoxide					0.01
PCB 1242					0.2
PCB 1254					0.2
PCB 1221					0.2
PCB 1232					0.2
PCB 1248					0.2
PCB 1260					0.2
PCB 1016					0.2

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Toxaphene					0.3

* Indicate units if different from µg/L.

Attachment: [Click to enter text.](#)

TABLE 12 (DIOXINS/FURAN COMPOUNDS)

Complete of Table 12 **is required** for **external outfalls**, as directed below. (Instructions, Pages 59-60)

Indicate which compound(s) are manufactured or used at the facility and provide a brief description of the conditions of its/their presence at the facility (check all that apply).

- 2,4,5-trichlorophenoxy acetic acid (2,4,5-T) CASRN 93-76-5
- 2-(2,4,5-trichlorophenoxy) propanoic acid (Silvex, 2,4,5-TP) CASRN 93-72-1
- 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon) CASRN 136-25-4
- 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate (Ronnel) CASRN 299-84-3
- 2,4,5-trichlorophenol (TCP) CASRN 95-95-4
- hexachlorophene (HCP) CASRN 70-30-4
- None of the above

Description: [Click to enter text.](#)

Does the applicant or anyone at the facility know or have any reason to believe that 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) or any congeners of TCDD may be present in the effluent proposed for discharge?

- Yes No

Description: [Click to enter text.](#)

If **yes** to either Items a **or** b, complete Table 12 as instructed.

Table 12 for Outfall No.: [Click to enter text.](#) Samples are (check one): Composite Grab

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,7,8-TCDD	1					10
1,2,3,7,8-PeCDD	1.0					50
2,3,7,8-HxCDDs	0.1					50
1,2,3,4,6,7,8-HpCDD	0.01					50
2,3,7,8-TCDF	0.1					10
1,2,3,7,8-PeCDF	0.03					50

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,4,7,8-PeCDF	0.3					50
2,3,7,8-HxCDFs	0.1					50
2,3,4,7,8-HpCDFs	0.01					50
OCDD	0.0003					100
OCDF	0.0003					100
PCB 77	0.0001					500
PCB 81	0.0003					500
PCB 126	0.1					500
PCB 169	0.03					500
Total						

TABLE 13 (HAZARDOUS SUBSTANCES)

Complete Table 13 is required for all external outfalls as directed below. (Instructions, Pages 60-61)

Are there any pollutants listed in the instructions (pages 55-62) believed present in the discharge?

Yes No

Are there pollutants listed in Item 1.c. of Technical Report 1.0 which are believed present in the discharge and have not been analytically quantified elsewhere in this application?

Yes No

If yes to either Items a or b, complete Table 13 as instructed.

Table 13 for Outfall No.: **004**

Samples are (check one): Composite Grab

Pollutant	CASRN	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	Analytical Method
Calcium	7440-70-2	10500				EPA 200.7 4.4
Lithium	7439-93-2	<1.61				EPA 200.7 4.4
Potassium	7440-09-7	4500				EPA 200.7 4.4
Sodium	7440-23-5	20900				EPA 200.7 4.4
Vanadium	7440-62-2	1.05				EPA 200.8 5.4

Pollutant	CASRN	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	Analytical Method
Palladium	7440-05-3	<100				EPA 200.7 4.4

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 2.0: POLLUTANT ANALYSIS

Worksheet 2.0 is **required** for all applications submitted for a TPDES permit. Worksheet 2.0 is not required for applications for a permit to dispose of all wastewater by land disposal or for discharges solely of stormwater associated with industrial activities.

Item 1. General Testing Requirements (Instructions, Page 55)

- a. Provide the date range of all sampling events conducted to obtain the analytical data submitted with this application (e.g., 05/01/2018-05/30/2018): 9/23/25 - ongoing
- b. Check the box to confirm all samples were collected no more than 12 months prior to the date of application submittal.
- c. Read the general testing requirements in the instructions for important information about sampling, test methods, and MALs. If a contact laboratory was used, attach a list which includes the name, contact information, and pollutants analyzed for each laboratory/firm.
Attachment: See Attachment t-8

Item 2. Specific Testing Requirements (Instructions, Page 56)

Attach correspondence from TCEQ approving submittal of less than the required number of samples, if applicable. **Attachment:** [Click to enter text.](#)

Outfall 005 stopped flowing before analysis could be completed. Additional results will be submitted when available.

TABLE 1 and TABLE 2 (Instructions, Page 58)

Completion of Tables 1 and 2 is required for all external outfalls for all TPDES permit applications.

Table 1 for Outfall No.: **005**

Samples are (check one): Composite Grab

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
BOD (5-day)	2.04	4.19		
CBOD (5-day)	<2.00	<2.00		
Chemical oxygen demand	<20.0	<20.0		
Total organic carbon	5.36	5.45		
Dissolved oxygen	6.13	6.82		
Ammonia nitrogen	<0.00336	0.0355		
Total suspended solids	<2.00	<2.00		
Nitrate nitrogen	<0.1	0.111		
Total organic nitrogen	1.03664	0.7795		
Total phosphorus	<0.0353	0.0462		
Oil and grease	<1.68	<1.65		
Total residual chlorine	0.7	0.26		
Total dissolved solids	134	144		

Pollutant	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)
Sulfate	17.6	14.3		
Chloride	31.2	33.1		
Fluoride	<0.503	<1.00		
Total alkalinity (mg/L as CaCO ₃)	44.3	44.2		
Temperature (°F)	86.1	78.1		
pH (standard units)	7.08	7.01		

Table 2 for Outfall No.: **005**

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	MAL (µg/L)
Aluminum, total	65.9	29			2.5
Antimony, total	<0.847	<3			5
Arsenic, total	<0.158	1.75			0.5
Barium, total	57.1	56			3
Beryllium, total	<0.162	<1			0.5
Cadmium, total	<0.12	<1			1
Chromium, total	1.19	1.18			3
Chromium, hexavalent	<3.00	<3.00			3
Chromium, trivalent	<1.00	<3			N/A
Copper, total	<1.00	1.67			2
Cyanide, available	<2.38	<5			2/10
Lead, total	<1.00	<0.5			0.5
Mercury, total	<2.13	<2.13			0.005/0.0005
Nickel, total	<1.00	1.85			2
Selenium, total	<2.94	<5			5
Silver, total	<2.26	<0.276			0.5
Thallium, total	<0.966	<1			0.5
Zinc, total	<8.75	5.37			5.0

TABLE 3 (Instructions, Page 58)

Completion of Table 3 is required for all **external outfalls** which discharge process wastewater.

Partial completion of Table 3 is required for all **external outfalls** which discharge non-process wastewater and stormwater associated with industrial activities commingled with other wastestreams (see instructions for additional guidance).

Table 3 for Outfall No.: **005**

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Acrylonitrile	<1.00	<1.00			50
Anthracene	<0.35	<0.35	<0.35		10
Benzene	<0.158	<1.00			10
Benzidine	<0.66	<0.66	<0.66		50
Benzo(a)anthracene	<0.38	<0.38	<0.38		5
Benzo(a)pyrene	<0.85	<0.85	<0.85		5
Bis(2-chloroethyl)ether	<0.72	<0.72	<0.72		10
Bis(2-ethylhexyl)phthalate	<2.2	<2.2	<2.2		10
Bromodichloromethane [Dichlorobromomethane]	<1.00	<1.00			10
Bromoform	<1.00	<1.00			10
Carbon tetrachloride	<1.00	<1.00			2
Chlorobenzene	<1.00	<1.00			10
Chlorodibromomethane [Dibromochloromethane]	<1.00	<1.00			10
Chloroform	<1.00	1.14			10
Chrysene	<0.57	<0.57	<0.57		5
m-Cresol [3-Methylphenol]					10
o-Cresol [2-Methylphenol]		<1	<1		10
p-Cresol [4-Methylphenol]					10
1,2-Dibromoethane	<1.00	<1.00			10
m-Dichlorobenzene [1,3-Dichlorobenzene]	<1.00	<1.00			10
o-Dichlorobenzene [1,2-Dichlorobenzene]	<1.00	<1.00			10
p-Dichlorobenzene [1,4-Dichlorobenzene]	<1.00	<1.00			10
3,3'-Dichlorobenzidine	<0.88	<0.88	<0.88		5
1,2-Dichloroethane	<1.00	<1.00			10
1,1-Dichloroethene	<1.00	<1.00			10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
[1,1-Dichloroethylene]					
Dichloromethane [Methylene chloride]	<1.00	<1.00			20
1,2-Dichloropropane	<1.00	<1.00			10
1,3-Dichloropropene [1,3-Dichloropropylene]	<1	<1			10
2,4-Dimethylphenol	<0.53	<0.53	<0.53	<0.53	10
Di-n-Butyl phthalate	<1.22	<1.22	<1.22		10
Epichlorohydrin (1-Chloro-2,3-epoxypropane)	<20.0	<20.0			---
Ethylbenzene	<1.00	<1.00			10
Ethylene Glycol	<50000	<50000		50.0	---
Fluoride	<0.503	<1.00	0	0	500
Hexachlorobenzene	<0.69	<0.69	<0.69		5
Hexachlorobutadiene	<0.41	<0.41	<0.41		10
Hexachlorocyclopentadiene	<0.35	<0.35	<0.35		10
Hexachloroethane	<0.47	<0.47	<0.47		20
4,4'-Isopropylidenediphenol (bisphenol A)					1
Methyl ethyl ketone	<50.0	<1.00			50
Methyl tert-butyl ether (MTBE)	<1.00	<1.00			---
Nitrobenzene	<0.91	<0.91	<0.91		10
N-Nitrosodiethylamine	<5	<5	<5		20
N-Nitroso-di-n-butylamine	<5	<5	<5		20
Nonylphenol	<34.2	<36.5	<37.2		333
Pentachlorobenzene	<3	<3	<3		20
Pentachlorophenol	<0.5	<0.5	<0.5	<0.5	5
Phenanthrene	<0.44	<0.44	<0.44		10
Polychlorinated biphenyls (PCBs) (**)	<0.197	<0.194			0.2
Pyridine	<0.35	<0.35	<0.35		20
1,2,4,5-Tetrachlorobenzene	<5	<5	<5		20
1,1,2,2-Tetrachloroethane	<1.00	<1.00			10
Tetrachloroethene [Tetrachloroethylene]	<1.00	<1.00			10
Toluene	<1.00	<1.00			10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
1,1,1-Trichloroethane	<1.00	<1.00			10
1,1,2-Trichloroethane	<1.00	<1.00			10
Trichloroethene [Trichloroethylene]	<4.00	<1.00			10
2,4,5-Trichlorophenol	<1.00				50
TTHM (Total trihalomethanes)	<0.158	1.14			10
Vinyl chloride	<1.00	<1.00			10

(*) Indicate units if different from µg/L.

(**) Total of detects for PCB-1242, PCB-1254, PCB-1221, PCB-1232, PCB-1248, PCB-1260, and PCB-1016. If all non-detects, enter the highest non-detect preceded by a "<".

TABLE 4 (Instructions, Pages 58-59)

Partial completion of Table 4 **is required** for each **external outfall** based on the conditions below.

a. Tributyltin

Is this facility an industrial/commercial facility which currently or proposes to directly dispose of wastewater from the types of operations listed below or a domestic facility which currently or proposes to receive wastewater from the types of industrial/commercial operations listed below?

Yes No

If **yes**, check the box next to each of the following criteria which apply and provide the appropriate testing results in Table 4 below (check all that apply).

- Manufacturers and formulators of tributyltin or related compounds.
- Painting of ships, boats and marine structures.
- Ship and boat building and repairing.
- Ship and boat cleaning, salvage, wrecking and scaling.
- Operation and maintenance of marine cargo handling facilities and marinas.
- Facilities engaged in wood preserving.
- Any other industrial/commercial facility for which tributyltin is known to be present, or for which there is any reason to believe that tributyltin may be present in the effluent.

b. Enterococci (discharge to saltwater)

This facility discharges/proposes to discharge directly into saltwater receiving waters **and** Enterococci bacteria are expected to be present in the discharge based on facility processes.

Yes No

Domestic wastewater is/will be discharged.

Yes No

If **yes to either** question, provide the appropriate testing results in Table 4 below.

c. E. coli (discharge to freshwater)

This facility discharges/proposes to discharge directly into freshwater receiving waters **and** *E. coli* bacteria are expected to be present in the discharge based on facility processes.

Yes No

Domestic wastewater is/will be discharged.

Yes No

If **yes to either** question, provide the appropriate testing results in Table 4 below.

Table 4 for Outfall No.: 005

Samples are (check one): Composite Grab

Pollutant	Sample 1	Sample 2	Sample 3	Sample 4	MAL
Tributyltin (µg/L)					0.010
Enterococci (cfu or MPN/100 mL)					N/A
<i>E. coli</i> (cfu or MPN/100 mL)	63.8	20.6	16		N/A

TABLE 5 (Instructions, Page 59)

Completion of Table 5 is required for all external outfalls which discharge process wastewater from a facility which manufactures or formulates pesticides or herbicides or other wastewaters which may contain pesticides or herbicides.

If this facility does not/will not manufacture or formulate pesticides or herbicides and does not/will not discharge other wastewaters that may contain pesticides or herbicides, check N/A.

N/A

Table 5 for Outfall No.: [Click to enter text.](#)

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Aldrin					0.01
Carbaryl					5
Chlordane					0.2
Chlorpyrifos					0.05
4,4'-DDD					0.1
4,4'-DDE					0.1
4,4'-DDT					0.02
2,4-D					0.7
Danitol [Fenpropathrin]					—
Demeton					0.20
Diazinon					0.5/0.1
Dicofol [Kelthane]					1
Dieldrin					0.02
Diuron					0.090
Endosulfan I (<i>alpha</i>)					0.01

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)*
Endosulfan II (<i>beta</i>)					0.02
Endosulfan sulfate					0.1
Endrin					0.02
Guthion [Azinphos methyl]					0.1
Heptachlor					0.01
Heptachlor epoxide					0.01
Hexachlorocyclohexane (<i>alpha</i>)					0.05
Hexachlorocyclohexane (<i>beta</i>)					0.05
Hexachlorocyclohexane (<i>gamma</i>) [Lindane]					0.05
Hexachlorophene					10
Malathion					0.1
Methoxychlor					2.0
Mirex					0.02
Parathion (ethyl)					0.1
Toxaphene					0.3
2,4,5-TP [Silvex]					0.3

* Indicate units if different from µg/L.

TABLE 6 (Instructions, Page 59)

Completion of Table 6 is required for all external outfalls.

Table 6 for Outfall No.: **005**

Samples are (check one): Composite Grab

Pollutants	Believed Present	Believed Absent	Sample 1 (mg/L)	Sample 2 (mg/L)	Sample 3 (mg/L)	Sample 4 (mg/L)	MAL (µg/L)*
Bromide	<input type="checkbox"/>	<input checked="" type="checkbox"/>					400
Color (PCU)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10				—
Nitrate-Nitrite (as N)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.68				—
Sulfide (as S)	<input type="checkbox"/>	<input checked="" type="checkbox"/>					—
Sulfite (as SO3)	<input type="checkbox"/>	<input checked="" type="checkbox"/>					—
Surfactants	<input type="checkbox"/>	<input checked="" type="checkbox"/>					—
Boron, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					20
Cobalt, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<0.167				0.3
Iron, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	92.2				7
Magnesium, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3270				20
Manganese, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	30.5				0.5
Molybdenum, total	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5.2				1
Tin, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					5
Titanium, total	<input type="checkbox"/>	<input checked="" type="checkbox"/>					30

TABLE 7 (Instructions, Page 60)

Check the box next to any of the industrial categories applicable to this facility. If no categories are applicable, check N/A. If GC/MS testing is required, check the box provided to confirm the testing results for the appropriate parameters are provided with the application.

N/A

Table 7 for Applicable Industrial Categories

Industrial Category	40 CFR Part	Volatiles Table 8	Acids Table 9	Bases/Neutrals Table 10	Pesticides Table 11
<input type="checkbox"/> Adhesives and Sealants		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Aluminum Forming	467	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Auto and Other Laundries		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Battery Manufacturing	461	<input type="checkbox"/> Yes	No	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Coal Mining	434	No	No	No	No
<input type="checkbox"/> Coil Coating	465	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Copper Forming	468	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Electric and Electronic Components	469	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Electroplating	413	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Explosives Manufacturing	457	No	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Foundries		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Gum and Wood Chemicals - Subparts A,B,C,E	454	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No	No
<input type="checkbox"/> Gum and Wood Chemicals - Subparts D,F	454	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Inorganic Chemicals Manufacturing	415	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Iron and Steel Manufacturing	420	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Leather Tanning and Finishing	425	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Mechanical Products Manufacturing		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Nonferrous Metals Manufacturing	421,471	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Oil and Gas Extraction - Subparts A, D, E, F, G, H	435	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Ore Mining - Subpart B	440	No	<input type="checkbox"/> Yes	No	No
<input checked="" type="checkbox"/> Organic Chemicals Manufacturing	414	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes
<input type="checkbox"/> Paint and Ink Formulation	446,447	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Pesticides	455	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Petroleum Refining	419	<input type="checkbox"/> Yes	No	No	No
<input type="checkbox"/> Pharmaceutical Preparations	439	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Photographic Equipment and Supplies	459	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input checked="" type="checkbox"/> Plastic and Synthetic Materials Manufacturing	414	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes
<input type="checkbox"/> Plastic Processing	463	<input type="checkbox"/> Yes	No	No	No
<input type="checkbox"/> Porcelain Enameling	466	No	No	No	No
<input type="checkbox"/> Printing and Publishing		<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subpart C	430	<input type="checkbox"/> *	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts F, K	430	<input type="checkbox"/> *	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> *
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts A, B, D, G, H	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> *
<input type="checkbox"/> Pulp and Paperboard Mills - Subparts I, J, L	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *	<input type="checkbox"/> Yes
<input type="checkbox"/> Pulp and Paperboard Mills - Subpart E	430	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> *
<input type="checkbox"/> Rubber Processing	428	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Soap and Detergent Manufacturing	417	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Steam Electric Power Plants	423	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No	No
<input type="checkbox"/> Textile Mills (Not Subpart C)	410	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	No
<input type="checkbox"/> Timber Products Processing	429	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes

* Test if believed present.

TABLES 8, 9, 10, and 11 (Instructions, Page 60)

Completion of Tables 8, 9, 10, and 11 **is required** as specified in Table 7 for all **external outfalls** that contain process wastewater.

Completion of Tables 8, 9, 10, and 11 **may be required** for types of industry not specified in Table 7 for specific parameters that are believed to be present in the wastewater.

Table 8 for Outfall No.: 005

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Acrolein	<4.00				50
Acrylonitrile	<1.00	<1.00			50
Benzene	<0.158	<1.00			10
Bromoform	<1.00	<1.00			10
Carbon tetrachloride	<1.00	<1.00			2
Chlorobenzene	<1.00	<1.00			10
Chlorodibromomethane	<1.00	<1.00			10
Chloroethane	<1.00				50
2-Chloroethylvinyl ether	<1.00				10
Chloroform	<1.00	1.14			10
Dichlorobromomethane [Bromodichloromethane]	<1.00	<1.00			10
1,1-Dichloroethane	<1.00	<1.00			10
1,2-Dichloroethane	<1.00	<1.00			10
1,1-Dichloroethylene [1,1-Dichloroethene]	<1.00	<1.00			10
1,2-Dichloropropane	<1.00	<1.00			10
1,3-Dichloropropylene [1,3-Dichloropropene]	<1	<1			10
Ethylbenzene	<1.00	<1.00			10
Methyl bromide [Bromomethane]	<1.00				50
Methyl chloride [Chloromethane]	<1.00				50
Methylene chloride [Dichloromethane]	<1.00	<1.00			20
1,1,2,2-Tetrachloroethane	<1.00	<1.00			10
Tetrachloroethylene [Tetrachloroethene]	<1.00	<1.00			10
Toluene	<1.00	<1.00			10
1,2-Trans-dichloroethylene [1,2-Trans-dichloroethene]	<1.00				10
1,1,1-Trichloroethane	<1.00	<1.00			10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
1,1,2-Trichloroethane	<1.00	<1.00			10
Trichloroethylene [Trichloroethene]	<4.00	<1.00			10
Vinyl chloride	<1.00	<1.00			10

* Indicate units if different from µg/L.

Table 9 for Outfall No.: **005**

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
2-Chlorophenol	<0.5				10
2,4-Dichlorophenol	<0.69				10
2,4-Dimethylphenol	<0.53	<0.53			10
4,6-Dinitro-o-cresol	<0.66				50
2,4-Dinitrophenol	<1.41				50
2-Nitrophenol	<0.88				20
4-Nitrophenol	<1.13				50
p-Chloro-m-cresol	<0.53				10
Pentachlorophenol	<0.5	<0.5			5
Phenol	<0.44				10
2,4,6-Trichlorophenol	<0.79				10

* Indicate units if different from µg/L.

Table 10 for Outfall No.: **005**

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Acenaphthene	<0.28				10
Acenaphthylene	<0.47				10
Anthracene	<0.35	<0.35	<0.35		10
Benzidine	<0.66	<0.66	<0.66		50
Benzo(a)anthracene	<0.38	<0.38	<0.38		5
Benzo(a)pyrene	<0.85	<0.85	<0.85		5
3,4-Benzofluoranthene [Benzo(b)fluoranthene]	<0.57				10
Benzo(ghi)perylene	<0.63				20
Benzo(k)fluoranthene	<0.57				5
Bis(2-chloroethoxy)methane	<0.35				10
Bis(2-chloroethyl)ether	<0.72	<0.72	<0.72		10

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Bis(2-chloroisopropyl)ether	<0.85				10
Bis(2-ethylhexyl)phthalate	<2.2	<2.2	<2.2		10
4-Bromophenyl phenyl ether	<0.41				10
Butylbenzyl phthalate	<0.69				10
2-Chloronaphthalene	<0.28				10
4-Chlorophenyl phenyl ether	<0.66				10
Chrysene	<0.57	<0.57	<0.57		5
Dibenzo(a,h)anthracene	<0.69				5
1,2-Dichlorobenzene [o-Dichlorobenzene]	<1.00	<1.00			10
1,3-Dichlorobenzene [m-Dichlorobenzene]	<1.00	<1.00			10
1,4-Dichlorobenzene [p-Dichlorobenzene]	<1.00	<1.00			10
3,3'-Dichlorobenzidine	<0.88	<0.88	<0.88		5
Diethyl phthalate	<0.63				10
Dimethyl phthalate	<0.72				10
Di-n-butyl phthalate	<1.22	<1.22	<1.22		10
2,4-Dinitrotoluene	<0.97				10
2,6-Dinitrotoluene	<1.22				10
Di-n-octyl phthalate	<2.76				10
1,2-Diphenylhydrazine (as Azobenzene)	<0.22				20
Fluoranthene	<0.44				10
Fluorene	<0.47				10
Hexachlorobenzene	<0.69	<0.69	<0.69		5
Hexachlorobutadiene	<0.41	<0.41	<0.41		10
Hexachlorocyclopentadiene	<0.35	<0.35	<0.35		10
Hexachloroethane	<0.47	<0.47	<0.47		20
Indeno(1,2,3-cd)pyrene	<0.22				5
Isophorone	<0.28				10
Naphthalene	<0.31				10
Nitrobenzene	<0.91	<0.91	<0.91		10
N-Nitrosodimethylamine	<0.79				50
N-Nitrosodi-n-propylamine	<0.72				20

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
N-Nitrosodiphenylamine	<0.47				20
Phenanthrene	<0.44	<0.44	<0.44		10
Pyrene	<0.57				10
1,2,4-Trichlorobenzene	<0.53				10

* Indicate units if different from µg/L.

Table 11 for Outfall No.: **005**

Samples are (check one): Composite Grab

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Aldrin	<0.00983				0.01
alpha-BHC [alpha-Hexachlorocyclohexane]	<0.00983				0.05
beta-BHC [beta-Hexachlorocyclohexane]	<0.00983				0.05
gamma-BHC [gamma-Hexachlorocyclohexane]	<0.00983				0.05
delta-BHC [delta-Hexachlorocyclohexane]	<0.00983				0.05
Chlordane	<0.0983				0.2
4,4'-DDT	<0.00983				0.02
4,4'-DDE	<0.00983				0.1
4,4'-DDD	<0.00983				0.1
Dieldrin	<0.00983				0.02
Endosulfan I (alpha)	<0.00983				0.01
Endosulfan II (beta)	<0.00983				0.02
Endosulfan sulfate	<0.00983				0.1
Endrin	<0.00983				0.02
Endrin aldehyde	<0.00983				0.1
Heptachlor	<0.00983				0.01
Heptachlor epoxide	<0.00983				0.01
PCB 1242	<0.197				0.2
PCB 1254	<0.197				0.2
PCB 1221	<0.197				0.2
PCB 1232	<0.197				0.2
PCB 1248	<0.197				0.2
PCB 1260	<0.197				0.2
PCB 1016	<0.197				0.2

Pollutant	Sample 1 (µg/L)*	Sample 2 (µg/L)*	Sample 3 (µg/L)*	Sample 4 (µg/L)*	MAL (µg/L)
Toxaphene	<0.0983				0.3

* Indicate units if different from µg/L.

Attachment: [Click to enter text.](#)

TABLE 12 (DIOXINS/FURAN COMPOUNDS)

Complete of Table 12 **is required** for **external outfalls**, as directed below. (Instructions, Pages 59-60)

Indicate which compound(s) are manufactured or used at the facility and provide a brief description of the conditions of its/their presence at the facility (check all that apply).

- 2,4,5-trichlorophenoxy acetic acid (2,4,5-T) CASRN 93-76-5
- 2-(2,4,5-trichlorophenoxy) propanoic acid (Silvex, 2,4,5-TP) CASRN 93-72-1
- 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon) CASRN 136-25-4
- 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate (Ronnel) CASRN 299-84-3
- 2,4,5-trichlorophenol (TCP) CASRN 95-95-4
- hexachlorophene (HCP) CASRN 70-30-4
- None of the above

Description: [Click to enter text.](#)

Does the applicant or anyone at the facility know or have any reason to believe that 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) or any congeners of TCDD may be present in the effluent proposed for discharge?

- Yes No

Description: [Click to enter text.](#)

If **yes** to either Items a or b, complete Table 12 as instructed.

Table 12 for Outfall No.: [Click to enter text.](#) Samples are (check one): Composite Grab

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,7,8-TCDD	1					10
1,2,3,7,8-PeCDD	1.0					50
2,3,7,8-HxCDDs	0.1					50
1,2,3,4,6,7,8-HpCDD	0.01					50
2,3,7,8-TCDF	0.1					10
1,2,3,7,8-PeCDF	0.03					50

Compound	Toxicity Equivalent Factors	Wastewater Concentration (ppq)	Wastewater Toxicity Equivalents (ppq)	Sludge Concentration (ppt)	Sludge Toxicity Equivalents (ppt)	MAL (ppq)
2,3,4,7,8-PeCDF	0.3					50
2,3,7,8-HxCDFs	0.1					50
2,3,4,7,8-HpCDFs	0.01					50
OCDD	0.0003					100
OCDF	0.0003					100
PCB 77	0.0001					500
PCB 81	0.0003					500
PCB 126	0.1					500
PCB 169	0.03					500
Total						

TABLE 13 (HAZARDOUS SUBSTANCES)

Complete Table 13 **is required** for all **external outfalls** as directed below. (Instructions, Pages 60-61)

Are there any pollutants listed in the instructions (pages 55-62) believed present in the discharge?

Yes No

Are there pollutants listed in Item 1.c. of Technical Report 1.0 which are believed present in the discharge and have not been analytically quantified elsewhere in this application?

Yes No

If **yes** to either Items a **or** b, complete Table 13 as instructed.

Table 13 for Outfall No.: **005**

Samples are (check one): Composite Grab

Pollutant	CASRN	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	Analytical Method
Heptane	142-82-5	<10.0				EPA 1666
4-Methyl 2-Pentanone	78-93-3	<50.0				EPA 624.1
Methanol	67-56-1	<5000				EPA 8015C
Calcium	7440-70-2	19300				EPA 200.7 4.4
Potassium	7440-09-7	4410				EPA 200.7 4.4
Sodium	7440-23-5	20400				EPA 200.7 4.4

Pollutant	CASRN	Sample 1 (µg/L)	Sample 2 (µg/L)	Sample 3 (µg/L)	Sample 4 (µg/L)	Analytical Method
Lithium	7439-93-2	3.29				EPA 200.7 4.4
Zirconium	7440-67-7	<10				EPA 200.7, Rev. 4.4
Dissolved Silicon	7440-21-3	4070				EPA 200.7, Rev. 4.4
Vanadium	7440-62-2	<0.254				EPA 200.8 5.4
Palladium	7440-05-3	<1000				EPA 200.7, Rev. 4.4
Acetone	67-64-1	<5.02				EPA 624.1
Xylenes	1330-20-7	<1.00				EPA 624.1
Ethylene glycol monoethyl ether	110-80-5	<10000				EPA 8015C
i-butanol	78-83-1	<5000				EPA 8015C
Isopropyl benzene (Cumene)	98-82-8	<1.00				EPA 624.1
Styrene	100-42-5	<1.00				EPA 624.1
1,3 Butadiene	106-99-0	<1.00				EPA 624.1
Benzyl alcohol	100-51-6	<0.66				EPA 625.1
Propionaldehyde	123-38-6	<50				EPA 8315
1,4 Naphthoquinone	130-15-4	<5				EPA 625.1
Hexane	110-54-3	<1.00				EPA 624.1

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 4.0: RECEIVING WATERS – Outfall 001

This worksheet **is required** for all TPDES permit applications.

Item 1. Domestic Drinking Water Supply (Instructions, Page 80)

- a. There is a surface water intake for domestic drinking water supply located within 5 (five) miles downstream from the point/proposed point of discharge.

Yes No

If **no**, stop here and proceed to Item 2. If **yes**, provide the following information:

1. The legal name of the owner of the drinking water supply intake: [Click to enter text.](#)
2. The distance and direction from the outfall to the drinking water supply intake: [Click to enter text.](#)

- b. Locate and identify the intake on the USGS 7.5-minute topographic map provided for Administrative Report 1.0.

Check this box to confirm the above requested information is provided.

Item 2. Discharge Into Tidally Influenced Waters (Instructions, Page 80) – Not Applicable

If the discharge is to tidally influenced waters, complete this section. Otherwise, proceed to Item 3.

- a. Width of the receiving water at the outfall: [Click to enter text.](#) feet

- b. Are there oyster reefs in the vicinity of the discharge?

Yes No

If **yes**, provide the distance and direction from the outfall(s) to the oyster reefs: [Click to enter text.](#)

- c. Are there sea grasses within the vicinity of the point of discharge?

Yes No

If **yes**, provide the distance and direction from the outfall(s) to the grasses: [Click to enter text.](#)

Item 3. Classified Segment (Instructions, Page 80)

The discharge is/will be directly into (or within 300 feet of) a classified segment.

Yes No

If **yes**, stop here and do not complete Items 4 and 5 of this worksheet or Worksheet 4.1.

If **no**, complete Items 4 and 5 and Worksheet 4.1 may be required.

Item 4. Description of Immediate Receiving Waters (Instructions, Page 80)

- a. Name of the immediate receiving waters: Long Creek
- b. Check the appropriate description of the immediate receiving waters:
- Lake or Pond
 - Surface area (acres): Click to enter text.
 - Average depth of the entire water body (feet): Click to enter text.
 - Average depth of water body within a 500-foot radius of the discharge point (feet): Click to enter text.
 - Man-Made Channel or Ditch
 - Stream or Creek
 - Freshwater Swamp or Marsh
 - Tidal Stream, Bayou, or Marsh
 - Open Bay
 - Other, specify:

If **Man-Made Channel or Ditch** or **Stream or Creek** were selected above, provide responses to Items 4.c - 4.g below:

- c. For **existing discharges**, check the description below that best characterizes the area **upstream** of the discharge.

For **new discharges**, check the description below that best characterizes the area **downstream** of the discharge.

- Intermittent (dry for at least one week during most years)
- Intermittent with Perennial Pools (enduring pools containing habitat to maintain aquatic life uses)
- Perennial (normally flowing)

Check the source(s) of the information used to characterize the area upstream (existing discharge) or downstream (new discharge):

- USGS flow records
- personal observation
- historical observation by adjacent landowner(s)
- other, specify: USGS Drawings

- d. List the names of all perennial streams that join the receiving water within three miles downstream of the discharge point: Long Creek flows into the Sabine River and unnamed tributary, known as Buckhorn Creek flows into the Sabine within three miles of the discharge point.

e. The receiving water characteristics change within three miles downstream of the discharge (e.g., natural or man-made dams, ponds, reservoirs, etc.).

Yes No

If **yes**, describe how: Long Creek flows into the Sabine River within three miles of the discharge, changing the width, depth, and flow rates.

f. General observations of the water body during normal dry weather conditions: The outfall was not flowing during observation. Long Creek contained some water below the outfall but appeared stagnant. The Sabine River was very low and murky brown with a slight flow.

Date and time of observation: November 18, 2025

g. The water body was influenced by stormwater runoff during observations.

Yes No

If **yes**, describe how: Click to enter text.

Item 5. General Characteristics of Water Body (Instructions, Page 81)

a. Is the receiving water upstream of the existing discharge or proposed discharge site influenced by any of the following (check all that apply):

- | | |
|---|--|
| <input type="checkbox"/> oil field activities | <input checked="" type="checkbox"/> urban runoff |
| <input checked="" type="checkbox"/> agricultural runoff | <input checked="" type="checkbox"/> septic tanks |
| <input type="checkbox"/> upstream discharges | <input type="checkbox"/> other, specify: <u>Click to enter text.</u> |

b. Uses of water body observed or evidence of such uses (check all that apply):

- | | |
|---|--|
| <input type="checkbox"/> livestock watering | <input type="checkbox"/> industrial water supply |
| <input type="checkbox"/> non-contact recreation | <input type="checkbox"/> irrigation withdrawal |
| <input type="checkbox"/> domestic water supply | <input type="checkbox"/> navigation |
| <input type="checkbox"/> contact recreation | <input type="checkbox"/> picnic/park activities |
| <input type="checkbox"/> fishing | <input type="checkbox"/> other, specify: <u>Click to enter text.</u> |

c. Description which best describes the aesthetics of the receiving water and the surrounding area (check only one):

- Wilderness:** outstanding natural beauty; usually wooded or un-pastured area: water clarity exceptional
- Natural Area:** trees or native vegetation common; some development evident (from fields, pastures, dwellings); water clarity discolored
- Common Setting:** not offensive, developed but uncluttered; water may be colored or turbid
- Offensive:** stream does not enhance aesthetics; cluttered; highly developed; dumping areas; water discolored

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 4.1: WATERBODY PHYSICAL CHARACTERISTICS

(Not required-per Worksheet 4.0 Item 4.b)

The following information **is required** for new applications, EPA-designated Major facilities, and major amendment applications requesting to add an outfall if the receiving waters are perennial or intermittent with perennial pools (including impoundments) for a TDPES permit. Complete the transects downstream of the existing or proposed discharges.

Item 1. Data Collection (Instructions, Page 82)

- a. Date of study: [Click to enter text.](#) Time of study: [Click to enter text.](#)
 Waterbody name: [Click to enter text.](#)
 General location: [Click to enter text.](#)
- b. Type of stream upstream of an existing discharge or downstream of a proposed discharge (check only one):
 perennial intermittent with perennial pools impoundment
- c. No. of defined stream bends:
 Well: [Click to enter text.](#) Moderately: [Click to enter text.](#) Poorly: [Click to enter text.](#)
- d. No. of riffles: [Click to enter text.](#)
- e. Evidence of flow fluctuations (check one):
 Minor Moderate Severe
- f. Provide the observed stream uses and where there is evidence of channel obstructions/modifications: [Click to enter text.](#)
- g. Complete the following table with information regarding the transect measurements.

Stream Transect Data

Transect Location	Habitat Type*	Water Surface Width (ft)	Stream Depths (ft)**								

* riffle, run, glide, or pool

** channel bed to water surface

Item 2. Summarize Measurements (Instructions, Page 83)

Provide the following information regarding the transect measurements:

Streambed slope of entire reach (from USGS map in ft. /ft.): [Click to enter text.](#)

Approximate drainage area above the most downstream transect from USGS map or county highway map (square miles): [Click to enter text.](#)

Length of stream evaluated (ft): [Click to enter text.](#)

Number of lateral transects made: [Click to enter text.](#)

Average stream width (ft): [Click to enter text.](#)

Average stream depth (ft): [Click to enter text.](#)

Average stream velocity (ft/sec): [Click to enter text.](#)

Instantaneous stream flow (ft³/sec): [Click to enter text.](#)

Indicate flow measurement method (VERY IMPORTANT - type of meter, floating chip timed over a fixed distance, etc.): [Click to enter text.](#)

Flow fluctuations (i.e., minor, moderate, or severe): [Click to enter text.](#)

Size of pools (i.e., large, small, moderate, or none): [Click to enter text.](#)

Maximum pool depth (ft): [Click to enter text.](#)

Total number of stream bends: [Click to enter text.](#)

 Number well defined: [Click to enter text.](#)

 Number moderately defined: [Click to enter text.](#)

 Number poorly defined: [Click to enter text.](#)

Total number of riffles: [Click to enter text.](#)

Item 1. Sewage Sludge Solids Management Plan (Instructions, Page 84)

a. Is this a new permit application or an amendment permit application?

- Yes No

b. Does or will the facility discharge in the Lake Houston watershed?

- Yes No

If **yes** to either Item 1.a or 1.b, attach a solids management plan. **Attachment:**

Item 2. Sewage Sludge Management and Disposal (Instructions, Page 84)

a. Check the box next to the sludge disposal method(s) authorized under the facility's existing permit (check all that apply).

- Permitted landfill
 Marketing and distribution by the permittee, attach Form TCEQ-00551
 Registered land application site, attach Form TCEQ-00565
 Processed by the permittee, attach Form TCEQ-00744
 Surface disposal site (sludge monofill), attach Form TCEQ-00744
 Transported to another WWTP
 Beneficial land application, attach Form TCEQ-10451
 Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach the required TCEQ forms as directed. Failure to submit the required TCEQ form will result in delays in processing the application

Attachment:

b. Provide the following information for each disposal site:

Disposal site name:

TCEQ Permit/Registration Number:

County where disposal site is located:

c. Method of sewage sludge transportation:

- truck train pipe other:

TCEQ Hauler Registration Number:

d. Sludge is transported as a:

- liquid semi-liquid semi-solid solid

e. Purpose of land application: reclamation soil conditioning N/A

- f. If sewage sludge is transported to another WWTP for treatment, attach a written statement or copy of contractual agreements confirming that the WWTP identified above will accept and be responsible for the sludge from this facility for the life of the permit (at least 5 years).

Attachment:

Item 3. Authorization for Sewage Sludge Disposal (Instructions, Page 85)

If this is a new or major amendment application which requests authorization of a new sewage sludge disposal method, check the new sewage disposal method(s) requested for authorization (check all that apply):

- Marketing and distribution by the permittee, attach Form TCEQ-00551
- Processed by the permittee, attach Form TCEQ-00744
- Surface disposal site (sludge monofill), attach Form TCEQ-00744
- Beneficial land application, attach Form TCEQ-10451
- Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach any required TCEQ forms, as directed. Failure to submit the required TCEQ form will result in delays in processing the application.

Attachment:

NOTE: New authorization for beneficial land application, incineration, processing, or disposal in the TPDES permit or TLAP **requires a major amendment to the permit**. New authorization for composting may require a major amendment to the permit. See the instructions to determine if a major amendment is required or if authorization for composting can be added through the renewal process.

I

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 4.0: RECEIVING WATERS – Outfall 002

This worksheet is **required** for all TPDES permit applications.

Item 1. Domestic Drinking Water Supply (Instructions, Page 80)

a. There is a surface water intake for domestic drinking water supply located within 5 (five) miles downstream from the point/proposed point of discharge.

Yes No

If **no**, stop here and proceed to Item 2. If **yes**, provide the following information:

1. The legal name of the owner of the drinking water supply intake: [Click to enter text.](#)
2. The distance and direction from the outfall to the drinking water supply intake: [Click to enter text.](#)

b. Locate and identify the intake on the USGS 7.5-minute topographic map provided for Administrative Report 1.0.

Check this box to confirm the above requested information is provided.

Item 2. Discharge Into Tidally Influenced Waters (Instructions, Page 80)

If the discharge is to tidally influenced waters, complete this section. Otherwise, proceed to Item 3. - Not Tidally influenced

a. Width of the receiving water at the outfall: [Click to enter text.](#) feet

b. Are there oyster reefs in the vicinity of the discharge?

Yes No

If **yes**, provide the distance and direction from the outfall(s) to the oyster reefs: [Click to enter text.](#)

c. Are there sea grasses within the vicinity of the point of discharge?

Yes No

If **yes**, provide the distance and direction from the outfall(s) to the grasses: [Click to enter text.](#)

Item 3. Classified Segment (Instructions, Page 80)

The discharge is/will be directly into (or within 300 feet of) a classified segment.

Yes No

If **yes**, stop here and do not complete Items 4 and 5 of this worksheet or Worksheet 4.1.

If **no**, complete Items 4 and 5 and Worksheet 4.1 may be required.

Item 4. Description of Immediate Receiving Waters (Instructions, Page 80)

a. Name of the immediate receiving waters: Unnamed tributary known as Buckhorn Creek, thence to Sabine River

b. Check the appropriate description of the immediate receiving waters:

Lake or Pond

• Surface area (acres): Click to enter text.

• Average depth of the entire water body (feet): Click to enter text.

• Average depth of water body within a 500-foot radius of the discharge point (feet):
Click to enter text.

Man-Made Channel or Ditch

Stream or Creek

Freshwater Swamp or Marsh

Tidal Stream, Bayou, or Marsh

Open Bay

Other, specify:

If **Man-Made Channel or Ditch** or **Stream or Creek** were selected above, provide responses to Items 4.c - 4.g below:

c. For **existing discharges**, check the description below that best characterizes the area **upstream** of the discharge.

For **new discharges**, check the description below that best characterizes the area **downstream** of the discharge.

Intermittent (dry for at least one week during most years)

Intermittent with Perennial Pools (enduring pools containing habitat to maintain aquatic life uses)

Perennial (normally flowing)

Check the source(s) of the information used to characterize the area upstream (existing discharge) or downstream (new discharge):

USGS flow records

personal observation

historical observation by adjacent landowner(s)

other, specify: USGS Drawings

d. List the names of all perennial streams that join the receiving water within three miles downstream of the discharge point: Outfall 002 discharges into an Unnamed tributary known as Buckhorn Creek, thence to the Sabine. Massey Branch joins the Sabine approximately 2.2 miles downstream.

e. The receiving water characteristics change within three miles downstream of the discharge (e.g., natural or man-made dams, ponds, reservoirs, etc.).

Yes No

If **yes**, describe how: The unnamed tributary known as Buckhorn Creek flows into the Sabine, changing the width, depth, and flow rates.

f. General observations of the water body during normal dry weather conditions: The outfall had a typical flow and dark brown color. Just upstream of the outfall, Buckhorn was slightly flowing. At the confluence of Buckhorn and the Sabine River, the dark brown coloring was observable in a small stream on the confluence side for approximately 25 feet. The Sabine was murky with a slow flow.

Date and time of observation: November 18, 2025 at 13:05

g. The water body was influenced by stormwater runoff during observations.

Yes No

If **yes**, describe how: Click to enter text.

Item 5. General Characteristics of Water Body (Instructions, Page 81)

a. Is the receiving water upstream of the existing discharge or proposed discharge site influenced by any of the following (check all that apply):

- | | |
|---|--|
| <input type="checkbox"/> oil field activities | <input checked="" type="checkbox"/> urban runoff |
| <input checked="" type="checkbox"/> agricultural runoff | <input type="checkbox"/> septic tanks |
| <input type="checkbox"/> upstream discharges | <input type="checkbox"/> other, specify: <u>Click to enter text.</u> |

b. Uses of water body observed or evidence of such uses (check all that apply):

- | | |
|---|--|
| <input type="checkbox"/> livestock watering | <input type="checkbox"/> industrial water supply |
| <input type="checkbox"/> non-contact recreation | <input type="checkbox"/> irrigation withdrawal |
| <input type="checkbox"/> domestic water supply | <input type="checkbox"/> navigation |
| <input type="checkbox"/> contact recreation | <input type="checkbox"/> picnic/park activities |
| <input type="checkbox"/> fishing | <input type="checkbox"/> other, specify: <u>Click to enter text.</u> |

c. Description which best describes the aesthetics of the receiving water and the surrounding area (check only one):

- Wilderness:** outstanding natural beauty; usually wooded or un-pastured area: water clarity exceptional
- Natural Area:** trees or native vegetation common; some development evident (from fields, pastures, dwellings); water clarity discolored
- Common Setting:** not offensive, developed but uncluttered; water may be colored or turbid
- Offensive:** stream does not enhance aesthetics; cluttered; highly developed; dumping areas; water discolored

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 4.1: WATERBODY PHYSICAL CHARACTERISTICS

The following information **is required** for new applications, EPA-designated Major facilities, and major amendment applications requesting to add an outfall if the receiving waters are perennial or intermittent with perennial pools (including impoundments) for a TDPES permit. Complete the transects downstream of the existing or proposed discharges.

Item 1. Data Collection (Instructions, Page 82)

- a. Date of study: [Click to enter text.](#) Time of study: [Click to enter text.](#)
 Waterbody name: [Click to enter text.](#)
 General location: [Click to enter text.](#)

- b. Type of stream upstream of an existing discharge or downstream of a proposed discharge (check only one):
 perennial intermittent with perennial pools impoundment

- c. No. of defined stream bends:
 Well: [Click to enter text.](#) Moderately: [Click to enter text.](#) Poorly: [Click to enter text.](#)

- d. No. of riffles: [Click to enter text.](#)

- e. Evidence of flow fluctuations (check one):
 Minor Moderate Severe

- f. Provide the observed stream uses and where there is evidence of channel obstructions/modifications: [Click to enter text.](#)

- g. Complete the following table with information regarding the transect measurements.

Stream Transect Data

Transect Location	Habitat Type*	Water Surface Width (ft)	Stream Depths (ft)**										

* riffle, run, glide, or pool
 ** channel bed to water surface

Item 2. Summarize Measurements (Instructions, Page 83)

Provide the following information regarding the transect measurements:

Streambed slope of entire reach (from USGS map in ft. /ft.): [Click to enter text.](#)

Approximate drainage area above the most downstream transect from USGS map or county highway map (square miles): [Click to enter text.](#)

Length of stream evaluated (ft): [Click to enter text.](#)

Number of lateral transects made: [Click to enter text.](#)

Average stream width (ft): [Click to enter text.](#)

Average stream depth (ft): [Click to enter text.](#)

Average stream velocity (ft/sec): [Click to enter text.](#)

Instantaneous stream flow (ft³/sec): [Click to enter text.](#)

Indicate flow measurement method (VERY IMPORTANT - type of meter, floating chip timed over a fixed distance, etc.): [Click to enter text.](#)

Flow fluctuations (i.e., minor, moderate, or severe): [Click to enter text.](#)

Size of pools (i.e., large, small, moderate, or none): [Click to enter text.](#)

Maximum pool depth (ft): [Click to enter text.](#)

Total number of stream bends: [Click to enter text.](#)

 Number well defined: [Click to enter text.](#)

 Number moderately defined: [Click to enter text.](#)

 Number poorly defined: [Click to enter text.](#)

Total number of riffles: [Click to enter text.](#)

Item 1. Sewage Sludge Solids Management Plan (Instructions, Page 84)

a. Is this a new permit application or an amendment permit application?

- Yes No

b. Does or will the facility discharge in the Lake Houston watershed?

- Yes No

If **yes** to either Item 1.a or 1.b, attach a solids management plan. **Attachment:**

Item 2. Sewage Sludge Management and Disposal (Instructions, Page 84)

a. Check the box next to the sludge disposal method(s) authorized under the facility's existing permit (check all that apply).

- Permitted landfill
 Marketing and distribution by the permittee, attach Form TCEQ-00551
 Registered land application site, attach Form TCEQ-00565
 Processed by the permittee, attach Form TCEQ-00744
 Surface disposal site (sludge monofill), attach Form TCEQ-00744
 Transported to another WWTP
 Beneficial land application, attach Form TCEQ-10451
 Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach the required TCEQ forms as directed. Failure to submit the required TCEQ form will result in delays in processing the application

Attachment:

b. Provide the following information for each disposal site:

Disposal site name:

TCEQ Permit/Registration Number:

County where disposal site is located:

c. Method of sewage sludge transportation:

- truck train pipe other:

TCEQ Hauler Registration Number:

d. Sludge is transported as a:

- liquid semi-liquid semi-solid solid

e. Purpose of land application: reclamation soil conditioning N/A

- f. If sewage sludge is transported to another WWTP for treatment, attach a written statement or copy of contractual agreements confirming that the WWTP identified above will accept and be responsible for the sludge from this facility for the life of the permit (at least 5 years).

Attachment:

Item 3. Authorization for Sewage Sludge Disposal (Instructions, Page 85)

If this is a new or major amendment application which requests authorization of a new sewage sludge disposal method, check the new sewage disposal method(s) requested for authorization (check all that apply):

- Marketing and distribution by the permittee, attach Form TCEQ-00551
- Processed by the permittee, attach Form TCEQ-00744
- Surface disposal site (sludge monofill), attach Form TCEQ-00744
- Beneficial land application, attach Form TCEQ-10451
- Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach any required TCEQ forms, as directed. Failure to submit the required TCEQ form will result in delays in processing the application.

Attachment:

NOTE: New authorization for beneficial land application, incineration, processing, or disposal in the TPDES permit or TLAP **requires a major amendment to the permit**. New authorization for composting may require a major amendment to the permit. See the instructions to determine if a major amendment is required or if authorization for composting can be added through the renewal process.

I

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 4.0: RECEIVING WATERS – Outfall 004

This worksheet **is required** for all TPDES permit applications.

Item 1. Domestic Drinking Water Supply (Instructions, Page 80)

- a. There is a surface water intake for domestic drinking water supply located within 5 (five) miles downstream from the point/proposed point of discharge.

Yes No

If **no**, stop here and proceed to Item 2. If **yes**, provide the following information:

1. The legal name of the owner of the drinking water supply intake: [Click to enter text.](#)
2. The distance and direction from the outfall to the drinking water supply intake: [Click to enter text.](#)

- b. Locate and identify the intake on the USGS 7.5-minute topographic map provided for Administrative Report 1.0.

Check this box to confirm the above requested information is provided.

Item 2. Discharge Into Tidally Influenced Waters (Instructions, Page 80)

If the discharge is to tidally influenced waters, complete this section. Otherwise, proceed to Item 3.

- a. Width of the receiving water at the outfall: [Click to enter text.](#) feet

- b. Are there oyster reefs in the vicinity of the discharge?

Yes No

If **yes**, provide the distance and direction from the outfall(s) to the oyster reefs: [Click to enter text.](#)

- c. Are there sea grasses within the vicinity of the point of discharge?

Yes No

If **yes**, provide the distance and direction from the outfall(s) to the grasses: [Click to enter text.](#)

Item 3. Classified Segment (Instructions, Page 80)

The discharge is/will be directly into (or within 300 feet of) a classified segment.

Yes No

If **yes**, stop here and do not complete Items 4 and 5 of this worksheet or Worksheet 4.1.

If **no**, complete Items 4 and 5 and Worksheet 4.1 may be required.

Item 4. Description of Immediate Receiving Waters (Instructions, Page 80)

- a. Name of the immediate receiving waters: [Click to enter text.](#)
- b. Check the appropriate description of the immediate receiving waters:
- Lake or Pond
 - Surface area (acres): [Click to enter text.](#)
 - Average depth of the entire water body (feet): [Click to enter text.](#)
 - Average depth of water body within a 500-foot radius of the discharge point (feet): [Click to enter text.](#)
 - Man-Made Channel or Ditch
 - Stream or Creek
 - Freshwater Swamp or Marsh
 - Tidal Stream, Bayou, or Marsh
 - Open Bay
 - Other, specify:

If **Man-Made Channel or Ditch** or **Stream or Creek** were selected above, provide responses to Items 4.c - 4.g below:

- c. For **existing discharges**, check the description below that best characterizes the area **upstream** of the discharge.

For **new discharges**, check the description below that best characterizes the area **downstream** of the discharge.

- Intermittent (dry for at least one week during most years)
- Intermittent with Perennial Pools (enduring pools containing habitat to maintain aquatic life uses)
- Perennial (normally flowing)

Check the source(s) of the information used to characterize the area upstream (existing discharge) or downstream (new discharge):

- USGS flow records
- personal observation
- historical observation by adjacent landowner(s)
- other, specify: [Click to enter text.](#)

- d. List the names of all perennial streams that join the receiving water within three miles downstream of the discharge point: [Click to enter text.](#)
- e. The receiving water characteristics change within three miles downstream of the discharge (e.g., natural or man-made dams, ponds, reservoirs, etc.).
- Yes
 - No

If **yes**, describe how: [Click to enter text.](#)

- f. General observations of the water body during normal dry weather conditions: [Click to enter text.](#)

Date and time of observation: [Click to enter text.](#)

- g. The water body was influenced by stormwater runoff during observations.

Yes No

If **yes**, describe how: [Click to enter text.](#)

Item 5. General Characteristics of Water Body (Instructions, Page 81)

- a. Is the receiving water upstream of the existing discharge or proposed discharge site influenced by any of the following (check all that apply):

<input type="checkbox"/> oil field activities	<input type="checkbox"/> urban runoff
<input type="checkbox"/> agricultural runoff	<input type="checkbox"/> septic tanks
<input type="checkbox"/> upstream discharges	<input type="checkbox"/> other, specify: Click to enter text.

- b. Uses of water body observed or evidence of such uses (check all that apply):

<input type="checkbox"/> livestock watering	<input type="checkbox"/> industrial water supply
<input type="checkbox"/> non-contact recreation	<input type="checkbox"/> irrigation withdrawal
<input type="checkbox"/> domestic water supply	<input type="checkbox"/> navigation
<input type="checkbox"/> contact recreation	<input type="checkbox"/> picnic/park activities
<input type="checkbox"/> fishing	<input type="checkbox"/> other, specify: Click to enter text.

- c. Description which best describes the aesthetics of the receiving water and the surrounding area (check only one):

Wilderness: outstanding natural beauty; usually wooded or un-pastured area: water clarity exceptional

Natural Area: trees or native vegetation common; some development evident (from fields, pastures, dwellings); water clarity discolored

Common Setting: not offensive, developed but uncluttered; water may be colored or turbid

Offensive: stream does not enhance aesthetics; cluttered; highly developed; dumping areas; water discolored

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 4.1: WATERBODY PHYSICAL CHARACTERISTICS

The following information **is required** for new applications, EPA-designated Major facilities, and major amendment applications requesting to add an outfall if the receiving waters are perennial or intermittent with perennial pools (including impoundments) for a TDPES permit.

Complete the transects downstream of the existing or proposed discharges.

Item 1. Data Collection (Instructions, Page 82)

- a. Date of study: [Click to enter text.](#) Time of study: [Click to enter text.](#)
 Waterbody name: [Click to enter text.](#)
 General location: [Click to enter text.](#)
- b. Type of stream upstream of an existing discharge or downstream of a proposed discharge (check only one):
 perennial intermittent with perennial pools impoundment
- c. No. of defined stream bends:
 Well: [Click to enter text.](#) Moderately: [Click to enter text.](#) Poorly: [Click to enter text.](#)
- d. No. of riffles: [Click to enter text.](#)
- e. Evidence of flow fluctuations (check one):
 Minor Moderate Severe
- f. Provide the observed stream uses and where there is evidence of channel obstructions/modifications: [Click to enter text.](#)
- g. Complete the following table with information regarding the transect measurements.

Stream Transect Data

Transect Location	Habitat Type*	Water Surface Width (ft)	Stream Depths (ft)**									

* riffle, run, glide, or pool
 ** channel bed to water surface

Item 2. Summarize Measurements (Instructions, Page 83)

Provide the following information regarding the transect measurements:

Streambed slope of entire reach (from USGS map in ft. /ft.): [Click to enter text.](#)

Approximate drainage area above the most downstream transect from USGS map or county highway map (square miles): [Click to enter text.](#)

Length of stream evaluated (ft): [Click to enter text.](#)

Number of lateral transects made: [Click to enter text.](#)

Average stream width (ft): [Click to enter text.](#)

Average stream depth (ft): [Click to enter text.](#)

Average stream velocity (ft/sec): [Click to enter text.](#)

Instantaneous stream flow (ft³/sec): [Click to enter text.](#)

Indicate flow measurement method (VERY IMPORTANT - type of meter, floating chip timed over a fixed distance, etc.): [Click to enter text.](#)

Flow fluctuations (i.e., minor, moderate, or severe): [Click to enter text.](#)

Size of pools (i.e., large, small, moderate, or none): [Click to enter text.](#)

Maximum pool depth (ft): [Click to enter text.](#)

Total number of stream bends: [Click to enter text.](#)

 Number well defined: [Click to enter text.](#)

 Number moderately defined: [Click to enter text.](#)

 Number poorly defined: [Click to enter text.](#)

Total number of riffles: [Click to enter text.](#)

Item 1. Sewage Sludge Solids Management Plan (Instructions, Page 84)

a. Is this a new permit application or an amendment permit application?

- Yes No

b. Does or will the facility discharge in the Lake Houston watershed?

- Yes No

If **yes** to either Item 1.a or 1.b, attach a solids management plan. **Attachment:**

Item 2. Sewage Sludge Management and Disposal (Instructions, Page 84)

a. Check the box next to the sludge disposal method(s) authorized under the facility's existing permit (check all that apply).

- Permitted landfill
 Marketing and distribution by the permittee, attach Form TCEQ-00551
 Registered land application site, attach Form TCEQ-00565
 Processed by the permittee, attach Form TCEQ-00744
 Surface disposal site (sludge monofill), attach Form TCEQ-00744
 Transported to another WWTP
 Beneficial land application, attach Form TCEQ-10451
 Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach the required TCEQ forms as directed. Failure to submit the required TCEQ form will result in delays in processing the application

Attachment:

b. Provide the following information for each disposal site:

Disposal site name:

TCEQ Permit/Registration Number:

County where disposal site is located:

c. Method of sewage sludge transportation:

- truck train pipe other:

TCEQ Hauler Registration Number:

d. Sludge is transported as a:

- liquid semi-liquid semi-solid solid

e. Purpose of land application: reclamation soil conditioning N/A

- f. If sewage sludge is transported to another WWTP for treatment, attach a written statement or copy of contractual agreements confirming that the WWTP identified above will accept and be responsible for the sludge from this facility for the life of the permit (at least 5 years).

Attachment:

Item 3. Authorization for Sewage Sludge Disposal (Instructions, Page 85)

If this is a new or major amendment application which requests authorization of a new sewage sludge disposal method, check the new sewage disposal method(s) requested for authorization (check all that apply):

- Marketing and distribution by the permittee, attach Form TCEQ-00551
- Processed by the permittee, attach Form TCEQ-00744
- Surface disposal site (sludge monofill), attach Form TCEQ-00744
- Beneficial land application, attach Form TCEQ-10451
- Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach any required TCEQ forms, as directed. Failure to submit the required TCEQ form will result in delays in processing the application.

Attachment:

NOTE: New authorization for beneficial land application, incineration, processing, or disposal in the TPDES permit or TLAP **requires a major amendment to the permit**. New authorization for composting may require a major amendment to the permit. See the instructions to determine if a major amendment is required or if authorization for composting can be added through the renewal process.

I

INDUSTRIAL WASTEWATER PERMIT APPLICATION WORKSHEET 4.0: RECEIVING WATERS – Outfall 005

This worksheet is **required** for all TPDES permit applications.

Item 1. Domestic Drinking Water Supply (Instructions, Page 80)

a. There is a surface water intake for domestic drinking water supply located within 5 (five) miles downstream from the point/proposed point of discharge.

Yes No

If **no**, stop here and proceed to Item 2. If **yes**, provide the following information:

1. The legal name of the owner of the drinking water supply intake: [Click to enter text.](#)
2. The distance and direction from the outfall to the drinking water supply intake: [Click to enter text.](#)

b. Locate and identify the intake on the USGS 7.5-minute topographic map provided for Administrative Report 1.0.

Check this box to confirm the above requested information is provided.

Item 2. Discharge Into Tidally Influenced Waters (Instructions, Page 80)

If the discharge is to tidally influenced waters, complete this section. Otherwise, proceed to Item 3. - Not Tidally influenced

a. Width of the receiving water at the outfall: [Click to enter text.](#) feet

b. Are there oyster reefs in the vicinity of the discharge?

Yes No

If **yes**, provide the distance and direction from the outfall(s) to the oyster reefs: [Click to enter text.](#)

c. Are there sea grasses within the vicinity of the point of discharge?

Yes No

If **yes**, provide the distance and direction from the outfall(s) to the grasses: [Click to enter text.](#)

Item 3. Classified Segment (Instructions, Page 80)

The discharge is/will be directly into (or within 300 feet of) a classified segment.

Yes No

If **yes**, stop here and do not complete Items 4 and 5 of this worksheet or Worksheet 4.1.

If **no**, complete Items 4 and 5 and Worksheet 4.1 may be required.

Item 4. Description of Immediate Receiving Waters (Instructions, Page 80)

a. Name of the immediate receiving waters: Dry spillway to unnamed tributary known as Buckhorn Creek

b. Check the appropriate description of the immediate receiving waters:

Lake or Pond

- Surface area (acres): Click to enter text.
- Average depth of the entire water body (feet): Click to enter text.
- Average depth of water body within a 500-foot radius of the discharge point (feet): Click to enter text.

Man-Made Channel or Ditch

Stream or Creek

Freshwater Swamp or Marsh

Tidal Stream, Bayou, or Marsh

Open Bay

Other, specify:

If **Man-Made Channel or Ditch** or **Stream or Creek** were selected above, provide responses to Items 4.c - 4.g below:

c. For **existing discharges**, check the description below that best characterizes the area **upstream** of the discharge.

For **new discharges**, check the description below that best characterizes the area **downstream** of the discharge.

Intermittent (dry for at least one week during most years)

Intermittent with Perennial Pools (enduring pools containing habitat to maintain aquatic life uses)

Perennial (normally flowing)

Check the source(s) of the information used to characterize the area upstream (existing discharge) or downstream (new discharge):

USGS flow records

personal observation

historical observation by adjacent landowner(s)

other, specify: USGS drawings

d. List the names of all perennial streams that join the receiving water within three miles downstream of the discharge point: An intermittent to a perennial section of the unnamed tributary known as Buckhorn Creek and the Sabine River.

e. The receiving water characteristics change within three miles downstream of the discharge (e.g., natural or man-made dams, ponds, reservoirs, etc.).

Yes No

If **yes**, describe how: The discharge is into a normally dry spillway, thence to a intermittently dry section of the unnamed tributary known as buckhorn, then to a perennial section of Buckhorn, followed by the Sabine River.

f. General observations of the water body during normal dry weather conditions: The spillway was not flowing and the channel from the spillway to Buckhorn was dry save for one small pool. Buckhorn was dry upstream of where the spillway would flow. There was a pool immediately where then channel flows into Buckhorn but was dry past that pool for the immediate distance.

Date and time of observation: November 18, 2025, at 13:30

g. The water body was influenced by stormwater runoff during observations.

Yes No

If **yes**, describe how: Click to enter text.

Item 5. General Characteristics of Water Body (Instructions, Page 81)

a. Is the receiving water upstream of the existing discharge or proposed discharge site influenced by any of the following (check all that apply):

- | | |
|---|--|
| <input type="checkbox"/> oil field activities | <input checked="" type="checkbox"/> urban runoff |
| <input checked="" type="checkbox"/> agricultural runoff | <input type="checkbox"/> septic tanks |
| <input type="checkbox"/> upstream discharges | <input type="checkbox"/> other, specify: <u>Click to enter text.</u> |

b. Uses of water body observed or evidence of such uses (check all that apply):

- | | |
|---|--|
| <input type="checkbox"/> livestock watering | <input type="checkbox"/> industrial water supply |
| <input type="checkbox"/> non-contact recreation | <input type="checkbox"/> irrigation withdrawal |
| <input type="checkbox"/> domestic water supply | <input type="checkbox"/> navigation |
| <input type="checkbox"/> contact recreation | <input type="checkbox"/> picnic/park activities |
| <input type="checkbox"/> fishing | <input type="checkbox"/> other, specify: <u>Click to enter text.</u> |

c. Description which best describes the aesthetics of the receiving water and the surrounding area (check only one):

- Wilderness:** outstanding natural beauty; usually wooded or un-pastured area: water clarity exceptional
- Natural Area:** trees or native vegetation common; some development evident (from fields, pastures, dwellings); water clarity discolored
- Common Setting:** not offensive, developed but uncluttered; water may be colored or turbid
- Offensive:** stream does not enhance aesthetics; cluttered; highly developed; dumping areas; water discolored

INDUSTRIAL WASTEWATER PERMIT APPLICATION

WORKSHEET 4.1: WATERBODY PHYSICAL CHARACTERISTICS

The following information **is required** for new applications, EPA-designated Major facilities, and major amendment applications requesting to add an outfall if the receiving waters are perennial or intermittent with perennial pools (including impoundments) for a TDPES permit.

Complete the transects downstream of the existing or proposed discharges.

Item 1. Data Collection (Instructions, Page 82)

- a. Date of study: [Click to enter text.](#) Time of study: [Click to enter text.](#)
 Waterbody name: [Click to enter text.](#)
 General location: [Click to enter text.](#)

- b. Type of stream upstream of an existing discharge or downstream of a proposed discharge (check only one):
 perennial intermittent with perennial pools impoundment

- c. No. of defined stream bends:
 Well: [Click to enter text.](#) Moderately: [Click to enter text.](#) Poorly: [Click to enter text.](#)

- d. No. of riffles: [Click to enter text.](#)

- e. Evidence of flow fluctuations (check one):
 Minor Moderate Severe

- f. Provide the observed stream uses and where there is evidence of channel obstructions/modifications: [Click to enter text.](#)

- g. Complete the following table with information regarding the transect measurements.

Stream Transect Data

Transect Location	Habitat Type*	Water Surface Width (ft)	Stream Depths (ft)**									

* riffle, run, glide, or pool
 ** channel bed to water surface

Item 2. Summarize Measurements (Instructions, Page 83)

Provide the following information regarding the transect measurements:

Streambed slope of entire reach (from USGS map in ft. /ft.): [Click to enter text.](#)

Approximate drainage area above the most downstream transect from USGS map or county highway map (square miles): [Click to enter text.](#)

Length of stream evaluated (ft): [Click to enter text.](#)

Number of lateral transects made: [Click to enter text.](#)

Average stream width (ft): [Click to enter text.](#)

Average stream depth (ft): [Click to enter text.](#)

Average stream velocity (ft/sec): [Click to enter text.](#)

Instantaneous stream flow (ft³/sec): [Click to enter text.](#)

Indicate flow measurement method (VERY IMPORTANT - type of meter, floating chip timed over a fixed distance, etc.): [Click to enter text.](#)

Flow fluctuations (i.e., minor, moderate, or severe): [Click to enter text.](#)

Size of pools (i.e., large, small, moderate, or none): [Click to enter text.](#)

Maximum pool depth (ft): [Click to enter text.](#)

Total number of stream bends: [Click to enter text.](#)

 Number well defined: [Click to enter text.](#)

 Number moderately defined: [Click to enter text.](#)

 Number poorly defined: [Click to enter text.](#)

Total number of riffles: [Click to enter text.](#)

Item 1. Sewage Sludge Solids Management Plan (Instructions, Page 84)

a. Is this a new permit application or an amendment permit application?

- Yes No

b. Does or will the facility discharge in the Lake Houston watershed?

- Yes No

If **yes** to either Item 1.a or 1.b, attach a solids management plan. **Attachment:**

Item 2. Sewage Sludge Management and Disposal (Instructions, Page 84)

a. Check the box next to the sludge disposal method(s) authorized under the facility's existing permit (check all that apply).

- Permitted landfill
 Marketing and distribution by the permittee, attach Form TCEQ-00551
 Registered land application site, attach Form TCEQ-00565
 Processed by the permittee, attach Form TCEQ-00744
 Surface disposal site (sludge monofill), attach Form TCEQ-00744
 Transported to another WWTP
 Beneficial land application, attach Form TCEQ-10451
 Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach the required TCEQ forms as directed. Failure to submit the required TCEQ form will result in delays in processing the application

Attachment:

b. Provide the following information for each disposal site:

Disposal site name:

TCEQ Permit/Registration Number:

County where disposal site is located:

c. Method of sewage sludge transportation:

- truck train pipe other:

TCEQ Hauler Registration Number:

d. Sludge is transported as a:

- liquid semi-liquid semi-solid solid

e. Purpose of land application: reclamation soil conditioning N/A

- f. If sewage sludge is transported to another WWTP for treatment, attach a written statement or copy of contractual agreements confirming that the WWTP identified above will accept and be responsible for the sludge from this facility for the life of the permit (at least 5 years).

Attachment:

Item 3. Authorization for Sewage Sludge Disposal (Instructions, Page 85)

If this is a new or major amendment application which requests authorization of a new sewage sludge disposal method, check the new sewage disposal method(s) requested for authorization (check all that apply):

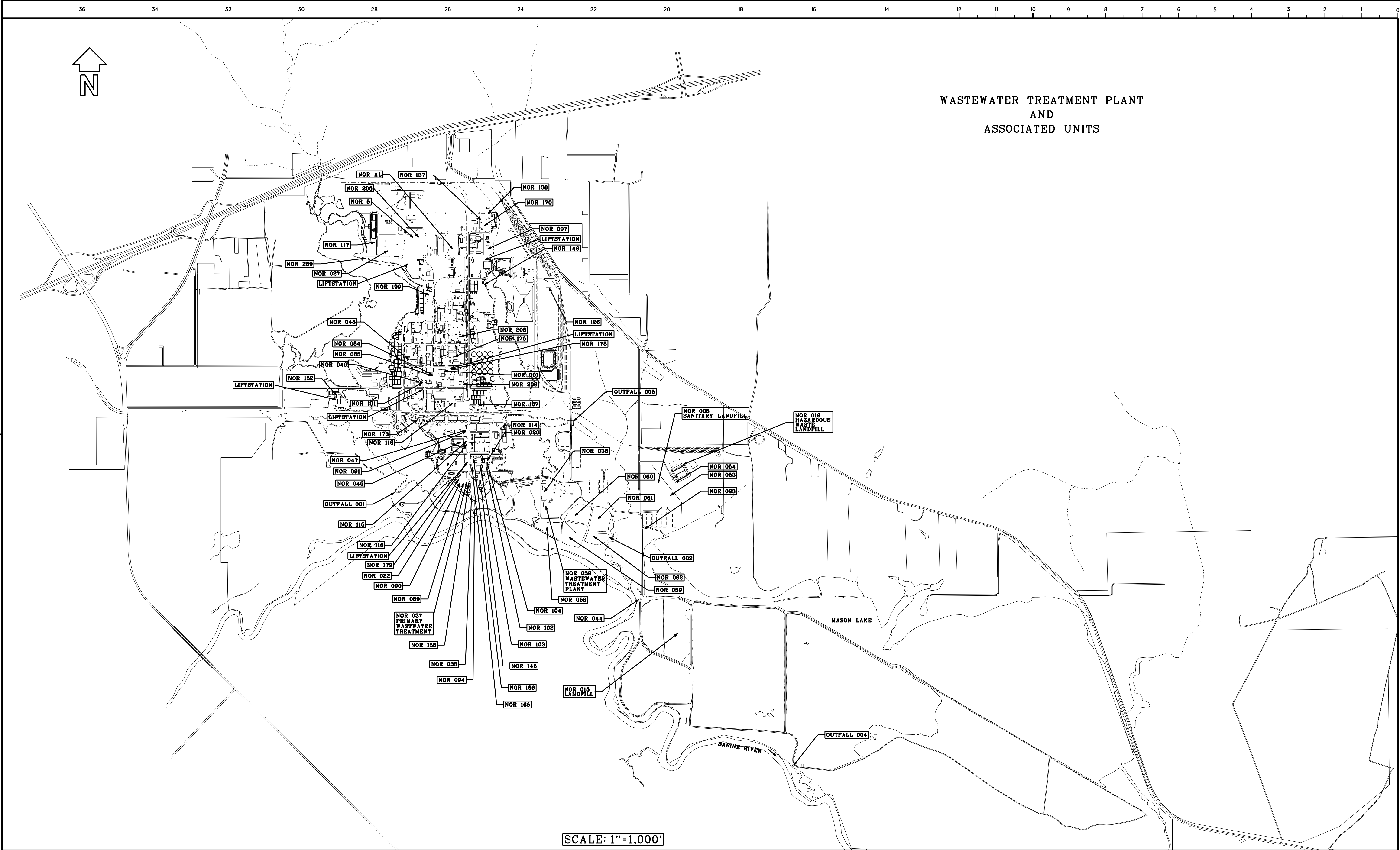
- Marketing and distribution by the permittee, attach Form TCEQ-00551
- Processed by the permittee, attach Form TCEQ-00744
- Surface disposal site (sludge monofill), attach Form TCEQ-00744
- Beneficial land application, attach Form TCEQ-10451
- Incineration, attach Form TCEQ-00744

Based on the selection(s) made above, complete and attach any required TCEQ forms, as directed. Failure to submit the required TCEQ form will result in delays in processing the application.

Attachment:

NOTE: New authorization for beneficial land application, incineration, processing, or disposal in the TPDES permit or TLAP **requires a major amendment to the permit**. New authorization for composting may require a major amendment to the permit. See the instructions to determine if a major amendment is required or if authorization for composting can be added through the renewal process.

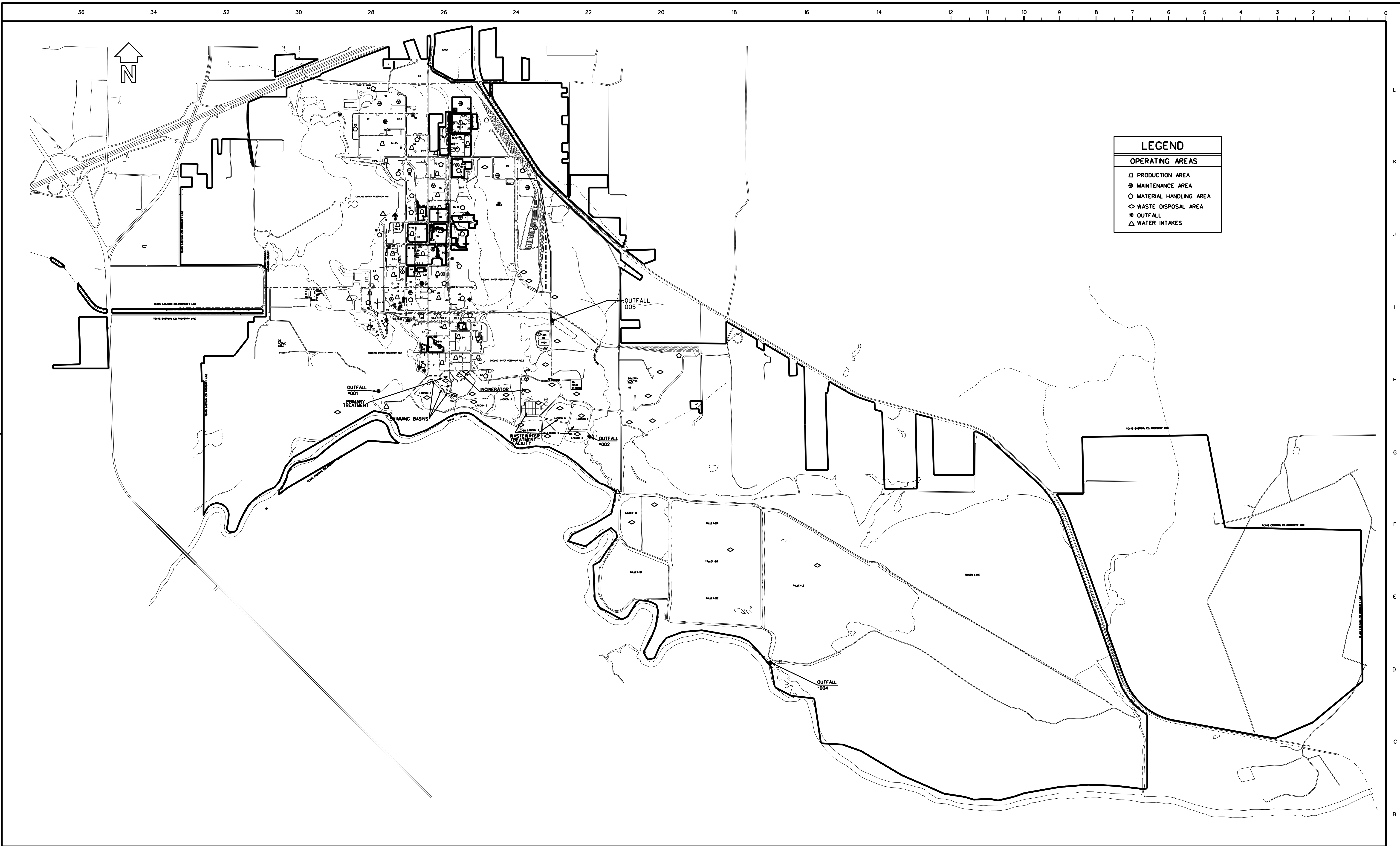
I



WASTEWATER TREATMENT PLANT
AND
ASSOCIATED UNITS

SCALE: 1"=1,000'

LIFE IS FRAGILE DESIGN AND BUILD WITH CARE	4A	JCM	10/23/25*	J. MURRY	MANAGEMENT APPROVALS	DATE	OPERATING & STAFF APPROVALS	DATE	CONTRACTOR FIRM NAME	MOD NUMBER	SCALE	ISSUE FOR	APPROVAL CLASS
	ADDED OUTFALL 004, DELETED NOR 92 AND ADDED NOR 38								TEXAS OPERATIONS	NONE	AS NOTED	EITXOS08.523.0018	2.10
									EASTMAN CHEMICAL COMPANY			ISSUE FOR	
									LONGVIEW, TEXAS 75607			IFR - 4A	
								UNRESTRICTED				RECORD	
								LIFE IS FRAGILE DESIGN WITH CARE.					
REFERENCE DRAWINGS	DWG NO	REV NO	DATE	ISSUED FOR	COORD	B/M	DRAWN	CHECKED	DATE	ENGR APP	OPRG APP	PLANT NORTH	REV NO
		0										F.J. COPELAND	4A
												7-28-05	EV-IC-1225
* SIGNED APPROVAL PRINT													



LIFE IS FRAGILE DESIGN AND BUILD WITH CARE	REFERENCE DRAWINGS	DWG NO	REV NO 0	DATE	ISSUED FOR	COORD	B/M	DRAWN (CHECKED)	DATE	ENGR APP	OPRG APP	MANAGEMENT APPROVALS DATE	OPERATING & STAFF APPROVALS DATE	CONTRACTOR FIRM NAME TEXAS OPERATIONS EASTMAN CHEMICAL COMPANY LONGVIEW, TEXAS 75607	MOI NUMBER NONE	ISSUE STAMP IFR 9A 09-29-17	SCALE 1" = 200'	ISSUE FOR EITXOS08.523.0018	APPROVAL CLASS 2.10
			9A	01/20/25	JCM	10/23/25*						MANAGEMENT APPROVALS DATE	OPERATING & STAFF APPROVALS DATE	TEXAS OPERATIONS EASTMAN CHEMICAL COMPANY LONGVIEW, TEXAS 75607				FACILITY MAP FOR INDUSTRIAL WASTEWATER AND WATER INTAKES PRODUCTION/MAINTENANCE/MATERIALS HANDLING AND WASTE DISPOSAL AREAS	
			ADDED OUTFALL 005																
SAS 4-26-96												UNRESTRICTED		RECORD	PLANT NORTH	DRAWING NO EV-IC-009		REV NO 9A	
			* SIGNED APPROVAL PRINT														3-21-96	3-25-96	

Eastman Chemical Company
Attachment T-1
Technical Report 1.0, Item 1.c.
Materials List

Raw Materials	CAS No.	Intermediate Products	CAS No.
Propane	000074-98-6	Propylene	000115-07-1
Ethane	000074-84-0	Ethylene	74-85-1
Butane	18875-00	Carbon monoxide	000630-08-0
Natural Gas	800614-2	Hydrogen	1333-74-0
Hexene	592-41-6	Propanol	71-23-8
Ammonia	007664-41-7	Butanol	71-36-3
Natural Gasoline	mixture	2-Ethylhexanol	104-76-7
Formaldehyde	50-00-0	Molten Resin	69430-35-9
Hydrochloric Acid	7647-01-0	Molten DSW wax	Westlake Chemical
n-Butyric Acid	107-92-6	Molten Polyethylene	9002-88-4
Acetic Acid	64-19-7	Acetaldehyde	75-07-0
Pyrolysis Gasoline	mixture	Isobutyraldehyde	78-84-2
Methyl Acrylate	96-33-3	Propionaldehyde	000123-38-6
Butyl Acrylate	141-32-2	Ethylene Oxide	000075-21-8
Maleic Anhydride	108-31-6	n-Butyraldehyde	123-72-8
Ethanol	64-17-5	De-butanized Aromatic Concentrate (DAC-C)	69430-33-7, 1330-20-7, 108- 88-3, 100-41-4, 100-42-5
Ethylene	74-85-1		
Propylene	115-07-1		

Final Products	CAS No.
Polyethylene	Westlake Chemical
Isobutyric Acid	79-31-2
Acetaldehyde	75-07-0
Diethylene Glycol Monoethyl Ether (DE)	111-90-0
Ethylene Glycol Monobutyl Ether (EB)	111-76-2
DTB (mixture if di & tri ethylene glycol monobutyl ether), DTE (mixture if di & tri ethylene glycol monoethyl ether) , DTP (mixture if di & tri ethylene glycol monopropyl ether)	143-22-6, 112-34-5
Ethylene Glycol Monopropyl Ether (EP)	2807-30-9
Diethylene Glycol Monopropyl Ether (DP)	6881-94-3
Ethylene Glycol Mono-2-Ethylhexyl Ether (EEH)	1559-35-9, 1559-36-0, 1559-37-1
Diethylene Glycol Monobutyl Ether (DB)	112-34-5
Triethylene Glycol (TEG)	112-27-6
Crude Butadiene	106-99-0, 106-98-9, 115-11-7, 624- 64-6, 106-97-8, 590-18-1
Glycol High Boilers	107-21-1, 111-46-6, 7732-18-5, 112-27-6, 112-60-7

**Eastman Chemical Company
Attachment T-1
Technical Report 1.0, Item 1.c.
Materials List**

Final Products (continued)	CAS No.
2-Ethylhexanol (2-EH)	104-76-7
n-Propanol	71-23-8
Isobutanol	78-83-1
Neopentyl Glycol (NPG)	126-30-7
Butyraldehyde	123-72-8
Isobutyraldehyde	78-84-2
Ethylene Glycol	107-21-1
2-Ethylhexaldehyde	123-05-7
n-butanol	71-36-3
Acetone	67-64-1
Propionaldehyde	123-38-6
Hydrocarbon Resin (Eastotac™ & Epolene®)	68131-77-1
Methyl Isopropyl Ketone	563-80-4
Ethyl Acetate	141-78-6
Isobutyl Acetate	110-19-0
Isobutyl Isobutyrate (IBIB)	97-85-8
2,2,4-Trimethylpentane-1,3-pentane diol (TMPD™)	144-19-4
2,2,4-Trimethylpentane-1,3-diol Monoisobutyrate (Texanol™)	025265-77-4
2,2,4-Trimethylpentane-1,3-pentane diol Diisobutyrate (TXIB)	6846-50-0
Propionic Acid	79-09-4
3,4 Epoxy-1-Butene	000930-22-3
Pyrolysis Gasoline	68606-10-0
Pyrolysis Tar	64742-90-1
Butylenes	106-98-9, 624-64-6, 115-11-7, 590-18-1, 106-99-0, 106-97-8, 75-28-5
Ethylene	74-85-1
Propylene	115-07-1
Di-isopropyl Ketone	565-80-0
Solvent 85	68476-45-9
Solvent R	None (C9-C12, C14-C16, C18-C20)
Plasticizer H	69430-35-9
Solvent 140	2040-96-2
Crude Heptane	142-82-5, 108-87-2, 108-88-3
Mixed Glycol 90	Varies
Waxes	Westlake Chemical
Amorphous Poly Olefins (Eastoflex™)	9003-07-0 , 9010-79-1
n-butyronitrile	109-74-0
i-butyronitrile	78-82-0
Polypropylene non-maleated	9003-07-0
Polypropylene maleated (Epolene®)	Westlake Chemical

Eastman Chemical Company
Attachment T-1
Technical Report 1.0, Item 1.c.
Materials List

Final Products (continued)	CAS No.
Polyethylene maleated (Epolene®)	Westlake Chemical
Diethylene Glycol	111-46-6
2-Ethylhexaldehyde	123-05-7
Isopropyl Acetate (bought, stored & sold)	108-21-4
N-propyl acetate (bought, stored & sold)	109-60-4
Methyl amyl ketone (bought, stored & sold)	110-43-0
Dibutyl phthalate (bought, stored & sold)	84-74-2
Methyl Isobutyl Ketone (MIBK)	108-10-1
N- butyl acetate (bought, stored & sold)	123-86-4
CTA (Mix of TMPD, TXIB, IBIB & Texanol™)	See CAS above
Solvent MTE	6846-50-0, 25265-77-4, 144-19-4, 78-83-1, 15904-30-0, 3494-69-7
Triethylene Glycol	112-27-6
EEH High Boiler	26468-86-0, 1559-37-1, 1559-36-0, 1559-35-9, 1310-73-2
Glycol Ether High Boilers	112-50-5, 23305-64-8, 143-22-6, 5650-20-4, 23307-36-0, 1559-34-8, 111-90-0, 6881-94-3, 112-34-5, 141-52-6, 6819-41-6, 2372-45-4, 4353-29-1, 1786-94-3
Resin Oil C	68513-69-9, 77-73-6 , 100-42-5 95-13-6, 108-88-3
Tetra Glycols	112-60-7, 112-27-6, 25322-68-3
Acetic Acid	64-19-7
Acetic Anhydride	108-24-7
Ethyl-3-ethoxypropionate (Eastman (TM) EEP)	763-69-9
2-methoxy-1-methylethyl acetate (PM Acetate)	108-65-6
Polypropylene	Flint Hills Resources
Carbon monoxide*, Hydrogen*, Oxygen	Air Liquide
Pelletized Amorphous Olefins	3D Plastics Production
Texas Technologies **	Miscellaneous
Msc. Plant Chemicals	Unknown until needed

* CO & H2 are not produced by reforming, but by oxidation, so 40 CFR, Part 415, Subpart AG is not applicable.

** Eastman uses and develops various chemicals at this location.

Eastman Chemical Company

Attachment T-2

Technical Report 1.0

Item 1.d.

List of Wastewater Treatment Units and Associated Units

		NOR #	Capacity (gal.)
1	Bld 30 Wastewater Catalyst Basin	1	4,730
2	Co-Gen Neutralization Tank (NOR 86483)	5	26,000
3	Bld. 91 Wastewater Catalyst Basin	7	23,870
4	Sanitary Waste Landfill	8	35 Acres
5	Talley Landfill	15	48 Acres
6	Hazardous Waste Landfill	19	11.7 Acres
7	HAc WWT Unit (55F516, 55F517 & 55F518)	20	41,000
8	Bldg 71 (HCC-3B) API Separator	22	15,000
9	Copper Settling Basin	33	1.1 M
10	B-106 Primary Wastewater Treatment System	37	202,821
11	B-107 Activated Sludge Wastewater Treat Plant	39	19,400,000
12	Talley 1A & Area Groundwater Recovery (89TK-1)	15/44	5,000
13	Bld 52TK-35	45	2.8 M
14	Deionized Wastewater Tank 52tk-33	47	42,400
15	Wastewater Decanter Tank 27Tk-154	48	1,200
16	Wastewater Decanter Tank 13Tk-47	49	6,000
17	Sanitary Waste Landfill WaterCollection Tank	53	2,300
18	Hazardous Waste Landfill Leachate Collection Tank	54	2,000
19	Lagoon 4	58	18M
20	Lagoon 5	59	28M
21	Lagoon 6	60	20M
22	Lagoon 7	61	29M
23	Lagoon 8	62	10 M
24	Bld 106 Primary Treatments Systems	79	4 yd. 3
25	Deionized Wastewater Tank 10Tk-51	84	21,200
26	Deionized Wastewater Tank 10Tk-52	85	21,200
27	Bldg 106 Stormwater Tank 1	89	1,290,000
28	Bldg 106 Stormwater Tank 2	90	1,290,000
29	Deionized Wastewater Tank 10Tk-34	91	42,400
30	HOB/WOB Groundwater Recovery tank 117Tk-1	92	2,000
31	Bldg 13 Wastewater Removal Column 13D-20	101	3,500
32	Bldg 55 Wastewater Decanter 55F-515	102	360
33	Bldg 55 Wastewater Concentrator Column 55E-305	103	10,000
34	Bldg 55 Wastewater Stripper 55E-507	104	2,200
35	Bldg 54 Wastewater Tank 54T-80	114	500
36	Bldg 54 (HCC-3) API Separator	115	15,000
37	Bldg 54 (HCC-3A) API Separator	116	15,000
38	Bldg 74 (HCC-4) CPI Separator	117	11,000
39	Bldg 25 API Separator	118	21,000
40	Bld 84 Garage wastewater sumps	126	2,000
41	Westlake Wastewater Sump	137	144,000
42	Bld. 122, Catalyst Reagent Deactivation Basin	138	32,600
43	Bldg 105 Wastewater Tank 105Tk-5	145	10,200
44	Bldg 56 Wastewater Tank 56T-161	146	25,000
45	Bldg 106 Tk-7 Spill collection tank	158	5,264
46	Bld. 55, Acetaldehyde Catalyst Pit No. 1	165	2,700
47	Bld. 55, Acetaldehyde Catalyst Pit No. 1	166	2,700
48	B-35 Wastewater Sump	167	20,200
49	122Tk-215 Hydrolysis Tank	170	1,700
50	Bld 24, Flare knockout wastewater container	173	300
51	Bldg 50 wastewater sump	175	750
52	Wastewater Lift Station Tank 26Tk-86A	178	8,000
53	Wastewater Lift Station Tank 108Tk-61	179	19,000
54	Bldg 62 Groundwater Sump	199	550
55	B-26 Wash Pad Sump	204	6,000
56	Co-Gen Sump	205	22,900
57	Air Liquide Sump (Their NOR)	206	4,480
58	Eastoflex D-4 Sludge Waterwater Tank	206	6,460
59	Bld 26 Washpad	208	6,000
60	Bld 74 Flare Knockout Wastewater	269	6,140

Eastman Chemical Company
Attachment T-3
Technical Report 1.0, Item 1.f.
100-year Flood Determination

All portions of Eastman Chemical Company's, Texas Operations (Eastman) wastewater treatment facilities are located above the 100-year frequency flood level except for the diversions/retention/polishing surface impoundments. The 100-year flood plain level is 263 feet elevation per the C Thomas Koch, Inc. report¹ dated August 26, 2014, which included the use of Freese and Nichols, Inc. reports². Lagoons 4, 5 and 8 which border the Sabine River have a lowest dike elevation of 254 feet. The Tom Koch, Inc. report dated August 26, 2014 was required by our year 2014 RCRA Part B permit renewal application. The Koch study concluded that there is no potential health and ecological impact associated with a washout of the Texas Eastman lagoon system from a major flood event in the Sabine River during a 100-year frequency flood.

Since the May 28, 1997 washout demonstration analysis by C. Thomas Koch, Inc., Lagoons 1-3 have received no process wastewater. Lagoon Number 1 has been emptied of water and the only water entering the facility is by rain fall/runoff. Lagoon Numbers 2 and 3 receive no process wastewaters and only collect rain fall/runoff. Lagoon 2 and Lagoon 3 are RCRA closed. Since, 1990, Lagoons 4, 5 and 8 are used as needed to treat wastewater from the activated sludge treatment plant (ASP), cooling tower blowdown and domestic sewage/septage. Lagoon Numbers 6 and 7 can be used as diversion basins to treat wastewater from the ASP on an "as needed" basis, but they normally remain empty of any water, other than stormwater.

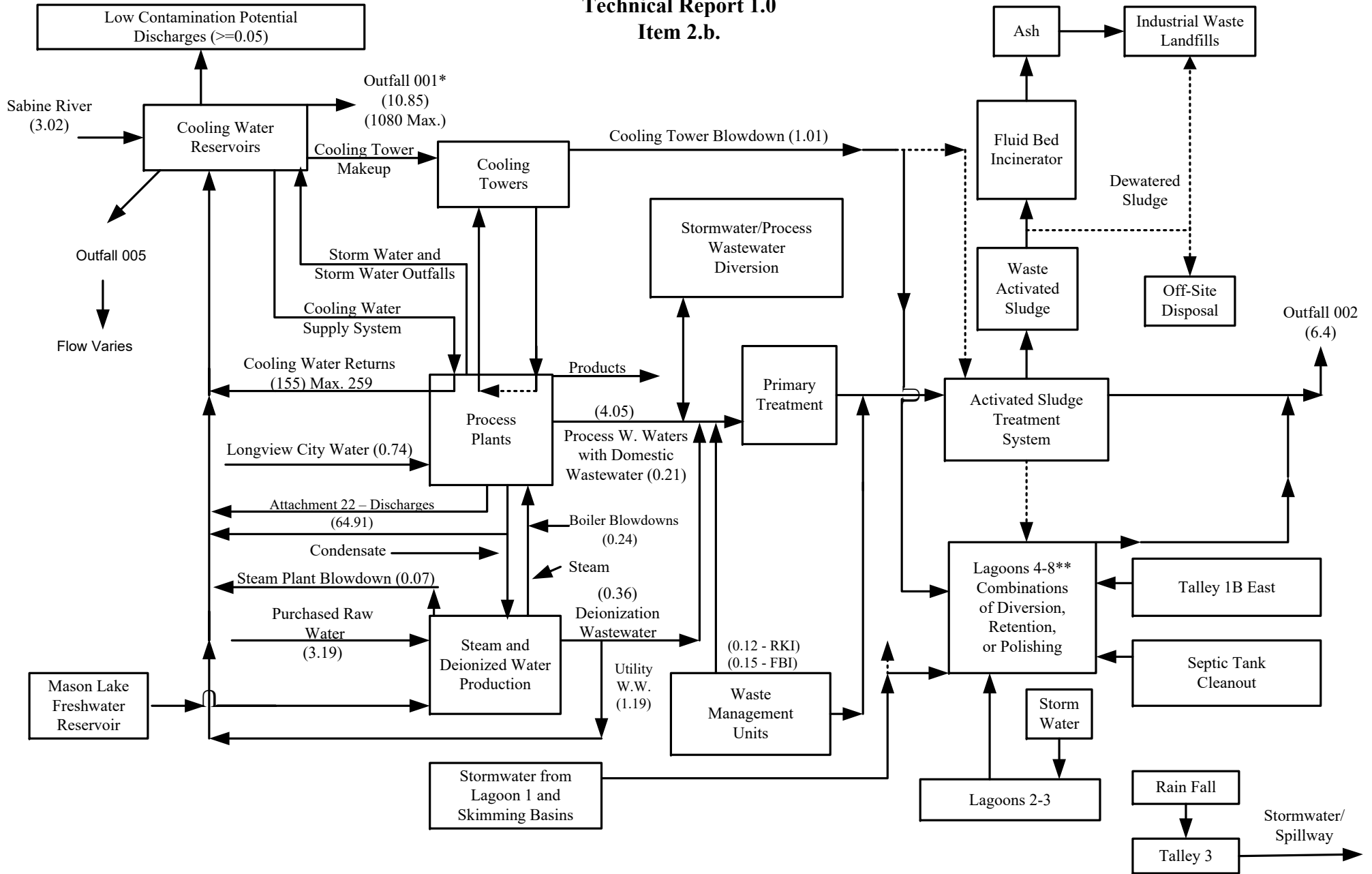
Eastman maintains the dike integrity to reduce the potential for unauthorized discharges or failure of the Lagoon dike structures. Depending on the severity of a 100-year flood, Eastman may take actions to increase the dike height, if feasible, to keep the Lagoons from filling with Sabine River water and then overflowing back to the Sabine River basin. As indicated in the Koch study, releases of wastewater would pose not threat to human health or the environment.

¹ Eastman Chemical Company Washout Analysis, C Thomas Koch, PE. August 26, 2014.

² Eastman Levee Review, Freese and Nichols, Inc., Forth Worth, Texas, August 18, 2014. And, Geotechnical Investigation, Dike Stability, Texas Eastman Company, Longview, Texas, Freese and Nichols, Inc., Forth Worth, Texas, by McClelland Engineers, Ince. Geotechnical Consultants, Houston, Texas, September 1985. Freese – Nichols, May 12, 1997.

Flow Schematic

Wastewater Flows Technical Report 1.0 Item 2.b.



LEGEND

Normal Flow Path -
 Alternate Path -

*Outfall 001 and makeup water flows are based on 2013-March 22, 2016 averages.
 () Indicates flow; all flows shown in million gallons per day average flow.
 ** Any or all Lagoons may be used in various combinations and flow to Outfall from Lagoon 8 will vary.

Attachment T-5.
 Technical Report 1.0. Item 3a.
 Additional Impoundments

Parameter	Pond # L8	Pond # CB
Use Designation: (T) (D) (C) or (E)	T	T
Associated Outfall Number	002	002
Liner Type (C) (I) (S) or (A)	None	None
Alt. Liner Attachment Reference	N/A	N/A
Leak Detection System, Y/N	N	N
Groundwater Monitoring Wells, Y/N	*	*
Groundwater Monitoring Data Attachment	*Groundwater monitoring program covered under RCRA permit 50043	
Pond Bottom Located Above The Seasonal High-Water Table, Y/N	y	y
Length (ft)	608	220
Width (ft)	278	66
Max Depth From Water Surface (ft), Not Including Freeboard	13.5	8
Freeboard (ft)	≥2	≥2
Surface Area (acres)	3.9	0.33
Storage Capacity (gallons)	10 M	1.1 M
40 CFR Part 257, Subpart D, Y/N	N	N
Date of Construction	1969	c.1975

Eastman Chemical Company
Attachment 6
Technical Report 1.0, Item 5.b.
Cooling Towers, Boilers, Once Through Waters, Etc.

Product & Product I.D. Number	Product Use ¹	Msc. Information Use (biocide, fungicide, corrosion inhibitor, etc.)	MSDS/SDS		Concentration, mg/l, etc. ⁴	MSDS/SDS Provided	List all CAS number(s) per MSDS	Product Toxicity Data * (mg/L)	Eventual Discharge Location ⁵
			Frequency of Use ²	Classification ³					
Cooling Towers									
Performax DC5506 Cooling Water Treatment	Corrosion Inhibitor	Corrosion Inhibitor	Continuous	No data available	70	y	Trade Secret	96 h LC50 - Oncorhynchus mykiss (rainbow trout), static test: 4060 mg/l, 96 h LC50 - Pimephales promelas (fathead minnow), static test: 4,670 mg/l, 48 h LC50 (Daphnia magna (Water flea)): 1,770 mg/l	002
Millsperse MS7600	Corrosion Inhibitor	Corrosion Inhibitor, polyphosphate	Continuous	No data available	54	y		96 h LC50 - Oncorhynchus mykiss (rainbow trout), static test: 4,631 mg/l, 96 h LC50 - Pimephales promelas (fathead minnow), static test: 3,780 mg/l, 48 h LC50 (Daphnia magna (water flea)) 2316 mg/l, LC50 (Daphnia pulex (water flea)): 1768 mg/l	002
Performax CC6200	Corrosion Inhibitor	Corrosion Inhibitor, admiralty	Continuous	persistent	20	y	64665-57-2	98 h LC50 (Pimephales promelas (fathead minnow)): 159.3 mg/l, 48 h EC50 (Water flea (Ceriodaphnia dubia)): 164.9 mg/l	002
Performax MX2000	Dispersant	High Temp Dispersant	Continuous	No data available	20	y		48 h EC50 (Water flea (Ceriodaphnia dubia)): 3121 mg/l	002
Biosperse CN5500	Biocide	Microbiocide	Intermittent	non-persistent	30	y	111-30-8	LD50 (Rat, male and female): 100 mg/kg, LC50 (Rat): 0.14 mg/l, LD50 (Rabbit): > 2,000 mg/kg	002
Spectrum XD3899	Microbiocide Agent	Microbiocide agent	Intermittent	N/A		y	12124-97-9	96 h LC50 (Lepomis macrochirus (Bluegill sunfish)): > 1,000 mg/l, 96 h LC50 (Oncorhynchus mykiss (rainbow trout)): > 1,000 mg/l, 48 h EC50 (Daphnia magna (Water flea)): > 1,000 mg/l	002
Amertrol HT-1009	Deposit Control Agent		Continuous	No data available	1.5	y	Trade secret	No Data available	002
Amertrol HT-3510	Deposit Control Agent		Continuous	non-persistent	1.5	y	1310-73-2	Gambusia affinis static LC50 = 125 Daphnia Components, 48 hr EC50 = 34.59-47.13	002
Drewphos CPT	Deposit Control Agent		Continuous			y	7601-54-9	Not classified	002
Enviroplus 325	Corrosion Inhibitor		Continuous	non-persistent	5	y	254504001 - (5502, 5754, 5422, 5114, 5281, 8009)	Rainbow, acute and prolonged, static 96 hr LC50 = 137 Fathead, acute and prolonged, static 96 hr LC50 = 616 Cerio acute, static 48 hr LC50 = 177	002
ChemTreat Quadspere CL4830	Corrosion Inhibitor	Cooling Water Treatment	Continuous	non-persistent	5	y	40372-66-5 7320-34-5 1310-58-3 64665-57-2 7778-53-2	Cerio, 48hr, LC50 = 947, 7-day NOEC = 63, 7-day LOEC = 125, 7-day IC25 = 83, D. magna 48hr static LC50 = 3,300 Fathead 96hr LC50 = 1649	002
Boilers (e.g., waste heat & quench, steam drums, etc.)									
Drewphos 2000	Deposition Control	Boiler Water Treatment	Continuous	non-persistent	10	y	1310-73-2, 254504001-5309	Rainbow 96 hr, LC50 = 444 Bluegill 96hr LC50 = 1508 Fathead 96 hr LC50 = 390 Daphnia 48 hr LC50 = 330	001
Drewphos 2600	Deposition Control	Boiler Water Treatment	Continuous	non-persistent	10	y	1310-73-2	Rainbow 96 hr, acute and prolonged static LC50 = 1770 Fathead 96hr, acute and prolonged, static LC50 = 2680	001
Drewphos 3000	Deposition Control	Boiler Water Treatment	Continuous	non-persistent	15	y	1310-73-2,	D. magna 48 hr acute LC50 = 8250 Fathead 96 hr acute LC50 = 8840 Rainbow trout 96 hr acute LC50 = 16,500	001
Amersite CHZ	Corrosion Inhibitor	Corrosion Inhibitor	Continuous	non-persistent	10	y	497-18-7	Rainbow trout 96 hr acute and prolonged, static LC50 = 1,053 Fathead 96 hr acute and prolonged, static LC50 = 149 Cerio 48 hr acute, static LC50 = 110	001
Amersite 2	Corrosion Inhibitor	Corrosion Inhibitor	Continuous	non-persistent	35	y	7681-57-4	Rainbow trout 96 hr acute and prolonged LC50 = 369 Daphnia 48hr acute = 833.9	001
Amersite 11	Corrosion Inhibitor	Corrosion Inhibitor Bid 64 area uses <5 gal. month. Utilities uses continuously	Continuous	non-persistent	20	y	7757-83-7, 1310-73-2, 254504001-5244	Cerio 48 hr static LC50 = 4060 Fathead 48hr static LC50 = 10,800 Fathead 96hr static LC50 = 8400	001
Amersite 61W	Corrosion Inhibitor		Continuous	non-persistent	10	y	254504004-5423	Rainbow trout 96 hr static LC50 > 100,000 Fathead 96 hr static LC50 = 66,000 Daphnia 48hr static LC50 = 6,900	001
Drewgard 2808	Deposition Control	Boiler Water Treatment	Continuous	non-persistent	20	y	7632-00-0, 1310-73-2 254504001-5754	Rainbow 96hr, static LC50 = 1770 Fathead 96hr, static LC50 = 1250	001
Drewgard 315	Deposition Control	Boiler Water Treatment	Continuous	non-persistent	25	y	10102-40-6 64665-57-2 1310-73-2	Gambusia 96 hr static LC50 = 125000 Daphnia 48hr EC50 = 34.59 - 47.13	001

Eastman Chemical Company
Attachment 6
Technical Report 1.0, Item 5.b.
Cooling Towers, Boilers, Once Through Waters, Etc.

Product & Product I.D. Number	Product Use ¹	Msc. Information Use (biocide, fungicide, corrosion inhibitor, etc.)	MSDS/SDS		Concentration, mg/L, etc. ⁴	MSDS/SDS Provided	List all CAS number(s) per MSDS	Product Toxicity Data * (mg/L)	Eventual Discharge Location ⁵
			Frequency of Use ²	Classification ³					
BT5010	Boiler Water Treatment	Boiler Water Treatment	Continuous	non-persistent	100 - 200 ppm	y	1310-73-2	no testing on this product	002
ChemTreat BL153	Deposition Control	Steam Line Treatment	Continuous	non-persistent	10		1336-21-6	Cerio 48hr LC50, 131 Fathead 96 hr LC50, 8.2	002
ChemTreat BL1260	Deposition Control	Boiler Water Treatment	Continuous	non-persistent	5		497-18-7	Cerio 48hr LC50, 159.3 Fathead 96hr LC50, 158.4	002
ChemTreat BL1344	Deposition Control	Boiler Water Treatment	Continuous	non-persistent	5		14860-53-8	Cerio 48hr LC50, 1149	002
Once-Through Water Treatment									
Chlorine Gas	Biocide	Biocide	Continuous	non-persistent	1	y	7782-50-5	D. magna 46 hr acute LC50 = 0.017 Bluegill 96 hr acute LC50 = 0.44 Channel catfish 96 hr acute LC50 = 0.07 Yellow perch 1 hr acute LC50 = 0.88	001
Sodium Hypochlorite 7 - 15%, bleach Petra, Olin and VWR vendors	Biocide	Biocide	Continuous	non-persistent	12	y	7681-52-9	no data	001
Other water treatment chemicals (closed loop, etc.) to Outfall 001 or Outfall 002									
Env. Services Wastewater Treatment									
Zalta MF5264	Flocculant	Flocculant, Dewatering and Clarifiers at ASP	Continuous	non-persistent	30	y	Trade Secret	Daphnia, 48 hrs, acute, EC50>10-100 Mysidopsis bahia 96 hrs, EC50=3.06	002
Amerfloc 490	Flocculant	Flocculant, Dewatering and Clarifiers at ASP	Continuous	non-persistent	100	y	not hazardous*	Danio rerio, acute 96 hr LC50 >10	002
Burst WF7300	Foam Control Agent	Antifoam	Continuous	non-persistent	100	y	not hazardous*	Dephnia magna 48 hrs, acute EC50 >10 Pimephales promelas, 96 h, 3563 Oncorhynchus mykiss, 96 h, >1000 mg/L	002
Ammonium Hydroxide	pH adjustment	WWTP for inlet ammonia, PM 2043	Continuous	non-persistent	20	y	1336-21-6	Fathead 24 hr, acute LC50 = 17 Goldfish 24 hr, acute LC50 = 17 Mosquitofish, 24 hr, acute, LC50 = 18 Catfish 24 hr, acute, LC50 = 2.36 Minnow, 24hr, acute LC50 = 23.02 Daphnia, 25 hr, acute LC50 = 60 Cerio 48 hr, acute, LC50 > 0 Daphnia, 50 hr, acute LC50 = 32 Daphnia, 100 hr, acute LC50 = 20	002
Chlorine	pH adjustment	WWTP, process pH adjustments	Continuous	non-persistent	99	y	7782-505	Oncorhynchus mykiss, 96hr, acute, LC50 = 14 Daphnia, 48hr, acute LC50 = 0.11	002
Sulfuric Acid	Influent pH adjustment	WWTP inlet use	Continuous	non-persistent	30	y	7664-93-9	Bluegill, 48 hr acute, LC50 = 49 Flounder 48 hr acute, LC50 = 100-330	002
Phosphoric Acid Soln 35%	Influent Nutrient Control	WWTP inlet use	Continuous	non-persistent	35	y	7664-38-2	Mosquitofish 96 hr, LC50 = 138	002
Acti-Min Kaolin	Prevent Sludge Cohesion		Continuous	non-persistent	100 lb/hr		1332-58-7 14808-60-7 13463-6-7	Not hazardous	002
Carmeuse - Quicklime	Prevent Sludge Cohesion		Continuous	non-persistent	50 lb/hr	y	1305-788 1309-48-4 14808-60-7	Due to high pH of product there may be some impact on aquatic life if exposed	002
Cellite (diatomaceous earth)	Filters ash		Continuous	non-persistent	NA		68855-54-9 14464-46-1 14808-60-7	Not hazardous	002
EC-1107A	Corrosion Inhibitor		Continuous	non-persistent	10 - 50 ppm		141-43-5 5332-73-0	LC 50 Pimephales promelas (fathead minnow) 96 hr: 1046 mg/l; LC50 Ceriodaphnia dubia 48 hr: 141 mg/l	002
Cat-Floc 8103 Plus	Water Treatment	Deemulsifier	Continuous	non-persistent	40 - 100 ppm	y	not hazardous	LC50 Rainbow Trout 96 hrs: 0.85 mg/l LC50 Inland Silverside 96 hrs: >5000 mg/l LC50 Zebra Danio 96 hrs: 10-100 mg/l LC50 Fathead Minnow 96 hrs: 3.29 mg/l LC50 Daphnia magna 48 hrs: 2.06 mg/l LC 50 Ceriodaphnia dubia 48 hrs: 2.5 mg/l LC 50 Ceriodaphnia dubia 48 hrs: 2.5 mg/l LC50 Daphnia magna 48 hrs (water with DOC): 10-100 mg/l LOEC Ceriodaphnia dubia 7 days: 2.5 mg/l EC50 Ceriodaphnia dubia 7 days: 1.33 mg/l EC25/IC25 Ceriodaphnia dubia 7 days: 0.96 mg/l NOEC Ceriodaphnia dubia 7 days: 1.25 mg/l	002
EC3461A	Antifoulant	Caustic additive	Continuous	non-persistent	50 - 150 ppm	y	107-15-3	no testing on this product	002

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Product & Product I.D. Number	Product Use ¹	Msc. Information Use (biocide, fungicide, corrosion inhibitor, etc.)	MSDS/SDS		Concentration, mg/L, etc. ⁴	MSDS/SDS Provided	List all CAS number(s) per MSDS	Product Toxicity Data * (mg/L)	Eventual Discharge Location ⁵
			Frequency of Use ²	Classification ³					
COMPTRENE® EC3144B	Antifoulant		Continuous	non-persistent	30 - 100 ppm	y	64742-94-5 1330-20-7 112-34-5 91-20-3 100-41-4 95-63-6	no testing on this product	002
EC3332W	Antifoulant		Continuous	non-persistent	20 - 50 ppm	y	64741-44-2 64742-47-8 25322-69-4 61791-00-2	LC50 (Fish) 96 hr: 4.9 to > 1000 mg/l EC50 (Daphnia & Other Aquatic Invertebrates) 48 hr & 72 hr: 105.8 mg/l - > 1000 mg/l EC50 (Algae) 48 hr: > 1000 mg/l Toxicity to Bacteria: > 1000 mg/l	002
EC3011A	Antifoulant		Continuous	non-persistent	5 - 10 ppm	y	100-37-8	LC50 Rainbow Trout 96 hr: > 1000 mg/l LC50 Bluegill Sunfish 96 hr: >1000 mg/l LC50 Fathead Minnow 96 hr: >1000 mg/l LC50 Daphnia Magna 48 hr: >1000 mg/l	002
EC3072A	Antifoulant		Continuous	non-persistent	20 - 50 ppm	y	64742-94-5 141-43-5 91-20-3 71-36-3 95-63-6	no testing on this product	002
EC1044A	Corrosion Inhibitor		Continuous	non-persistent	5 - 20 ppm	y	141-43-5	LC50 Fathead Minnow 96 hr: 125 mg/l; LC50 Daphnia magna 48 hr: 33 mg/l	002
EC5210A	Fuel Antioxidant		Continuous	non-persistent	5 - 20 ppm	y	101-96-2	LC50 Rainbow Trout 96 hr: 0.13 mg/l LC50 Bluegill Sunfish 96 hr: 0.18 mg/l LC50 Fathead Minnow 96 hr: 0.13 mg/l LC50 Daphnia magna 48 hr: 1.4 mg/l	002
Sodium Hydroxide	pH adjustment	Boiler Water Treatment	2x/year	N/A	As needed	Y	1310-73-2	LC50 = 45.4 mg/L (96 hr, Oncorhynchus mykiss) 40.4 mg/L EC50 Ceriodaphnia sp. 48h	002
EC3267A	Antioxidant/antipolymerant	DA-404, 409, 405	intermittent	non-persistent	As needed	y	64742-94-5 3710-84-7 91-20-3 95-63-6	LC50 Oncorhynchus mykiss (rainbow trout): 3.5 mg/l Exposure time: 96 h Diethylhydroxylamine LC50 Pimephales promelas (fathead minnow): > 134 mg/l LC50 Fish: 0.202 mg/l Exposure time: 96 h EC50 Daphnia magna (Water flea): 8.2 mg/l Exposure time: 48 h Daphnia magna (Water flea): 0.5 mg/l Exposure time: 48 h EC50 Pseudokirchneriella subcapitata (algae): > 101 mg/l Exposure time: 72 h Desmodesmus subspicatus (green algae): 0.13 mg/l Exposure time: 72 h	002
EC3269A	Antifoulant	DA-202	intermittent	non-persistent	As needed	y	64742-94-5 91-20-3 95-63-6 647-65-0	LC50 : 3.5 mg/l Exposure time: 96 h LC50 : 0.202 mg/l Exposure time: 96 h	002
EC3205A	Dispersant/antifoulant	GB-201	intermittent	No Data Available	As needed	y	64742-94-5 3710-84-7 95-63-6 91-20-3	LC50 Fish: 1.9 mg/l Exposure time: 96 hr LC50 Crustacean: 1.9 mg/l Exposure time: 48 hrs	002
EC3071A	Pygas stabilizer	Additive only used when sending C4's to tank farm	intermittent	non-persistent	As needed	y	1330-20-7 128-37-0 100-41-4 78-83-1	LC50 Danio rerio (zebra fish): >0.57 mg/l Exposure time: 96 h EC50 Daphnia: 1.81 mg/l Exposure time: 48 h EC50 Daphnia magna (Water flea): 0.48 mg/l Exposure time 48 h	002

* Product toxicity data specific to fish and aquatic invertebrate organisms

¹ biocide, fungicide, corrosion inhibitor, etc.

² 2hrs/day once ever two weeks, every two weeks, daily, etc.

³ non-persistent, persistent, bioaccumulative

⁴ Concentration of whole product in waste stream or concentration of active ingredient in waste stream

⁵ Reservoirs = 001, Outfall 002 = wastewater treatment plant or lagoon system

Abbreviations Used in Toxicity Section Above

concentrations in mg/L

growth = grow

reproduction = repro

survival = surv

Ceriodaphnia dubia = Cerio


Daphnia Magna = D. Magna

Fathead minnow = fathead

mortality = mort

Daphnia Pulex = D. Pulex

Pimephales promelas = P. Promelas

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Performax™ DC5506 COOLING WATER TREATMENT
™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Cooling water treatment

Details of the supplier of the safety data sheet Solenis LLC 2475 Pinnacle Drive Wilmington, DE 19803 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Corrosive to metals : Category 1

GHS label elements


Hazard pictograms :



Signal word : Warning

Hazard statements : H290 May be corrosive to metals.

Precautionary statements : **Prevention:**
P234 Keep only in original container.
Response:
P390 Absorb spillage to prevent material damage.
Storage:
P406 Store in corrosive resistant container with a resistant inner

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liner.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture


Components

Chemical name	CAS-No.	Classification	Concentration (%)
PHOSPHONIC ACID DERIVATIVE	Trade Secret	Met. Corr. 1; H290 Acute Tox. 4; H302 Eye Dam. 1; H318	>= 5 - < 10
ORGANIC ACID	Trade Secret	Met. Corr. 1; H290 Eye Irrit. 2A; H319	>= 5 - < 10

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
- In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
If eye irritation persists, consult a specialist.
- If swallowed : Obtain medical attention.
Do NOT induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms : Signs and symptoms of exposure to this material through

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and effects, both acute and delayed

breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Excessive levels of phosphorus can cause low blood calcium, with tetany and convulsions.

Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
Oxides of phosphorus

Specific extinguishing methods : Product is compatible with standard fire-fighting agents.

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.


Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

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SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.
Container hazardous when empty.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Electrical installations / working materials must comply with the technological safety standards.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters


Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
ORGANIC ACID	Trade Secret	TWA (aerosol)	10 mg/m ³	US WEEL

- Engineering measures** : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

- Hand protection
Material : nitrile rubber


- Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

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- Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.
- Skin and body protection : Wear as appropriate:
Impervious clothing
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
- Hygiene measures : Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Colour : light yellow
- Odour : No data available
- Odour Threshold : No data available
- pH : 2.5
Concentration: 1 %
- Melting point/freezing point : No data available
- Boiling point/boiling range : > 212 °F / 100 °C
- Flash point : Not applicable
- Evaporation rate : No data available
- Flammability (solid, gas) : No data available
- Self-ignition : No data available
- Upper explosion limit / Upper flammability limit : No data available
- Lower explosion limit / Lower flammability limit : No data available
- Vapour pressure : 23.3333333 hPa (68 °F / 20 °C)


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Calculated Vapor Pressure

Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	1.22 g/cm ³ (77 °F / 25 °C)
Solubility(ies)		
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Oxidizing properties	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	Product will not undergo hazardous polymerization.
Conditions to avoid	:	temperature extremes Freezing temperatures.
Incompatible materials	:	Alkali metals Alkaline earth metals Oxidizing agents steel strong alkalis
Hazardous decomposition products	:	Carbon monoxide Carbon dioxide (CO ₂) Oxides of phosphorus

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SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Components:

PHOSPHONIC ACID DERIVATIVE:

Acute oral toxicity : LD50 (Rat): 1,878 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 6,000 mg/kg

ORGANIC ACID:

Acute oral toxicity : LD50 (Rat): > 6,500 mg/kg

Acute inhalation toxicity : LC 50 (Rat): > 1,979 mg/m³
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: No adverse effect has been observed in acute inhalation toxicity tests.

Acute dermal toxicity : LD50 (Rat): > 4,000 mg/kg
Assessment: No adverse effect has been observed in acute dermal toxicity tests.
Remarks: Based on similar product.

Skin corrosion/irritation

Not classified based on available information.

Components:

PHOSPHONIC ACID DERIVATIVE:

Result : Slightly irritating to skin

ORGANIC ACID:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Not irritating to skin


Serious eye damage/eye irritation

Not classified based on available information.

Product:

Result : Mildly irritating to eyes

Remarks : Unlikely to cause eye irritation or injury.

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Components:

PHOSPHONIC ACID DERIVATIVE:

Result : Corrosive to eyes

ORGANIC ACID:

Result : Irritating to eyes

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Components:

ORGANIC ACID:

Genotoxicity in vitro : Test Type: Ames test
 Test system: Salmonella typhimurium
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 471
 Result: negative

Test Type: In vitro mammalian cell gene mutation test
 Test system: Chinese hamster lung cells
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 476
 Result: negative
 GLP: yes


Test Type: Chromosome aberration test in vitro
 Test system: Chinese hamster lung cells
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 473
 Result: negative
 GLP: yes

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 4,060 mg/l
Exposure time: 96 h
Test Type: static test


LC50 (Pimephales promelas (fathead minnow)): 4,670 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 1,770 mg/l
Exposure time: 48 h
Test Type: static test

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

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Components:

PHOSPHONIC ACID DERIVATIVE:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 368 mg/l
Exposure time: 96 h

LC50 (Pimephales promelas (fathead minnow)): 868 mg/l
Exposure time: 96 h

ORGANIC ACID:

Toxicity to fish : (Danio rerio (zebra fish)): > 1,042 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
GLP: yes


Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,071 mg/l
Exposure time: 48 h
Test Type: semi-static test
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : (Desmodesmus subspicatus (green algae)): 140 mg/l
End point: EC 50
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

Toxicity to fish (Chronic toxicity) : NOEC (Danio rerio (zebra fish)): > 1,042 mg/l
Exposure time: 14 d
Test Type: semi-static test
Method: OECD Test Guideline 204
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia (water flea)): 104 mg/l
End point: Reproduction Test
Exposure time: 21 d
Test Type: semi-static test
Method: OECD Test Guideline 211
GLP: yes

Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l
Exposure time: 3 h
Test Type: Static
Method: OECD Test Guideline 209
GLP: yes

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Persistence and degradability

Product:

Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days < 200 mg/l

Chemical Oxygen Demand (COD) : 410,500 mg/l
Method: Chemical oxygen demand

Components:

ORGANIC ACID:

Biodegradability : Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

Biodegradation: 17 %
Exposure time: 28 d
Method: OECD Test Guideline 302B

Bioaccumulative potential

Components:

ORGANIC ACID:

Partition coefficient: n-octanol/water : log Pow: -1.36 (77 °F / 25 °C)

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available


SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.

Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.

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Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN number : UN 3265
 Proper shipping name : Corrosive liquid, acidic, organic, n.o.s. (PHOSPHONIC ACID DERIVATIVE)
 Class : 8
 Packing group : III
 Packing instruction (cargo aircraft) : 856
 Packing instruction (passenger aircraft) : 852

IMDG-Code

UN number : UN 3265
 Proper shipping name : CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (PHOSPHONIC ACID DERIVATIVE)
 Class : 8
 Packing group : III
 EmS Code : F-A, S-B
 Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.


National Regulations

49 CFR

UN number : UN 3265
 Proper shipping name : Corrosive liquid, acidic, organic, n.o.s. (PHOSPHONIC ACID DERIVATIVE)
 Class : 8
 Packing group : III
 ERG Code : 153
 Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Corrosive to metals

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : This product contains one or more components that are not on the Canadian DSL and have annual quantity limits.
- ENCS : Not in compliance with the inventory
- KECI : Not in compliance with the inventory
- PICCS : Not in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory

TSCA list


No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

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Full text of H-Statements


H290 : May be corrosive to metals.
H302 : Harmful if swallowed.
H318 : Causes serious eye damage.
H319 : Causes serious eye irritation.

Full text of other abbreviations

Acute Tox. : Acute toxicity
Eye Dam. : Serious eye damage
Eye Irrit. : Eye irritation
Met. Corr. : Corrosive to metals
US WEEL : USA. Workplace Environmental Exposure Levels (WEEL)
US WEEL / TWA : 8-hr TWA

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

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Key literature references and sources of data


SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Millspers[™] MS7600 CORROSION INHIBITOR
[™] Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Industrial chemical

Details of the supplier of the safety data sheet Solenis LLC 2475 Pinnacle Drive Wilmington, DE 19803 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

GHS label elements

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS


Substance / Mixture : Mixture

Components

No hazardous ingredients

SECTION 4. FIRST AID MEASURES

General advice : No hazards which require special first aid measures.

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- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
- In case of eye contact : Remove contact lenses.
Protect unharmed eye.
- If swallowed : Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : No symptoms known or expected.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO₂)
Dry chemical
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Oxides of phosphorus
Sodium oxides

Oxides of phosphorus
Sodium oxides
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Standard procedure for chemical fires.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

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- Personal precautions, protective equipment and emergency procedures : Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Smoking, eating and drinking should be prohibited in the application area. For personal protection see section 8.
- Conditions for safe storage : Electrical installations / working materials must comply with the technological safety standards.
- Materials to avoid : No materials to be especially mentioned.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION


Components with workplace control parameters

Contains no substances with occupational exposure limit values.

- Engineering measures** : General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

- Respiratory protection : No personal respiratory protective equipment normally required.
- Hand protection
Material : nitrile rubber
- Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.
- Skin and body protection : Wear as appropriate:

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Safety shoes
Wear resistant gloves (consult your safety equipment supplier).

Hygiene measures : General industrial hygiene practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : clear, colourless

Odour : No data available

Odour Threshold : No data available

pH : 5.6

Melting point/freezing point : No data available

Boiling point/boiling range : 212 °F / 100 °C
(1,013.333333 hPa)
Calculated Phase Transition Liquid/Gas

Flash point : does not flash

Evaporation rate : > 1
Ethyl Ether

Flammability (solid, gas) : No data available

Self-ignition : No data available

Upper explosion limit / Upper flammability limit : No data available


Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : 23.3333333 hPa (68 °F / 20 °C)
Calculated Vapor Pressure

Relative vapour density : > 1
AIR=1

Relative density : No data available

Density : 1.300 g/cm³ (77.00 °F / 25.00 °C)

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Solubility(ies)
 Water solubility : No data available

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Decomposition temperature : No data available

Viscosity
 Viscosity, dynamic : < 100 cps (77 °F / 25 °C)
 Viscosity, kinematic : No data available

Oxidizing properties : No data available

Particle size : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

Conditions to avoid : excessive heat
Exposure to moisture

Incompatible materials : Strong oxidizing agents

Hazardous decomposition products : Oxides of phosphorus
Sodium oxides

Hazardous decomposition products : Oxides of phosphorus
Sodium oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity


Not classified based on available information.

Skin corrosion/irritation

Not classified based on available information.

Serious eye damage/eye irritation

Not classified based on available information.

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Product:

Remarks : Unlikely to cause eye irritation or injury.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.


Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

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SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 4,631 mg/l
Exposure time: 96 h
Test Type: static test
- LC50 (Pimephales promelas (fathead minnow)): 3,780 mg/l
Exposure time: 96 h
Test Type: static test
- Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 2,316 mg/l
Exposure time: 48 h
Test Type: static test
- LC50 (Daphnia pulex (Water flea)): 1,768 mg/l
Exposure time: 48 h
Test Type: static test

Ecotoxicology Assessment

- Acute aquatic toxicity : Not classified based on available information.
- Chronic aquatic toxicity : Not classified based on available information.

Persistence and degradability

Product:

- Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days
7.5 mg/l
- Chemical Oxygen Demand (COD) : 8.0 mg/l
Method: Chemical oxygen demand

Bioaccumulative potential

No data available


Mobility in soil

No data available

Other adverse effects

Product:

- Additional ecological information : No data available

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SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

Not regulated as a dangerous good

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity


This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

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California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.


No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

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Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet


Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports


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other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Performax™ CC6200 CORROSION INHIBITOR
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Industrial chemical

Details of the supplier of the safety data sheet Solenis LLC 2475 Pinnacle Drive Wilmington, DE 19803 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)


Acute toxicity (Oral) : Category 4
Skin corrosion : Category 1
Serious eye damage : Category 1
Reproductive toxicity : Category 2

GHS label elements

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H361d Suspected of damaging the unborn child.

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Precautionary Statements :

Prevention:

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

- P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
- P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
- P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
- P308 + P313 IF exposed or concerned: Get medical advice/ attention.
- P363 Wash contaminated clothing before reuse.

Storage:

- P405 Store locked up.

Disposal:

- P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.


SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (%)
2-methyl benzyl triazole	64665-57-2	Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318 Repr. 2; H361d	>= 50 - < 60

Actual concentration is withheld as a trade secret


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SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Consult a physician.
Show this material safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : Move to fresh air.
If breathed in, move person into fresh air.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : If on skin, rinse well with water.
Wash contaminated clothing before re-use.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : Get medical attention immediately.
Do NOT induce vomiting.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : No symptoms known or expected.
Harmful if swallowed.
Causes serious eye damage.
Causes severe burns.
Harmful if swallowed.
Causes serious eye damage.
Suspected of damaging the unborn child.
Causes severe burns.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Unsuitable extinguishing media : High volume water jet

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- Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : nitrogen oxides (NOx)
Carbon monoxide
Carbon dioxide (CO2)
hydrogen cyanide in reducing atmospheres
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Ensure adequate ventilation.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapors/dust.
Do not smoke.
Container hazardous when empty.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated

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place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment


Respiratory protection : A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.
Maintain eye wash station in immediate work area.

Skin and body protection : Wear as appropriate:
Impervious clothing
Chemical resistant apron
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).

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Discard gloves that show tears, pinholes, or signs of wear.

Hygiene measures : Wash hands before breaks and at the end of workday.
When using do not eat or drink.
Ensure that eyewash stations and safety showers are close to the workstation location.
When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : clear, amber, red brown

Odor : No data available

Odor Threshold : No data available

pH : 11.5 - 14

Melting point/freezing point : 7 °F / -14 °C

Boiling point/boiling range : ca. 212 °F / 100 °C

Flash point : > 199.99 °F / > 93.33 °C

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Self-ignition : > 932 °F / > 500 °C

Upper explosion limit / Upper flammability limit : No data available


Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : 0.04 hPa (68 °F / 20 °C)

Relative vapor density : > 1
AIR=1

Relative density : 1.187

Density : 1.188 g/cm³

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Solubility(ies)
Water solubility : completely miscible
Solubility in other solvents : No data available
Partition coefficient: n-octanol/water : No data available
Decomposition temperature : No data available
Viscosity
Viscosity, dynamic : No data available
Viscosity, kinematic : No data available
Oxidizing properties : No data available
Particle characteristics
Particle size : No data available
Particle Size Distribution : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.
Chemical stability : Stable under recommended storage conditions.
Possibility of hazardous reactions : Product will not undergo hazardous polymerization.
Conditions to avoid : No data available
Incompatible materials : strong mineral acids
Strong oxidizing agents
Hazardous decomposition products : Hydrogen cyanide (hydrocyanic acid)
Nitrogen oxides (NOx)
Carbon monoxide
Carbon dioxide (CO2)


SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if swallowed.

Components:

2-methyl benzyl triazole:

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Acute oral toxicity : LD50 (Rat, female): 735 mg/kg

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Assessment: Not classified as acutely toxic by dermal absorption under GHS.

Skin corrosion/irritation

Causes severe burns.

Product:

Result : Corrosive to skin

Remarks : Causes severe skin burns and eye damage.

Components:

2-methyl benzyl triazole:

Result : Causes burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Result : Corrosive to eyes

Remarks : May cause irreversible eye damage.

Components:

2-methyl benzyl triazole:

Result : Corrosive to eyes

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Product:

Result : Did not cause sensitization on laboratory animals.


Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Suspected of damaging the unborn child.

Components:

2-methyl benzyl triazole:

Reproductive toxicity - Assessment : Some evidence of adverse effects on development, based on animal experiments.

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available


SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 159.3 mg/l
Exposure time: 98 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Water flea (Ceriodaphnia dubia)): 164.9 mg/l
Exposure time: 48 h
Test Type: static test

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Ecotoxicology Assessment

- Acute aquatic toxicity : Not classified based on available information.
- Chronic aquatic toxicity : Chronic aquatic toxicity Category 2; Toxic to aquatic life with long lasting effects.

Components:

2-methyl benzyl triazole:

- Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): > 173 mg/l
Exposure time: 96 h
- LC50 (Oncorhynchus mykiss (rainbow trout)): ca. 25 mg/l
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 280 mg/l
Exposure time: 48 h
- Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 26.2 mg/l
Exposure time: 72 h
Test Type: Growth inhibition
- EbC50 (Pseudokirchneriella subcapitata (green algae)): 32 mg/l
Exposure time: 96 h
Test Type: Growth inhibition
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10 (Daphnia magna (Water flea)): 0.4 mg/l
Exposure time: 21 d
Test Type: semi-static test
Method: OECD Test Guideline 211
Remarks: Information given is based on data obtained from similar substances.

Persistence and degradability


Product:

- Biodegradability : Remarks: Not readily biodegradable.

Components:

2-methyl benzyl triazole:

- Biodegradability : Result: Not readily biodegradable.
Method: OECD Test Guideline 301F

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Bioaccumulative potential

Components:

2-methyl benzyl triazole:

Partition coefficient: n-octanol/water : log Pow: 0.658

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods


- Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.
- Dispose of in accordance with all applicable local, state and federal regulations.
- Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

- UN number : UN 3267
- Proper shipping name : Corrosive liquid, basic, organic, n.o.s. (TRIAZOLE DERIVATIVE)
- Class : 8
- Packing group : II
- Packing instruction (cargo aircraft) : 855
- Packing instruction (passenger aircraft) : 851

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IMDG-Code

UN number : UN 3267
 Proper shipping name : CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (TRIAZOLE DERIVATIVE)
 Class : 8
 Packing group : II
 EmS Code : F-A, S-B
 Marine pollutant : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

UN number : UN 3267
 Proper shipping name : Corrosive liquid, basic, organic, n.o.s. (TRIAZOLE DERIVATIVE)
 Class : 8
 Packing group : II
 ERG Code : 153
 Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity


This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Acute toxicity (any route of exposure)
 Reproductive toxicity
 Skin corrosion or irritation
 Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

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The ingredients of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory
- NZIOC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

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Full text of H-Statements

- H302 : Harmful if swallowed.
- H314 : Causes severe skin burns and eye damage.
- H318 : Causes serious eye damage.
- H361d : Suspected of damaging the unborn child.

Full text of other abbreviations

- Acute Tox. : Acute toxicity
- Eye Dam. : Serious eye damage
- Repr. : Reproductive toxicity
- Skin Corr. : Skin corrosion

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN -

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Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Material Safety Data Sheet

Key literature references and sources of data


SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

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Performax™ MX2000 COOLING WATER TREATMENT ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 859785		Version: 1.6

SECTION 1. IDENTIFICATION

Product identifier

Trade name : Performax™ MX2000 COOLING WATER TREATMENT
™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries

Recommended use of the chemical and restrictions on use

Details of the supplier of the safety data sheet Solenis LLC 2475 Pinnacle Drive Wilmington, DE 19803 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

GHS label elements

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS


Substance / Mixture : Mixture

Components

No hazardous ingredients

SECTION 4. FIRST AID MEASURES

General advice : No hazards which require special first aid measures.

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- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
- In case of eye contact : Remove contact lenses.
Protect unharmed eye.
- If swallowed : Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : No symptoms known or expected.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : No hazardous combustion products are known
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Standard procedure for chemical fires.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and : Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

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- emergency procedures : Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
- Conditions for safe storage : Electrical installations / working materials must comply with the technological safety standards.
- Materials to avoid : No materials to be especially mentioned.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION


Components with workplace control parameters

Contains no substances with occupational exposure limit values.

- Engineering measures** : General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

- Respiratory protection : No personal respiratory protective equipment normally required.
- Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.
- Skin and body protection : Wear as appropriate:
Safety shoes
Wear resistant gloves (consult your safety equipment supplier).

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Hygiene measures : General industrial hygiene practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : colourless, light yellow

Odour : mild

Odour Threshold : No data available

pH : ca. 2.5

Melting point/freezing point : 32 °F / -0.00 °C

Boiling point/boiling range : > 212 °F / 100 °C
(1013 hPa)

Flash point : does not flash

Evaporation rate : < 1
n-Butyl Acetate

Flammability (solid, gas) : No data available

Self-ignition : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : 17.00 mmHg (68.00 °F / 20.00 °C)

Relative vapour density : < 1
AIR=1


Relative density : 1.2 (77.00 °F / 25.00 °C)

Density : 1.2 g/cm³ (77.0 °F / 25.0 °C)

Solubility(ies)

Water solubility : completely soluble

Solubility in other solvents : No data available

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Partition coefficient: n-octanol/water : No data available

Decomposition temperature : No data available

Viscosity
Viscosity, dynamic : 100 - 300 mPa.s

Viscosity, kinematic : No data available

Oxidizing properties : No data available

Molecular weight : 4,500 g/mol

Particle size : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

Incompatible materials : Strong oxidizing agents

Hazardous decomposition products : Carbon monoxide
Carbon dioxide (CO₂)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Skin corrosion/irritation

Not classified based on available information.

Serious eye damage/eye irritation

Not classified based on available information.


Product:

Remarks : Unlikely to cause eye irritation or injury.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

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Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity


Product:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 3,121 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
GLP: no
Remarks: see user defined free text

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

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Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.


National Regulations

49 CFR

Not regulated as a dangerous good

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.


The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : Not in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory
- NZIOC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

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SECTION 16. OTHER INFORMATION

Further information

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Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative


Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data

SOLENIS Internal data


SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Biosperse™ CN5500 MICROBIOCIDE
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Biocide

Details of the supplier of the safety data sheet Solenis LLC 2475 Pinnacle Drive Wilmington, DE 19803 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity (Oral) : Category 3
Acute toxicity (Inhalation) : Category 2
Skin corrosion : Category 1B
Serious eye damage : Category 1
Respiratory sensitisation : Category 1
Skin sensitisation : Category 1
Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

GHS label elements

Hazard pictograms : 

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Signal word : Danger

Hazard statements : H301 Toxic if swallowed.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H330 Fatal if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.

Precautionary statements : **Prevention:**
P260 Do not breathe mist or vapours.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284 Wear respiratory protection.


Response:
P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/ doctor.
P363 Wash contaminated clothing before reuse.

Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture


Components

Chemical name	CAS-No.	Classification	Concentration (%)
GLUTARALDEHYDE	111-30-8	Acute Tox. 3; H301 Acute Tox. 2; H330 Skin Corr. 1B; H314 Eye Dam. 1; H318 Resp. Sens. 1; H334 Skin Sens. 1A; H317 STOT SE 3; H335	>= 50 - < 60

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Symptoms of poisoning may appear several hours later.
Do not leave the victim unattended.
- If inhaled : Move to fresh air.
Call a physician or poison control centre immediately.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.
- In case of skin contact : Remove contaminated clothing. If irritation develops, get medical attention.
If on skin, rinse well with water.
Wash contaminated clothing before re-use.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : Get medical attention immediately.
Do NOT induce vomiting.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and : Toxic if swallowed.
May cause an allergic skin reaction.

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delayed Causes serious eye damage.
Fatal if inhaled.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause respiratory irritation.
Causes severe burns.
No symptoms known or expected.


Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.
Use personal protective equipment.
Ensure adequate ventilation.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

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Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Advice on safe handling : Avoid formation of aerosol.
Provide sufficient air exchange and/or exhaust in work rooms.
Do not breathe vapours/dust.
Do not smoke.
Container hazardous when empty.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Prevent unauthorized access.
Electrical installations / working materials must comply with the technological safety standards.


Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
GLUTARALDEHYDE	111-30-8	C	0.2 ppm 0.8 mg/m ³	NIOSH REL
		C	0.2 ppm 0.8 mg/m ³	OSHA P0
		C	0.05 ppm	ACGIH

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or

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apparent adverse effects.

Personal protective equipment

Respiratory protection : A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

In the case of vapour formation use a respirator with an approved filter.

Hand protection

Material : Nitrile rubber

Remarks

: Nitrile rubber butyl-rubber
The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection

: Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.
Maintain eye wash station in immediate work area.


Skin and body protection

: Wear as appropriate:
Impervious clothing
Chemical resistant apron
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.

Hygiene measures

: Avoid contact with skin, eyes and clothing.
Wash hands before breaks and immediately after handling the product.
When using do not eat or drink.
Ensure that eyewash stations and safety showers are close to the workstation location.
When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance : Aqueous solution

Colour : yellow, colourless

Odour : characteristic, fruity, pungent

Odour Threshold : No data available

pH : 3.1 - 4.5

Melting point/freezing point : -0.40 - 3 °F / -18 - -16 °C

Boiling point/boiling range : 213.3 °F / 100.7 °C

Flash point : does not flash

Evaporation rate : 1.0
n-Butyl Acetate

Flammability (solid, gas) : No data available

Self-ignition : >
437 °F / 225 °C

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : 0.2 hPa (68 °F / 20 °C)
Method: OECD Test Guideline 104

Relative vapour density : 1.1
(Air = 1.0)

Relative density : 1.129 (68 °F / 20 °C)


Density : ca. 1.129 g/cm³ (68 °F / 20 °C)

Solubility(ies)
Water solubility : completely soluble

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : log Pow: -0.333

Decomposition temperature : No data available

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Viscosity
 Viscosity, dynamic : 15.4 mPa.s (68 °F / 20 °C)
 Method: Brookfield

 Viscosity, kinematic : 20.3 mm²/s (68 °F / 20 °C)

 Oxidizing properties : No data available

 Particle size : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

 Chemical stability : Stable under recommended storage conditions.

 Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

 Conditions to avoid : excessive heat

 Incompatible materials : aluminum
 Amines
 Ammonia
 Carbon steel
 Copper
 Iron
 Mild steel
 Strong acids
 strong alkalis
 Strong oxidizing agents

 Hazardous decomposition products : Carbon monoxide
 Carbon dioxide (CO₂)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity


Toxic if swallowed.
 Fatal if inhaled.

Components:

GLUTARALDEHYDE:

Acute oral toxicity : LD50 (Rat, male and female): 100 mg/kg
 Method: OECD Test Guideline 401

 Acute inhalation toxicity : LC50 (Rat): 0.14 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist

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Method: OECD Test Guideline 403

Assessment: Corrosive to the respiratory tract.

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

Skin corrosion/irritation

Causes severe burns.

Product:

Remarks : May cause skin irritation in susceptible persons.
Causes severe skin burns and eye damage.

Components:

GLUTARALDEHYDE:

Result : Corrosive after 3 minutes to 1 hour of exposure

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Result : Corrosive to eyes

Remarks : May cause irreversible eye damage.

Components:

GLUTARALDEHYDE:

Result : Corrosive to eyes

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Product:


Remarks : May cause allergic skin reaction.

Components:

GLUTARALDEHYDE:

Result : May cause sensitisation by inhalation.

Result : The product is a skin sensitiser, sub-category 1A.

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Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

May cause respiratory irritation.

Components:

GLUTARALDEHYDE:

Assessment : May cause respiratory irritation.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:


Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 24 mg/l

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Exposure time: 96 h
Method: OECD Test Guideline 203

LC50 (Pimephales promelas (fathead minnow)): 10.8 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

LC50 (Lepomis macrochirus (Bluegill sunfish)): 18.8 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

LC50 (Fish): > 10 - 100 mg/l
Exposure time: 96 h
Remarks: Information taken from reference works and the literature.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Invertebrates (Invertebrates)): > 10 - 100 mg/l
Exposure time: 48 h
Remarks: Information taken from reference works and the literature.

Toxicity to algae/aquatic plants : IC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (Bacteria): > 34 mg/l
: IC50 (activated sludge): > 100 mg/l
Method: OECD Test Guideline 209

Ecotoxicology Assessment

Acute aquatic toxicity : Acute aquatic toxicity Category 3; Harmful to aquatic life.

Chronic aquatic toxicity : Chronic aquatic toxicity Category 2; Toxic to aquatic life with long lasting effects.


Components:

GLUTARALDEHYDE:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 13 mg/l
Exposure time: 96 h
Test Type: static test

LC50 (Oncorhynchus mykiss (rainbow trout)): 10 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 14.87 mg/l
Exposure time: 48 h
Test Type: static test

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Toxicity to algae/aquatic plants : NOEC (Desmodesmus subspicatus (green algae)): 0.025 mg/l
End point: Growth inhibition
Exposure time: 72 h
Test Type: static test

EC50 (Desmodesmus subspicatus (green algae)): 0.6 mg/l
End point: Biomass
Exposure time: 72 h
Test Type: static test

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 1.6 mg/l
Exposure time: 97 d
Test Type: flow-through test
Method: OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 5 mg/l
Exposure time: 21 d
Test Type: semi-static test

Persistence and degradability

Product:

Biodegradability : Remarks: Readily biodegradable

Components:

GLUTARALDEHYDE:

Biodegradability : Inoculum: activated sludge
Result: Readily biodegradable.
Biodegradation: 90 - 100 %
Exposure time: 28 d
Method: OECD Test Guideline 301A

Bioaccumulative potential

Components:


GLUTARALDEHYDE:

Partition coefficient: n-octanol/water : log Pow: -0.36 (73 °F / 23 °C)

Mobility in soil

Product:

Distribution among environmental compartments : Medium: Soil
Koc: ca. 120 - 500
Remarks: Highly mobile in soils

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Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR


UN number : UN 2922
Proper shipping name : Corrosive liquid, toxic, n.o.s. (GLUTARALDEHYDE)
Class : 8
Subsidiary risk : 6.1
Packing group : II
Packing instruction (cargo aircraft) : 855
Packing instruction (passenger aircraft) : 851

IMDG-Code

UN number : UN 2922
Proper shipping name : CORROSIVE LIQUID, TOXIC, N.O.S. (GLUTARALDEHYDE)
Class : 8
Subsidiary risk : 6.1
Packing group : II
EmS Code : F-A, S-B
Marine pollutant : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

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National Regulations

49 CFR

UN number	:	UN 2922
Proper shipping name	:	Corrosive liquids, toxic, n.o.s. (GLUTARALDEHYDE)
Class	:	8
Subsidiary risk	:	6.1
Packing group	:	II
ERG Code	:	154
Marine pollutant	:	no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards	:	Acute toxicity (any route of exposure) Respiratory or skin sensitization Skin corrosion or irritation Serious eye damage or eye irritation Specific target organ toxicity (single or repeated exposure)
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SARA 313	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
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California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	Exempt
DSL	:	Exempt
ENCS	:	On the inventory, or in compliance with the inventory

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KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

NZIOC : On the inventory, or in compliance with the inventory

TSCA list

Exempt- This product is exempt from Significant New Use Rule requirements. See information under Biocides for product registration information.”

Exempt-This product is exempt from TSCA 12(b) requirements. See information under Biocides for product registration information.”

Biocides

EPA Reg. # 74655-31

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Danger, Corrosive., Causes irreversible eye damage., Causes skin burns., Harmful if inhaled., May be fatal if swallowed., Harmful if absorbed through skin., Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals., Causes asthmatic signs and symptoms in hyper-reactive individuals., Do not get in eyes, on skin or on clothing., Avoid breathing vapor., Do not swallow.

SECTION 16. OTHER INFORMATION

Further information

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Full text of H-Statements

H301 : Toxic if swallowed.

H314 : Causes severe skin burns and eye damage.

H317 : May cause an allergic skin reaction.


H318 : Causes serious eye damage.

H330 : Fatal if inhaled.

H334 : May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 : May cause respiratory irritation.


Full text of other abbreviations

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Acute Tox.	:	Acute toxicity
Eye Dam.	:	Serious eye damage
Resp. Sens.	:	Respiratory sensitisation
Skin Corr.	:	Skin corrosion
Skin Sens.	:	Skin sensitisation
STOT SE	:	Specific target organ toxicity - single exposure
ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
ACGIH / C	:	Ceiling limit
NIOSH REL / C	:	Ceiling value not be exceeded at any time.
OSHA P0 / C	:	Ceiling limit

AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative


Sources of key data used to compile the Safety Data Sheet
Key literature references and sources of data
SOLENIS Internal data
SOLENIS internal data including own and sponsored test reports

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The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

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Global Chemical Inventory Compliance

The components of this product are reported in the following inventories:

TSCA	On TSCA Inventory
DSL	All components of this product are on the Canadian DSL
AICS	On the inventory, or in compliance with the inventory
ENCS	On the inventory, or in compliance with the inventory
KECI	On the inventory, or in compliance with the inventory
PICCS	On the inventory, or in compliance with the inventory
IECSC	On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

California Proposition 65

Please refer to section 15 of the US Safety Data Sheet (SDS) of this product regarding California Proposition 65(Prop 65). If the US SDS is not available, please contact your local Solenis representative for more information.

Food and Drug Regulations


The compliance status under the individual food additive regulations for the production of paper and paperboard intended to come into contact with food, and any limitations, are listed below.

If compliant, the amount added shall not exceed the addition level required to obtain the intended technical effect. Any 'Specific Migration Limits (SML(s))' and/or 'maximum permitted quantity of the substance in the finished material or article (QM(s))' as provided apply to the final finished article and not to the chemical product as supplied.

Please note, it is the producer's responsibility to conduct their own evaluation of the final finished article in order to confirm its suitability for the intended end use(s), and that it meets all prevailing legislation regulating its application.

US Food and Drug Administration

Citation	Authorization	Limit	Remark
21 CFR 176.170 (Fatty and aqueous food contact) 21 CFR 176.180 (Paper & Paperboard in Contact with Dry Food) 21 CFR 176.300 (Slimicidals)	Complies	FCN000730 and FCN000959: a) As a component of a slimicide used in the production of paper and paperboard. For use at levels not to exceed 0.2 gallons per metric ton (= 0,92 kg/ton) of dry weight fiber. b) As an antimicrobial agent for finished coating formulations for paper and for additives to the finished coating	

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		formulations including starch slurries, sizing solutions, pigments, fillers and binders used in the manufacture of paper and paperboard. For use at levels not to exceed 0,0085 gallons/metric ton (= 0,039 kg/ton) of coating formulation., FCN000384: The other component of this antimicrobial system is sodium hypochlorite.	
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Bundesinstitut für Risikobewertung (BfR). Papier und pappen für den Lebensmittelkontakt

Citation	Authorization	Limit	Remark
BfR XXXVI Recommendation. General packaging papers BfR XXXVI/1 Recommendation. Hot and cold filter papers. BfR XXXVI/2 Recommendation. Bakery papers.	Complies	Reaction product with sodium hypochlorite listed at max. 0,02 % as Cl2 on dry fiber.	
Hinweise zur Beurteilung von Hygienepapieren	Can be used in compliance with this Guideline	Reaction product with sodium hypochlorite listed at max. 0,02 % as Cl2 on dry fiber.	

Europe - FRAMEWORK REGULATION (EC) No 1935/2004 on materials and articles intended to come into contact with food

Citation	Authorization	Limit	Remark
Regulation (EC) No 1935/2004	Complies		Regulation EC No. 1935/2004 lists in Annex 1 groups of materials and articles which may be "covered by specific measures". Paper and board is on this list, but no specifics are available yet on how EC/1935/2004 is to be applied for paper and board. Until this becomes clear, we consider products complying with the specific requirements of e.g. FDA or BfR as complying also with the general requirements in Article 3 of this Regulation.

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Council of Europe resolution AP (2002) 1 on paper and board materials and articles intended to come into contact with foodstuffs.

Citation	Authorization	Limit	Remark
Council of Europe Inventory List of Substances intended for use in the manufacture of food contact paper and board. Council of Europe Guidelines for Paper Kitchen towels and Napkins	Complies	No limit prescribed	

Italia. Allegati al D.M 21.3.1973 - La normativa sui materiali e oggetti a contatto con gli alimenti

Citation	Authorization	Limit	Remark
Allegato II Sezione 4 - Carte e cartoni - General packaging papers	Complies	Maximum dose use: 0.63 g / kg dry fiber. As a component in products biocides in combination with sodium hypochlorite, provided that the paper and paperboard product of the active reaction, measured as Cl ₂ , not detectable limit of 0.250 mg / kg of paper.	

China - Standards for Uses of additive in Food Contact Materials and Articles

Citation	Authorization	Limit	Remark
GB9685 for paper use	Complies	<= 0.092 % trade product on paper	

US TSCA 12(b)

This material does not contain any chemicals subject to the US Toxic Substances Control Act (TSCA) 12(b) export reporting requirements.

US Volatile Organic Compounds (VOC)

VOC	Regulation/Method
0 %	EPA Method 24

Biocides

This is a registered biocidal product and as such must be used in accordance with the product's registration requirements.


Country Name	Registration number
Canada. Pesticide Management Regulatory Agency	28964
US. Federal Insecticide, Fungicide, and Rodenticide Act	8622-64-74655

Country Name	Authorization Type	Product Type	Registration number
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Norway	Registered with the Norwegian Environment Agency	Product-type 12: Slimicides.	319932
Belgium	Registered with the Federal Public Service of Health, Food Chain Safety and the Environment	Product-type 12: Slimicides.	NOTIF299
Poland	Registered with the Office for Registration of Medicinal Products, Medical Devices and Biocidal Products	Product-type 12: Slimicides.	5431/13
Switzerland	Registered with the Federal Office of Public Health	Product-type 12: Slimicides.	CHZN3304
Croatia	Notified with the Croatian Institute for Toxicology and Antidoping	Product-type 12: Slimicides.	
France	Registered with the Ministry of the Environment (MEDAD)	Product-type 12: Slimicides.	26545
France	Registered with the Institut National de la Recherche et de la Sécurité (INRS)		
Spain	Notified with the Ministry of Health, Social Services and Equality (MSSSI)	Product-type 6: Preservatives for products during storage. Product-type 12: Slimicides.	
Slovenia	Registered with the Ministry of Health	Product-type 12: Slimicides.	
Austria	Notified with the Environment Agency	Product-type 12: Slimicides.	
Czech Republic	Registered with the Ministry of Health	Product-type 12: Slimicides.	
Portugal	Notified with the Directorate-General of Health (DGS) and the National Poisons Centre (CIAV)	Product-type 12: Slimicides.	
Greece	Registered with the Ministry of Agricultural Development and Food	Product-type 12: Slimicides.	120008
Italy	Registered with the National Institute of Health (ISS)	Product-type 12: Slimicides.	
Russian Fed.	Notified with the Department of the Federal service for supervision of consumer rights protection and human welfare in Moscow. Chief state sanitary physician for the city of Moscow.	Product-type 12: Slimicides.	
United Kingdom	Notified with the National Poisons Centre	Product-type 12: Slimicides.	
Bulgaria	Registered with the Ministry of Health	Product-type 12: Slimicides.	1965-2/11.01.2017 r.
Denmark	Notified with the Labour Inspectorate	Product-type 12: Slimicides.	
Turkey	Registered with the T.C. Ministry of Health, Turkish Public Health Center.	Product-type 12: Slimicides.	
Germany	Registered with the Federal Institute for Occupational Safety	Product-type 12: Slimicides.	N-15008

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	and Health (BAuA)		
Slovakia	Registered with the Ministry of Economy of the Slovak Republic	Product-type 12: Slimicides.	bio/313/D/13/1/CCHLP

Heavy metals

This product does not contain any intentionally added metals.

Test results for unintentionally added metals are shown below. This product complies with the following regulations and / or standards.

CONEG Reduction of Toxics in Packaging

The Toy Safety Standards, including ASTM F963 and European Standard EN 71-3.

Metals	Concentration
Aluminium	100 ppb
Cadmium	0.9 ppb
Copper	< 3.1 ppb
Mercury	< 0.082 ng/L
Zinc	10 ppb
antimony	< 5 ppm
Arsenic	< 5 ppm
Barium	< 10 ppm
Chromium	< 5 ppm
Lead	< 5 ppm
selenium	< 5 ppm
Silver	< 1 ppm

Phthalates

Phthalates are not intentionally added to this product. It has not been tested for phthalate impurities.

Ozone Depleting Substances

This product is not known to contain any ozone depleting substances.

Animal-Derived Content

Animal-derived substances are not intentionally added during manufacturing of this product.

Allergens

This product is not known to contain any of the following allergens (Regulation (EU) No 1169/2011): Cereals containing gluten and products thereof; Crustaceans and products thereof, Eggs and products thereof; Fish and products thereof; Peanuts and products thereof; Soybeans and products thereof; Milk and products thereof (including lactose); Nuts and products thereof; Celery and products thereof; Mustard and products thereof; Sesame seeds and products thereof; Sulphur dioxide and sulphites at concentrations of more than 10 ppm (as SO₂); Lupin and products thereof as well as Molluscs and products thereof.

In addition, this product is not known to contain any of the following allergens (Food Allergen Labeling and Consumer Protection Act of 2004): Milk, egg, fish (e.g., bass, flounder, or cod), Crustacean shellfish (e.g., crab, lobster, or shrimp), tree nuts (e.g., almonds, pecans, or walnuts), wheat, peanuts, soybeans, gluten and sesame.

However, this product has not been tested for these substances.

Latex


This product is not known to contain natural rubber latex. However, this product has not been tested for this substance.

Palm Oil and Palm Oil derivatives

These chemicals are not intentionally added during the manufacture of this product.

Preservatives

Preservatives are not intentionally added during manufacturing of this product.

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Alkylphenol Ethoxylates

Alkylphenol ethoxylates and/or other alkylphenol derivatives are not intentionally added during the manufacture of this material.

Alkyl phenol derivatives are defined as substances that upon degradation produce alkyl phenols.

Genetically Modified Organisms (GMO's)

Genetically modified organisms (GMO's) are not intentionally added during the manufacture of this product.

Mineral oil

These chemicals are not intentionally added during the manufacture of this product.

(Definition: Minerals oils as registered with the European Chemical Agency ECHA under REACH)

Endocrine disruptors

These chemicals are not intentionally added during the manufacture of this product.

Carcinogenic, Mutagenic, Reprotoxic (CMR) substances

These chemicals are not intentionally added during the manufacture of this product.

(Definition: CMR substances as being defined by EU regulations No. 1272/2008 (as amended))

Dioxin and Dioxin Precursors

This product contains less than 2 ppt of the following substance:, Tetrachlorodibenzo-p-dioxin (TCDD), Not yet evaluated for Dioxin Precursors.

Complexing agents

These chemicals are not intentionally added during the manufacture of this product.

Aromatic hydrocarbons

These chemicals are not intentionally added during the manufacture of this product.

Halogenated Compounds

The following chemicals are intentionally added during the manufacture of this product:

Inorganic bromine compound

Polybrominatedbiphenyls [PBB] and Polybrominated diphenyl esters [PBDE]

Pentachlorophenol [PCPs], Polychlorinatedbiphenyls [PCBs], Polybrominatedbiphenyls [PBBs], Polybrominated diphenyl esters [PBDEs], Polyhalogenated Dibenzofuran and Polyhalogenated Dibenzodioxin have not intentionally been added during the manufacture of this product.

Brominated Flame Retardants

These chemicals are not intentionally added during the manufacture of this product.

Fluorine containing compounds

These chemicals are not intentionally added during the manufacture of this product.

PFOS / PFOA (Perfluorooctane Sulfonate and Perfluorooctanic Acid)

This product is not known to or expected to contain either Perfluorooctane sulfonic acid (PFOS) and/or Perfluorooctanoic acid (PFOA). However, this product has not been tested for these substances.


Nitrogen containing compounds

The following chemicals are intentionally added during the manufacture of this product:

Ammonium bromide

Phosphorus containing compounds

These chemicals are not intentionally added during the manufacture of this product.

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Organotin Compounds

These chemicals are not intentionally added during the manufacture of this product.

Triclosan, hexachlorocyclohexane isomers (HCH's) & short chained chlorinated paraffins (SCCP's)


These chemicals are not intentionally added during the manufacture of this product.

Bisphenol(s)

No bisphenols (i.e. A, AF, B, C, E, F, G, M, P, PH, S, TMC, Z) have been intentionally added during the manufacture of this product.

Disclaimer

This information is guidance and is given in good faith, with reasonable care, but without warranty. Since skill of application and site conditions are beyond our control, the Customer is responsible for determining whether products and the information in this document are appropriate for the Customer's use. The Customer is responsible for ensuring that the Customer's workplace and disposal practices are in compliance with applicable laws and other governmental enactments. This information is based on the present state of our knowledge and is subject to continuous updates. **NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.**

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Amertrol™ HT3010 deposit inhibitor ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 808045		Version: 1.6

SECTION 1. IDENTIFICATION

Product identifier

Trade name : Amertrol™ HT3010
deposit inhibitor
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Industrial chemical

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) RegulatoryRequestsNA@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

GHS label elements

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).


Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components

Chemical name	CAS-No.	Classification	Concentration (%)
ORGANIC ACID	Trade Secret	Flam. Liq. 4; H227 Acute Tox. 4; H302 Acute Tox. 4; H332 Acute Tox. 3; H311 Skin Corr. 1A; H314 Eye Dam. 1; H318 STOT SE 3; H335	>= 0.1 - < 0.5

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Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

- General advice : No hazards which require special first aid measures.

- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.

- In case of eye contact : Remove contact lenses.
Protect unharmed eye.

- If swallowed : Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

- Most important symptoms and effects, both acute and delayed : No symptoms known or expected.

- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical


- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

- Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)

- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.

- Further information : Standard procedure for chemical fires.

- Special protective equipment : In the event of fire, wear self-contained breathing apparatus.

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for firefighters

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE


- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Smoking, eating and drinking should be prohibited in the application area. For personal protection see section 8.
- Conditions for safe storage : Electrical installations / working materials must comply with the technological safety standards.
- Materials to avoid : No materials to be especially mentioned.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
ORGANIC ACID	Trade Secret	TWA	20 ppm	ACGIH
		TWA	20 ppm 70 mg/m3	NIOSH REL
		TWA	20 ppm 70 mg/m3	OSHA P0

- Engineering measures** : General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.


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Personal protective equipment

- Respiratory protection : No personal respiratory protective equipment normally required.
- Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.
- Skin and body protection : Wear resistant gloves (consult your safety equipment supplier).
Wear as appropriate:
Safety shoes
- Hygiene measures : General industrial hygiene practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Colour : coloured
- Odour : No data available
- Odour Threshold : No data available
- pH : 5.5 - 10.0
- Melting point/freezing point : 32 °F / 0 °C
- Boiling point/boiling range : 208 - 217 °F / 98 - 103 °C
- Flash point : does not flash
- Evaporation rate : No data available
- Flammability (solid, gas) : No data available
- Self-ignition : No data available
- Upper explosion limit / Upper flammability limit : No data available
- Lower explosion limit / Lower flammability limit : No data available
- Vapour pressure : 28 hPa (77 °F / 25 °C)
- Relative vapour density : No data available

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Relative density : No data available

Density : 1.17 - 1.23 g/cm³ (72 °F / 22 °C)

Solubility(ies)

Water solubility : completely miscible

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : 100 - 300 mPa.s (72 °F / 22 °C)

Viscosity, kinematic : No data available

Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

Incompatible materials : Strong oxidizing agents

Hazardous decomposition products : Carbon monoxide
Carbon dioxide (CO₂)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity


Not classified based on available information.

Components:

ORGANIC ACID:

Acute oral toxicity : LD 50 (Rat, male): 1,320 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC 50 (Rat): 4.7 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

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Acute dermal toxicity : LD 50 (Rabbit): 500 - 1,000 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Components:

ORGANIC ACID:

Method : OECD Test Guideline 404
 Result : Corrosive after 3 minutes or less of exposure

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Remarks : Unlikely to cause eye irritation or injury.

Components:

ORGANIC ACID:

Result : Corrosive to eyes

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

ORGANIC ACID:

Test Type : Buehler Test
 Species : Guinea pig
 Method : OECD Test Guideline 406

Germ cell mutagenicity


Not classified based on available information.

Components:

ORGANIC ACID:

Genotoxicity in vitro : Test Type: Ames test
 Method: OECD Test Guideline 471
 Result: negative

Genotoxicity in vivo : Test Type: Mammalian bone marrow sister chromatid exchange
 Species: Rat
 Cell type: Bone marrow

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Method: OECD Test Guideline 475
Result: negative

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

Components:

ORGANIC ACID:

Effects on fertility : Species: Rat
Application Route: Oral
Fertility: NOAEL Mating/Fertility: 400 mg/kg body weight
Symptoms: No effects on fertility, No effects on reproduction parameters
Method: OECD Test Guideline 416

Effects on foetal development : Species: Rabbit
Application Route: Oral
Developmental Toxicity: NOAEL F1: 450 mg/kg body weight
Symptoms: No specific developmental abnormalities
Method: OECD Test Guideline 414

STOT - single exposure

Not classified based on available information.

Components:

ORGANIC ACID:


Exposure routes : Inhalation
Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

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Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

- Toxicity to fish : LC50 (Fathead minnow (*Pimephales promelas*)): > 1,000 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): > 1,000 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : EC50 (calculated) (*Desmodesmus subspicatus*): ca. > 100 mg/l
End point: EC 50
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on similar product.

Ecotoxicology Assessment

- Acute aquatic toxicity : Not classified based on available information.
- Chronic aquatic toxicity : Not classified based on available information.

Components:

ORGANIC ACID:

- Toxicity to fish : LC50 (*Oncorhynchus mykiss* (rainbow trout)): 85 mg/l
Exposure time: 96 h
Test Type: flow-through test
- Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna*): > 130 mg/l
Exposure time: 48 h
Test Type: flow-through test
- Toxicity to algae/aquatic plants : EC50 (*Pseudokirchneriella subcapitata* (green algae)): 20 mg/l
End point: Biomass
Exposure time: 72 h
Test Type: flow-through test
Method: OECD Test Guideline 201
- Toxicity to fish (Chronic) : NOEC (*Danio rerio* (zebra fish)): > 10 mg/l

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toxicity)

Exposure time: 35 d
 Test Type: flow-through test
 Method: OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Water flea (Daphnia magna)): 53 mg/l
 Exposure time: 21 d
 Test Type: flow-through test
 Method: OECD Test Guideline 211

Persistence and degradability**Product:**

Stability in water : Remarks: Hydrolyses slowly.

Components:**ORGANIC ACID:**

Biodegradability : Inoculum: activated sludge
 Result: Readily biodegradable.
 Biodegradation: 87 %
 Exposure time: 28 d

Bioaccumulative potential**Product:**

Bioaccumulation : Remarks: No bioaccumulation is to be expected (log Pow <= 3).

Components:**ORGANIC ACID:**

Bioaccumulation : Bioconcentration factor (BCF): 1.0
 Remarks: Bioaccumulation is unlikely.


Partition coefficient: n-octanol/water : log Pow: 0.93

Mobility in soil

No data available

Other adverse effects**Product:**

Additional ecological information : No data available

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SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

Not regulated as a dangerous good

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
FORMALDEHYDE	50-00-0	100	166666


SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
FORMALDEHYDE	50-00-0	100	166666

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

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SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AICS : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

Revision Date : 06/25/2020

Full text of H-Statements

- H227 : Combustible liquid.
- H302 : Harmful if swallowed.
- H311 : Toxic in contact with skin.
- H314 : Causes severe skin burns and eye damage.
- H318 : Causes serious eye damage.
- H332 : Harmful if inhaled.
- H335 : May cause respiratory irritation.

Full text of other abbreviations

- Acute Tox. : Acute toxicity
- Eye Dam. : Serious eye damage

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Flam. Liq.	: Flammable liquids
Skin Corr.	: Skin corrosion
STOT SE	: Specific target organ toxicity - single exposure
ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	: USA. NIOSH Recommended Exposure Limits
OSHA P0	: USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
ACGIH / TWA	: 8-hour, time-weighted average
NIOSH REL / TWA	: Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
OSHA P0 / TWA	: 8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative


Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data

SOLENIS Internal data


SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

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Amertrol™ HT1009 deposit inhibitor ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 864192		Version: 2.1

SECTION 1. IDENTIFICATION

Product identifier

Trade name : Amertrol™ HT1009 deposit inhibitor
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Details of the supplier of the safety data sheet Solenis LLC 2475 Pinnacle Drive Wilmington, DE 19803 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

GHS label elements

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

Other hazards

None known.


SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (%)
PHOSPHATE ACID	Trade Secret	Met. Corr. 1; H290 Skin Corr. 1B; H314 Eye Dam. 1; H318	>= 5 - < 10

Actual concentration is withheld as a trade secret


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SECTION 4. FIRST AID MEASURES

- General advice : No hazards which require special first aid measures.
- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
- In case of eye contact : Remove contact lenses.
Protect unharmed eye.
- If swallowed : Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Pulmonary edema may be delayed.
Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Cough
lung edema (fluid buildup in the lung tissue)
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO₂)
Dry chemical
- Specific hazards during firefighting : If product is heated above its flash point it will produce vapors sufficient to support combustion. Vapors are heavier than air and may travel along the ground and be ignited by heat, pilot lights, other flames and ignition sources at locations near the point of release.
Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Oxides of phosphorus
Carbon monoxide
Carbon dioxide (CO₂)

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- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Standard procedure for chemical fires.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.


SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
- Conditions for safe storage : Electrical installations / working materials must comply with the technological safety standards.
- Materials to avoid : No materials to be especially mentioned.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
PHOSPHATE ACID	Trade Secret	TWA	1 mg/m ³	ACGIH
		STEL	3 mg/m ³	ACGIH

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		TWA	1 mg/m3	NIOSH REL
		ST	3 mg/m3	NIOSH REL
		TWA	1 mg/m3	OSHA Z-1
		TWA	1 mg/m3	OSHA P0
		STEL	3 mg/m3	OSHA P0

Engineering measures : General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.

Skin and body protection : Wear as appropriate:
Safety shoes
Wear resistant gloves (consult your safety equipment supplier).

Hygiene measures : General industrial hygiene practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : colourless

Odour : No data available


Odour Threshold : No data available

pH : 2.74

Melting point/freezing point : No data available

Boiling point/boiling range : No data available


Flash point : > 212 °F / > 100 °C

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Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Self-ignition	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	1.059 g/cm ³ (73 °F / 23 °C)
Solubility(ies)		
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	2.0 mPa.s (73 °F / 23 °C)
Viscosity, kinematic	:	No data available
Oxidizing properties	:	No data available
Metal corrosion rate	:	Not corrosive to metals

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	Product will not undergo hazardous polymerization.
Conditions to avoid	:	excessive heat Exposure to moisture

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Incompatible materials : Fluorine
Metals
nitromethane
strong alkalis
Strong oxidizing agents
strong reducing agents
Sulphides
sulphites

Hazardous decomposition products : Oxides of phosphorus
Carbon monoxide
Carbon dioxide (CO₂)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Components:

PHOSPHATE ACID:

Acute oral toxicity : LD50 (Rat): ca. 2,600 mg/kg

Acute inhalation toxicity : Remarks: Corrosive to respiratory system.

Acute dermal toxicity : LD50 (Rabbit): 2,740 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Components:

PHOSPHATE ACID:

Result : Causes burns.

Serious eye damage/eye irritation

Not classified based on available information.


Product:

Remarks : Unlikely to cause eye irritation or injury.

Components:

PHOSPHATE ACID:

Result : Corrosive to eyes

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Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:


Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

Persistence and degradability

No data available

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Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

Not regulated as a dangerous good

Special precautions for user


The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ	Calculated product RQ
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		(lbs)	(lbs)
PHOSPHATE ACID	Trade Secret	5000	95767

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : All components are listed on the inventory, regulatory obligations/restrictions apply
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory

TSCA list


No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

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Full text of H-Statements

- H290 : May be corrosive to metals.
H314 : Causes severe skin burns and eye damage.
H318 : Causes serious eye damage.

Full text of other abbreviations

- Eye Dam. : Serious eye damage
Met. Corr. : Corrosive to metals
Skin Corr. : Skin corrosion
ACGIH : USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL : USA. NIOSH Recommended Exposure Limits
OSHA P0 : USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA : 8-hour, time-weighted average
ACGIH / STEL : Short-term exposure limit
NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST : STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA P0 / TWA : 8-hour time weighted average
OSHA P0 / STEL : Short-term exposure limit
OSHA Z-1 / TWA : 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-

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Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data


SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

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29 CFR 1910.1200 (OSHA HazCom 2012)

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Trade name : Drewphos™ CPT

™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America RegulatoryRequestsNA@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) / 606-329-5705 Product Information 1-844-SOLENIS (844-765-3647)
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SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Skin corrosion : Category 1

Serious eye damage : Category 1

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : Causes severe skin burns and eye damage.
Causes serious eye damage.

Precautionary Statements : **Prevention:**
Wash skin thoroughly after handling.

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Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.

Wash contaminated clothing before reuse.

Storage:

Store locked up.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

Chemical Name	CAS-No.	Classification	Concentration (%)
TRISODIUM PHOSPHATE	7601-54-9	Skin Irrit. 2; H315 Eye Irrit. 2A; H319 STOT SE 3; H335	>= 10.00 - < 15.00

Trade Secret Composition - conceal concentration

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
 Consult a physician.
 Show this safety data sheet to the doctor in attendance.

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Do not leave the victim unattended.

- If inhaled : Move to fresh air.
 If breathed in, move person into fresh air.
 Keep patient warm and at rest.
 If unconscious place in recovery position and seek medical advice.
 If symptoms persist, call a physician.
- In case of skin contact : If on skin, rinse well with water.
 Wash contaminated clothing before re-use.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 Continue rinsing eyes during transport to hospital.
 Remove contact lenses.
 Protect unharmed eye.
- If swallowed : Get medical attention immediately.
 Do NOT induce vomiting.
 Rinse mouth with water.
 Do not give milk or alcoholic beverages.
 Never give anything by mouth to an unconscious person.
 If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Excessive levels of phosphorus can cause low blood calcium, with tetany and convulsions.
 Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
 stomach or intestinal upset (nausea, vomiting, diarrhea)
 irritation (nose, throat, airways)
 Cough
 lung edema (fluid buildup in the lung tissue)
 Difficulty in breathing
 Causes serious eye damage.
 Causes severe burns.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
 Water spray
 Foam

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Carbon dioxide (CO2)
 Dry chemical

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Oxides of phosphorus
 Sodium oxides

Specific extinguishing methods :

Product is compatible with standard fire-fighting agents.

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
 Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Environmental precautions : Prevent product from entering drains.
 Prevent further leakage or spillage if safe to do so.
 If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

Other information : Comply with all applicable federal, state, and local regulations.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Do not breathe vapours/dust.
 When diluting, always add the product to water. Never add water to the product.
 Container hazardous when empty.

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Avoid contact with skin and eyes.
 Smoking, eating and drinking should be prohibited in the application area.
 For personal protection see section 8.
 Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
 Observe label precautions.
 Electrical installations / working materials must comply with the technological safety standards.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
TRISODIUM PHOSPHATE	7601-54-9	STEL	5 mg/m ³	WEEL

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.

Skin and body protection : Wear resistant gloves (consult your safety equipment supplier).
 Wear as appropriate:
 impervious clothing
 Chemical resistant apron
 Safety shoes
 Choose body protection according to the amount and concentration of the dangerous substance at the work place.
 Discard gloves that show tears, pinholes, or signs of wear.

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Hygiene measures : Wash hands before breaks and at the end of workday.
 When using do not eat or drink.
 Ensure that eyewash stations and safety showers are close to
 the workstation location.
 When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : liquid

Odour : No data available

Odour Threshold : No data available

pH : > 13

Melting point/freezing point : 32 °F / 0 °C

Boiling point/boiling range : 212 °F / 100 °C
 (1,013.333333 hPa)
 Calculated Phase Transition Liquid/Gas

Flash point : Not applicable

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapour pressure : 23.3333333 hPa (20 °C)
 Calculated Vapor Pressure

Relative vapour density : No data available

Relative density : 1.06

Density : 1.06 g/cm³

Solubility(ies)
 Water solubility : No data available

Solubility in other solvents : No data available

Partition coefficient: n- : No data available

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octanol/water

Thermal decomposition : No data available

Viscosity

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

Conditions to avoid : excessive heat
 Exposure to moisture

Incompatible materials : Avoid contact with:
 aluminum
 Amines
 Ammonia
 magnesium
 Organic materials
 Reducing agents
 strong mineral acids
 This product should not be used in conjunction with trimethylol propane or trimethylol propane-derived products. There is a possibility that bicyclic phosphates or phosphites can be produced as a result of the thermal decomposition of this product in combination with trimethylol propane, trimethylol propane-derived products or their corresponding trimethylol propane alkane homologs. Bicyclic phosphates and phosphites are a class of materials with acute neurotoxic properties which produce characteristic convulsive seizures in test animals.

Hazardous decomposition products : Chlorine
 Oxides of phosphorus
 Sodium oxides

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SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation
Skin contact
Eye Contact
Ingestion

Acute toxicity

Not classified based on available information.

Components:**TRISODIUM PHOSPHATE:**

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 420

Acute inhalation toxicity : LD 50 (Rat): > 0.83 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: Not classified as acutely toxic by inhalation under GHS.
Remarks: Information given is based on data obtained from similar substances.

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: Not classified as acutely toxic by dermal absorption under GHS.
Remarks: Information given is based on data obtained from similar substances.

Skin corrosion/irritation

Causes severe burns.

Product:

Remarks: Causes severe skin burns and eye damage.

Components:**TRISODIUM PHOSPHATE:**

Result: Irritating to skin

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks: May cause irreversible eye damage.

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Components:

TRISODIUM PHOSPHATE:

Result: Irritating to eyes

Respiratory or skin sensitisation

Skin sensitisation: Not classified based on available information.

Respiratory sensitisation: Not classified based on available information.

Components:

TRISODIUM PHOSPHATE:

Test Type: Local lymph node assay

Species: Mouse

Assessment: Did not cause sensitisation on laboratory animals.

Method: OECD Test Guideline 429

Germ cell mutagenicity

Not classified based on available information.

Components:

TRISODIUM PHOSPHATE:

Genotoxicity in vitro : Test Type: Ames test
 Test species: Salmonella typhimurium
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 471
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

Components:

TRISODIUM PHOSPHATE:

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks: No data available

Carcinogenicity:

IARC No component of this product present at levels greater than or

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equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

TRISODIUM PHOSPHATE:

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
 Exposure time: 96 h
 Test Type: semi-static test
 Method: OECD Test Guideline 203
 Remarks: Information given is based on data obtained from similar substances.

- Toxicity to daphnia and other aquatic invertebrates : EC50 (Water flea (Daphnia magna)): > 100 mg/l
 Exposure time: 48 h
 Test Type: static test
 Method: OECD Test Guideline 202
 Remarks: Information given is based on data obtained from similar substances.

- Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
 End point: Growth inhibition
 Exposure time: 72 h
 Test Type: static test
 Method: OECD Test Guideline 201
 Remarks: Information given is based on data obtained from similar substances.

- NOEC (Desmodesmus subspicatus (green algae)): > 100 mg/l
 End point: Growth inhibition
 Exposure time: 72 h
 Test Type: static test
 Method: OECD Test Guideline 201
 Remarks: Information given is based on data obtained from

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similar substances.

Persistence and degradability

Components:

TRISODIUM PHOSPHATE:

Biodegradability : Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulative potential

Components:

No data available

Mobility in soil

Components:

No data available

Other adverse effects

No data available

Product:

Additional ecological information : No data available

Components:

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

General advice : Do not dispose of waste into sewer.
 Do not contaminate ponds, waterways or ditches with chemical or used container.
 Send to a licensed waste management company.
 Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.
 Dispose of as unused product.
 Empty containers should be taken to an approved waste handling site for recycling or disposal.
 Do not re-use empty containers.

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SECTION 14. TRANSPORT INFORMATION
International transport regulations
REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.
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U.S. DOT - ROAD

UN 1719	Caustic alkali liquids, n.o.s. (TRISODIUM PHOSPHATE)	8		III	
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U.S. DOT - RAIL

UN 1719	Caustic alkali liquids, n.o.s. (TRISODIUM PHOSPHATE)	8		III	
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U.S. DOT - INLAND WATERWAYS

UN 1719	Caustic alkali liquids, n.o.s. (TRISODIUM PHOSPHATE)	8		III	
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TRANSPORT CANADA - ROAD

UN 1719	CAUSTIC ALKALI LIQUID, N.O.S. (TRISODIUM PHOSPHATE)	8		III	
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TRANSPORT CANADA - RAIL

UN 1719	CAUSTIC ALKALI LIQUID, N.O.S. (TRISODIUM PHOSPHATE)	8		III	
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TRANSPORT CANADA - INLAND WATERWAYS

UN 1719	CAUSTIC ALKALI LIQUID, N.O.S. (TRISODIUM PHOSPHATE)	8		III	
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INTERNATIONAL MARITIME DANGEROUS GOODS

UN 1719	CAUSTIC ALKALI LIQUID, N.O.S. (TRISODIUM PHOSPHATE)	8		III	
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Drewphos™ CPT
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INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

UN	1719	Caustic alkali liquid, n.o.s. (TRISODIUM PHOSPHATE)	8	III
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INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

UN	1719	Caustic alkali liquid, n.o.s. (TRISODIUM PHOSPHATE)	8	III
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MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

UN	1719	LIQUIDOS ALCALINOS CAUSTICOS N.E.P. (TRISODIUM PHOSPHATE)	8	III
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*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID

Marine pollutant	no
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Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act


CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
TRISODIUM PHOSPHATE	7601-54-9	5000	50000

SARA 311/312 Hazards : Acute Health Hazard

SARA 313 Component(s)SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65 Proposition 65 warnings are not required for this product based on the results of a risk assessment.

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The components of this product are reported in the following inventories:

- TSCA : On TSCA Inventory
- DSL : All components of this product are on the Canadian DSL.
- AUSTR : On the inventory, or in compliance with the inventory
- NZIOC : On the inventory, or in compliance with the inventory
- ENCS : On the inventory, or in compliance with the inventory
- KECL : On the inventory, or in compliance with the inventory
- PHIL : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECL (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

SECTION 16. OTHER INFORMATION

Further information

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Full text of H-Statements referred to under sections 2 and 3.

- H290 May be corrosive to metals.
- H303 May be harmful if swallowed.
- H314 Causes severe skin burns and eye damage.

Further information

Sources of key data used to compile the Safety Data Sheet
Key literature references and sources of data
SOLENIS Internal data
SOLENIS internal data including own and sponsored test reports
The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the

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information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by the Solenis Environmental Health and Safety Department.

List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet :

ACGIH : American Conference of Industrial Hygienists
BEI : Biological Exposure Index
CAS : Chemical Abstracts Service (Division of the American Chemical Society).
CMR : Carcinogenic, Mutagenic or Toxic for Reproduction
FG : Food grade
GHS : Globally Harmonized System of Classification and Labeling of Chemicals.
H-statement : Hazard Statement
IATA : International Air Transport Association.
IATA-DGR : Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO : International Civil Aviation Organization
ICAO-TI (ICAO) : Technical Instructions by the "International Civil Aviation Organization"
IMDG : International Maritime Code for Dangerous Goods
ISO : International Organization for Standardization
logPow : octanol-water partition coefficient
LCxx : Lethal Concentration, for xx percent of test population
LDxx : Lethal Dose, for xx percent of test population.
ICxx : Inhibitory Concentration for xx of a substance
Ecxx : Effective Concentration of xx
N.O.S.: Not Otherwise Specified
OECD : Organization for Economic Co-operation and Development
OEL : Occupational Exposure Limit
P-Statement : Precautionary Statement
PBT : Persistent , Bioaccumulative and Toxic
PPE : Personal Protective Equipment
STEL : Short-term exposure limit
STOT : Specific Target Organ Toxicity
TLV : Threshold Limit Value
TWA : Time-weighted average
vPvB : Very Persistent and Very Bioaccumulative
WEL : Workplace Exposure Level

CERCLA : Comprehensive Environmental Response, Compensation, and Liability Act
DOT : Department of Transportation
FIFRA : Federal Insecticide, Fungicide, and Rodenticide Act
HMIRC : Hazardous Materials Information Review Commission
HMIS : Hazardous Materials Identification System
NFPA : National Fire Protection Association
NIOSH : National Institute for Occupational Safety and Health
OSHA : Occupational Safety and Health Administration
PMRA : Health Canada Pest Management Regulatory Agency
RTK : Right to Know
WHMIS : Workplace Hazardous Materials Information System



BWT-PDS-NA-Drewphos CPT-R3

Drewphos™ CPT boiler water treatment

Product Description

Drewphos™ CPT boiler water treatment is a liquid blend of trisodium phosphate used to maintain proper boiler water chemistry in high pressure steam generating systems. Drewphos CPT should be used primarily in systems requiring equilibrium phosphate treatment, phosphate treatment or phosphate continuum treatment programs (EPT, PT or CPT). As a liquid product, it is easy to feed and provides enhanced control as compared to dry powder phosphates. Drewphos CPT yields a specific Na:PO₄ molar ratio thus offering more precise control over the critical ratio needed to maintain proper boiler water chemistry while minimizing the potential for free caustic corrosion.

Product Application

Drewphos CPT should be fed continuously either neat or as a dilute solution directly to the boiler. This product should not be fed to the preboiler section. Demineralized water or condensate should be used when preparing dilute solutions. This product may be fed along with most other boiler water treatment chemicals.

Testing and Control

Proper dosage is regulated through orthophosphate residual and pH monitoring. The dosage and specific residual requirements are dependent upon feedwater analyses as well as boiler operating conditions. Your Solenis representative can supply specific information regarding the product control range applicable for your plant.

Packaging

This product is available in a variety of packaging sizes. Your Solenis representative will recommend the appropriate packaging for the application.

Important Information


Typical Properties: Refer to the Safety Data Sheet (SDS).

Regulatory Information: Refer to the SDS or contact your sales representative for any additional regulatory and environmental information.

Safety: Solenis maintains an SDS for all of its products. Use the health and safety information contained in the SDS to develop appropriate product handling procedures to protect your employees and customers.

Our SDS should be read and understood by all of your supervisory personnel and employees before using Solenis products in your facilities.

Features	Advantages
<ul style="list-style-type: none"> • Preblended sodium:phosphate ratio 	<ul style="list-style-type: none"> • Caustic corrosion minimized • Captive alkalinity promoted • Good for EPT, PT and CPT programs
<ul style="list-style-type: none"> • FDA acceptable testing and control 	<ul style="list-style-type: none"> • Benefits extend to FDA-regulated plant or hosts

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Enviroplus™ 325 CORROSION INHIBITOR
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)


Corrosive to metals : Category 1
Skin corrosion : Category 1
Serious eye damage : Category 1
Skin sensitisation : Category 1
Reproductive toxicity : Category 1B

GHS label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H360 May damage fertility or the unborn child.

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Precautionary statements :

Prevention:

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P234 Keep only in original container.
- P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
- P264 Wash skin thoroughly after handling.
- P272 Contaminated work clothing must not be allowed out of the workplace.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

- P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
- P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
- P308 + P313 IF exposed or concerned: Get medical advice/ attention.
- P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
- P363 Wash contaminated clothing before reuse.
- P390 Absorb spillage to prevent material damage.

Storage:

- P405 Store locked up.
- P406 Store in corrosive resistant container with a resistant inner liner.

Disposal:

- P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards


None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (%)
INORGANIC SALT	Trade Secret	Met. Corr. 1; H290 Skin Corr. 1; H314	>= 5 - < 10

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		Eye Dam. 1; H318 STOT SE 3; H335	
INORGANIC SALT	Trade Secret	Eye Irrit. 2A; H319 Repr. 1B; H360	>= 5 - < 10
TRIAZOLE DERIVATIVE	Trade Secret	Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318	>= 1.5 - < 5
ORGANIC SALT	Trade Secret	Skin Irrit. 2; H315 Eye Irrit. 2A; H319	>= 1.5 - < 5
CORROSION/SCALE INHIBITOR	Trade Secret	Skin Sens. 1; H317	>= 1 - < 1.5
THIAZOLE COMPOUND	Trade Secret	Met. Corr. 1; H290 Skin Corr. 1C; H314 Eye Dam. 1; H318 Skin Sens. 1; H317	>= 0.5 - < 1

INORGANIC SALT	Trade Secret	Met. Corr. 1; H290 Skin Corr. 1; H314 Eye Dam. 1; H318 STOT SE 3; H335	>= 5 - < 10
INORGANIC SALT	Trade Secret	Eye Irrit. 2A; H319 Repr. 1B; H360	>= 5 - < 10
TRIAZOLE DERIVATIVE	Trade Secret	Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318	>= 1.5 - < 5
ORGANIC SALT	Trade Secret	Skin Irrit. 2; H315 Eye Irrit. 2A; H319	>= 1.5 - < 5
CORROSION/SCALE INHIBITOR	Trade Secret	Skin Sens. 1; H317	>= 1 - < 1.5
THIAZOLE COMPOUND	Trade Secret	Met. Corr. 1; H290 Skin Corr. 1C; H314 Eye Dam. 1; H318 Skin Sens. 1; H317	>= 0.5 - < 1

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.

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- Consult a physician.
 Show this safety data sheet to the doctor in attendance.
 Do not leave the victim unattended.
- If inhaled : Move to fresh air.
 If breathed in, move person into fresh air.
 Keep patient warm and at rest.
 If unconscious, place in recovery position and seek medical advice.
 If symptoms persist, call a physician.
- In case of skin contact : Remove contaminated clothing. If irritation develops, get medical attention.
 If on skin, rinse well with water.
 Wash contaminated clothing before re-use.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 Continue rinsing eyes during transport to hospital.
 Remove contact lenses.
 Protect unharmed eye.
- If swallowed : Get medical attention immediately.
 Do NOT induce vomiting.
 Rinse mouth with water.
 Do not give milk or alcoholic beverages.
 Never give anything by mouth to an unconscious person.
 If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
 stomach or intestinal upset (nausea, vomiting, diarrhea)
 irritation (nose, throat, airways)
 Nose bleeding
 hair loss
 May cause an allergic skin reaction.
 Causes serious eye damage.
 May damage fertility or the unborn child.
 Causes severe burns.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
 Water spray
 Foam
 Carbon dioxide (CO2)
 Dry chemical

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- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon oxides
Nitrogen oxides (NOx)
potassium oxide
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Ensure adequate ventilation.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.
Do not smoke.
When diluting, always add the product to water. Never add water to the product.
Container hazardous when empty.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.

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Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION


Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
INORGANIC SALT	Trade Secret	TWA	5 mg/m3	NIOSH REL
		TWA	10 mg/m3	OSHA P0
		TWA (Inhalable particulate matter)	2 mg/m3 (Borate)	ACGIH
		STEL (Inhalable particulate matter)	6 mg/m3 (Borate)	ACGIH

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Respiratory protection : A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not

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provide adequate protection.

Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.
Maintain eye wash station in immediate work area.

Skin and body protection : Wear as appropriate:
Impervious clothing
Chemical resistant apron
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.

Hygiene measures : Wash hands before breaks and at the end of workday.
When using do not eat or drink.
Ensure that eyewash stations and safety showers are close to the workstation location.
When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : dark amber

Odour :


No data available

Odour Threshold : No data available

pH : 12.5

Melting point/freezing point : 45.99 °F / 7.77 °C


Boiling point/boiling range : 212 °F / 100 °C
(1,013.333333 hPa)
Calculated Phase Transition Liquid/Gas

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- Flash point : Not applicable
- Evaporation rate : > 1
Ethyl Ether
- Flammability (solid, gas) : No data available
- Self-ignition : No data available
- Upper explosion limit / Upper flammability limit : No data available
- Lower explosion limit / Lower flammability limit : No data available
- Vapour pressure : 32 hPa (77 °F / 25 °C)
Calculated Vapor Pressure
- Relative vapour density : No data available
- Relative density : No data available
- Density : 1.24 g/cm³ (77 °F / 25 °C)
- Solubility(ies)
 - Water solubility : completely soluble
 - Solubility in other solvents : No data available
- Partition coefficient: n-octanol/water : No data available
- Decomposition temperature : No data available
- Viscosity
 - Viscosity, dynamic : No data available
 - Viscosity, kinematic : No data available
- Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

- Reactivity : No decomposition if stored and applied as directed.
- Chemical stability : Stable under recommended storage conditions.
- Possibility of hazardous reactions : Product will not undergo hazardous polymerization.
- Conditions to avoid : temperature extremes
Freezing temperatures.

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Incompatible materials : Alkali metals
 Alkaline earth metals
 metal hydrides
 metal salts
 Strong acids
 Strong oxidizing agents
 strong reducing agents

Hazardous decomposition products : Carbon oxides
 Nitrogen oxides (NOx)
 potassium oxide
 Oxides of phosphorus

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Components:

INORGANIC SALT:

Acute oral toxicity : LD50 (Rat, female): > 5,000 mg/kg
 Method: OPPTS 870.1100
 Assessment: No adverse effect has been observed in acute oral toxicity tests.


Acute inhalation toxicity : LC50 (Rat, male and female): > 2.06 mg/l
 Exposure time: 4 h
 Test atmosphere: vapour
 Method: OPPTS 870.1300
 GLP: yes
 Assessment: No adverse effect has been observed in acute inhalation toxicity tests.

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
 Method: OECD Test Guideline 402
 GLP: yes
 Assessment: No adverse effect has been observed in acute dermal toxicity tests.

INORGANIC SALT:

Acute oral toxicity : LD50 (Rat): 4,500 - 5,000 mg/kg

Acute inhalation toxicity : LC 50 (Rat): > 2 mg/l
 Test atmosphere: dust/mist
 Assessment: Not classified as acutely toxic by inhalation under GHS.
 Remarks: see user defined free text

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Acute dermal toxicity : LD50 (Rabbit): > 10,000 mg/kg

TRIAZOLE DERIVATIVE:

Acute oral toxicity : LD50 (Rat, male): 930 mg/kg
 Remarks: Information given is based on data obtained from similar substances.

LD50 (Rat): 675 mg/kg
 Remarks: Information given is based on data obtained from similar substances.

LD50 (Rat, female): 735 mg/kg
 Remarks: Information given is based on data obtained from similar substances.

Acute dermal toxicity : LD (Rabbit): > 4,000 mg/kg
 Remarks: Information given is based on data obtained from similar substances.

CORROSION/SCALE INHIBITOR:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
 Assessment: No adverse effect has been observed in acute oral toxicity tests.

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
 Assessment: No adverse effect has been observed in acute dermal toxicity tests.

THIAZOLE COMPOUND:

Acute oral toxicity : LD50 (Rat): 2,100 mg/kg


Acute inhalation toxicity : LC 50 (Rat): > 6.5 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 7,940 mg/kg

INORGANIC SALT:

Acute oral toxicity : LD50 (Rat, female): > 5,000 mg/kg
 Method: OPPTS 870.1100
 Assessment: No adverse effect has been observed in acute oral toxicity tests.

Acute inhalation toxicity : LC50 (Rat, male and female): > 2.06 mg/l
 Exposure time: 4 h
 Test atmosphere: vapour
 Method: OPPTS 870.1300
 GLP: yes
 Assessment: No adverse effect has been observed in acute inhalation toxicity tests.

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Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
 Method: OECD Test Guideline 402
 GLP: yes
 Assessment: No adverse effect has been observed in acute dermal toxicity tests.

INORGANIC SALT:

Acute oral toxicity : LD50 (Rat): 4,500 - 5,000 mg/kg

Acute inhalation toxicity : LC 50 (Rat): > 2 mg/l
 Test atmosphere: dust/mist
 Assessment: Not classified as acutely toxic by inhalation under GHS.
 Remarks: see user defined free text

Acute dermal toxicity : LD50 (Rabbit): > 10,000 mg/kg

TRIAZOLE DERIVATIVE:

Acute oral toxicity : LD50 (Rat, male): 930 mg/kg
 Remarks: Information given is based on data obtained from similar substances.

LD50 (Rat): 675 mg/kg
 Remarks: Information given is based on data obtained from similar substances.

LD50 (Rat, female): 735 mg/kg
 Remarks: Information given is based on data obtained from similar substances.

Acute dermal toxicity : LD (Rabbit): > 4,000 mg/kg
 Remarks: Information given is based on data obtained from similar substances.

CORROSION/SCALE INHIBITOR:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
 Assessment: No adverse effect has been observed in acute oral toxicity tests.

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
 Assessment: No adverse effect has been observed in acute dermal toxicity tests.

THIAZOLE COMPOUND:

Acute oral toxicity : LD50 (Rat): 2,100 mg/kg

Acute inhalation toxicity : LC 50 (Rat): > 6.5 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist

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Acute dermal toxicity : LD50 (Rabbit): > 7,940 mg/kg

Skin corrosion/irritation

Causes severe burns.

Product:

Remarks : May cause skin irritation in susceptible persons.
Causes severe skin burns and eye damage.

Components:

INORGANIC SALT:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Corrosive to skin
GLP : yes

INORGANIC SALT:

Result : Not irritating to skin

TRIAZOLE DERIVATIVE:

Species : Rabbit
Result : Corrosive after 3 minutes to 1 hour of exposure
Remarks : Information given is based on data obtained from similar substances.

ORGANIC SALT:

Result : Irritating to skin

CORROSION/SCALE INHIBITOR:

Result : Slightly irritating to skin

THIAZOLE COMPOUND:

Species : Rabbit
Result : Corrosive after 1 to 4 hours of exposure

INORGANIC SALT:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Corrosive to skin
GLP : yes

INORGANIC SALT:

Result : Not irritating to skin

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TRIAZOLE DERIVATIVE:

Species : Rabbit
Result : Corrosive after 3 minutes to 1 hour of exposure
Remarks : Information given is based on data obtained from similar substances.

ORGANIC SALT:

Result : Irritating to skin

CORROSION/SCALE INHIBITOR:

Result : Slightly irritating to skin

THIAZOLE COMPOUND:

Species : Rabbit
Result : Corrosive after 1 to 4 hours of exposure

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks : May cause irreversible eye damage.

Components:**INORGANIC SALT:**

Species : Rabbit
Result : Corrosive to eyes

INORGANIC SALT:

Result : Irritating to eyes

TRIAZOLE DERIVATIVE:

Species : Rabbit
Remarks : Information given is based on data obtained from similar substances.

ORGANIC SALT:


Result : Irritating to eyes

CORROSION/SCALE INHIBITOR:

Result : Slightly irritating to eyes

THIAZOLE COMPOUND:

Species : Rabbit
Result : Corrosive to eyes

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INORGANIC SALT:

Species : Rabbit
 Result : Corrosive to eyes

INORGANIC SALT:

Result : Irritating to eyes

TRIAZOLE DERIVATIVE:

Species : Rabbit
 Remarks : Information given is based on data obtained from similar substances.

ORGANIC SALT:

Result : Irritating to eyes

CORROSION/SCALE INHIBITOR:

Result : Slightly irritating to eyes

THIAZOLE COMPOUND:

Species : Rabbit
 Result : Corrosive to eyes

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Product:

Remarks : May cause allergic skin reaction.


Components:

INORGANIC SALT:

Test Type : Buehler Test
 Species : Guinea pig
 Method : OPPTS 870.2600
 GLP : yes

TRIAZOLE DERIVATIVE:

Species : Guinea pig
 Remarks : Information given is based on data obtained from similar substances.

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CORROSION/SCALE INHIBITOR:

Species : Guinea pig
Method : Maximisation Test

THIAZOLE COMPOUND:

Test Type : Maximisation Test
Species : Guinea pig
Method : OECD Test Guideline 406
Remarks : Information given is based on data obtained from similar substances.

INORGANIC SALT:

Test Type : Buehler Test
Species : Guinea pig
Method : OPPTS 870.2600
GLP : yes

TRIAZOLE DERIVATIVE:

Species : Guinea pig
Remarks : Information given is based on data obtained from similar substances.

CORROSION/SCALE INHIBITOR:

Species : Guinea pig
Method : Maximisation Test

THIAZOLE COMPOUND:

Test Type : Maximisation Test
Species : Guinea pig
Method : OECD Test Guideline 406
Remarks : Information given is based on data obtained from similar substances.

Germ cell mutagenicity


Not classified based on available information.

Components:

INORGANIC SALT:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster lung cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
Remarks: Information given is based on data obtained from similar substances.

Test Type: Chromosome aberration test in vitro

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Test system: Chinese hamster lung cells
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 473
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

Test Type: Ames test
 Test system: Escherichia coli
 Metabolic activation: without metabolic activation
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

Genotoxicity in vivo : Test Type: chromosome aberration assay
 Species: Mouse
 Method: OECD Test Guideline 475
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

TRIAZOLE DERIVATIVE:

Genotoxicity in vitro : Test Type: Ames test
 Metabolic activation: with metabolic activation
 Result: positive
 Remarks: Information given is based on data obtained from similar substances.


Test Type: in vitro assay
 Test system: mammalian cells
 Metabolic activation: without metabolic activation
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

Test Type: Chromosome aberration test in vitro
 Test system: mammalian cells
 Metabolic activation: with and without metabolic activation
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

Test Type: Ames test
 Metabolic activation: without metabolic activation
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

THIAZOLE COMPOUND:

Genotoxicity in vitro : Test Type: Ames test
 Metabolic activation: with and without metabolic activation

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Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test
 Species: Mouse
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

INORGANIC SALT:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
 Test system: Chinese hamster lung cells
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 476
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

Test Type: Chromosome aberration test in vitro
 Test system: Chinese hamster lung cells
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 473
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.


Test Type: Ames test
 Test system: Escherichia coli
 Metabolic activation: without metabolic activation
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

Genotoxicity in vivo : Test Type: chromosome aberration assay
 Species: Mouse
 Method: OECD Test Guideline 475
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

TRIAZOLE DERIVATIVE:

Genotoxicity in vitro : Test Type: Ames test
 Metabolic activation: with metabolic activation
 Result: positive
 Remarks: Information given is based on data obtained from similar substances.

Test Type: in vitro assay
 Test system: mammalian cells
 Metabolic activation: without metabolic activation
 Result: negative
 Remarks: Information given is based on data obtained from

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similar substances.

Test Type: Chromosome aberration test in vitro
 Test system: mammalian cells
 Metabolic activation: with and without metabolic activation
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

Test Type: Ames test
 Metabolic activation: without metabolic activation
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

THIAZOLE COMPOUND:

Genotoxicity in vitro : Test Type: Ames test
 Metabolic activation: with and without metabolic activation
 Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test
 Species: Mouse
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

May damage fertility or the unborn child.

Components:

INORGANIC SALT:

Reproductive toxicity - Assessment : Clear evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments

INORGANIC SALT:

Reproductive toxicity - Assessment : Clear evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments

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STOT - single exposure

Not classified based on available information.

Components:**INORGANIC SALT:**

Exposure routes : Inhalation
 Target Organs : Respiratory Tract
 Assessment : May cause respiratory irritation.

INORGANIC SALT:

Exposure routes : Inhalation
 Target Organs : Respiratory Tract
 Assessment : May cause respiratory irritation.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information**Product:**

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Product:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 137 mg/l
 Exposure time: 96 h
 Test Type: static test


LC50 (Pimephales promelas (fathead minnow)): 616 mg/l
 Exposure time: 96 h
 Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : LC 50 (Water flea (Ceriodaphnia dubia)): 177 mg/l
 Exposure time: 48 h
 Test Type: static test

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Chronic aquatic toxicity Category 3; Harmful to aquatic life with long lasting effects.

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Components:

INORGANIC SALT:

- Toxicity to fish : LC50 (Danio rerio (zebra fish)): 210 mg/l
 Exposure time: 96 h
 Method: ISO 7346/2
 Remarks: Information given is based on data obtained from similar substances.
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1,700 mg/l
 Exposure time: 48 h
 Remarks: Mortality
 Information given is based on data obtained from similar substances.
- Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 207 mg/l
 Exposure time: 72 h
 Method: OECD Test Guideline 201
 Remarks: Information given is based on data obtained from similar substances.
- Toxicity to microorganisms : EC0 (Pseudomonas putida): 3,454 mg/l
 Exposure time: 0.5 h
 Test Type: Static
 Remarks: Information given is based on data obtained from similar substances.

INORGANIC SALT:


- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,800 mg/l
 Exposure time: 48 h
 Test Type: static test

TRIAZOLE DERIVATIVE:

- Toxicity to fish : LC50 (Danio rerio (zebra fish)): 180 mg/l
 Exposure time: 96 h
 Method: OECD Test Guideline 203
 Remarks: Based on similar product.
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 8.58 mg/l
 Exposure time: 48 h
 Remarks: Based on similar product.

ORGANIC SALT:

- Toxicity to fish : LC50: > 3,300 mg/l
 Remarks: Information given is based on data on the components and the ecotoxicology of similar products.
- Toxicity to daphnia and other aquatic invertebrates : EC50: > 3,300 mg/l
 Exposure time: 48 h
 Remarks: Information given is based on data on the

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components and the ecotoxicology of similar products.

CORROSION/SCALE INHIBITOR:

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): > 1,000 mg/l
Exposure time: 48 h
- Toxicity to algae/aquatic plants : EC50 (Aquatic plants): > 100 mg/l
Exposure time: 72 h

Ecotoxicology Assessment

- Acute aquatic toxicity : Toxic to aquatic life.
- Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.


THIAZOLE COMPOUND:

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.73 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: OECD Test Guideline 203
Remarks: Information given is based on data obtained from similar substances.

LC50 (Bluegill (Lepomis macrochirus)): 3.8 mg/l
Exposure time: 96 h
Test Type: static test
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 19 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : IC50 (Pseudokirchneriella subcapitata (green algae)): 0.3 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 201

ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.5 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Information given is based on data obtained from similar substances.

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.066 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Information given is based on data obtained from

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similar substances.

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 0.041 mg/l
 End point: Growth rate
 Exposure time: 89 d
 Test Type: flow-through test
 Method: OECD Test Guideline 210
 Remarks: Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.08 mg/l
 End point: Reproduction Test
 Exposure time: 21 d
 Method: OECD Test Guideline 211
 Remarks: Information given is based on data obtained from similar substances.

INORGANIC SALT:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 210 mg/l
 Exposure time: 96 h
 Method: ISO 7346/2
 Remarks: Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1,700 mg/l
 Exposure time: 48 h
 Remarks: Mortality
 Information given is based on data obtained from similar substances.

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 207 mg/l
 Exposure time: 72 h
 Method: OECD Test Guideline 201
 Remarks: Information given is based on data obtained from similar substances.


Toxicity to microorganisms : EC0 (Pseudomonas putida): 3,454 mg/l
 Exposure time: 0.5 h
 Test Type: Static
 Remarks: Information given is based on data obtained from similar substances.

INORGANIC SALT:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,800 mg/l
 Exposure time: 48 h
 Test Type: static test

TRIAZOLE DERIVATIVE:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 180 mg/l
 Exposure time: 96 h

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Method: OECD Test Guideline 203
 Remarks: Based on similar product.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 8.58 mg/l
 Exposure time: 48 h
 Remarks: Based on similar product.

ORGANIC SALT:

Toxicity to fish : LC50: > 3,300 mg/l
 Remarks: Information given is based on data on the components and the ecotoxicology of similar products.

Toxicity to daphnia and other aquatic invertebrates : EC50: > 3,300 mg/l
 Exposure time: 48 h
 Remarks: Information given is based on data on the components and the ecotoxicology of similar products.

CORROSION/SCALE INHIBITOR:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
 Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): > 1,000 mg/l
 Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Aquatic plants): > 100 mg/l
 Exposure time: 72 h

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.


THIAZOLE COMPOUND:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.73 mg/l
 Exposure time: 96 h
 Test Type: flow-through test
 Method: OECD Test Guideline 203
 Remarks: Information given is based on data obtained from similar substances.

LC50 (Bluegill (Lepomis macrochirus)): 3.8 mg/l
 Exposure time: 96 h
 Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 19 mg/l
 Exposure time: 48 h
 Test Type: static test
 Method: OECD Test Guideline 202

Toxicity to algae/aquatic : IC50 (Pseudokirchneriella subcapitata (green algae)): 0.3 mg/l

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plants

Exposure time: 96 h
 Method: OECD Test Guideline 201

ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.5 mg/l

Exposure time: 72 h
 Method: OECD Test Guideline 201

Remarks: Information given is based on data obtained from similar substances.

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.066 mg/l

Exposure time: 72 h
 Method: OECD Test Guideline 201

Remarks: Information given is based on data obtained from similar substances.

Toxicity to fish (Chronic toxicity)

: NOEC (Oncorhynchus mykiss (rainbow trout)): 0.041 mg/l

End point: Growth rate

Exposure time: 89 d

Test Type: flow-through test

Method: OECD Test Guideline 210

Remarks: Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

: NOEC (Daphnia magna (Water flea)): 0.08 mg/l

End point: Reproduction Test

Exposure time: 21 d

Method: OECD Test Guideline 211

Remarks: Information given is based on data obtained from similar substances.

Persistence and degradability

Product:

Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days
 61 mg/l

Chemical Oxygen Demand (COD) : 147,341 mg/l

Components:


INORGANIC SALT:

Biodegradability : Result: The methods for determining biodegradability are not applicable to inorganic substances.

Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

ORGANIC SALT:

Biodegradability : Result: Readily biodegradable.

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Biodegradation: 86.27 %
 Exposure time: 28 d
 Remarks: Information given is based on data obtained from similar substances.

THIAZOLE COMPOUND:

Biodegradability : Result: Not readily biodegradable.
 Remarks: Information given is based on data obtained from similar substances.

INORGANIC SALT:

Biodegradability : Result: The methods for determining biodegradability are not applicable to inorganic substances.
 Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

ORGANIC SALT:

Biodegradability : Result: Readily biodegradable.
 Biodegradation: 86.27 %
 Exposure time: 28 d
 Remarks: Information given is based on data obtained from similar substances.

THIAZOLE COMPOUND:

Biodegradability : Result: Not readily biodegradable.
 Remarks: Information given is based on data obtained from similar substances.

Bioaccumulative potential

Components:


THIAZOLE COMPOUND:

Bioaccumulation : Species: Cyprinus carpio (Carp)
 Bioconcentration factor (BCF): < 8
 Exposure time: 6 Weeks
 Concentration: 0.01 mg/l
 Remarks: Information given is based on data obtained from similar substances.

Partition coefficient: n-octanol/water : log Pow: 2.42
 pH: 7

THIAZOLE COMPOUND:

Bioaccumulation : Species: Cyprinus carpio (Carp)
 Bioconcentration factor (BCF): < 8
 Exposure time: 6 Weeks
 Concentration: 0.01 mg/l

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Remarks: Information given is based on data obtained from similar substances.

Partition coefficient: n-octanol/water : log Pow: 2.42
pH: 7

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life with long lasting effects.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code


Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

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Not regulated as a dangerous good

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Corrosive to metals
Respiratory or skin sensitization
Reproductive toxicity
Skin corrosion or irritation
Serious eye damage or eye irritation


SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

- TCSI : Not in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AICS : Not in compliance with the inventory
- DSL : This product contains one or more components that are not on the Canadian DSL and have annual quantity limits.
- ENCS : Not in compliance with the inventory
- KECI : Not in compliance with the inventory
- PICCS : Not in compliance with the inventory
- IECSC : Not in compliance with the inventory
- NZIOC : On the inventory, or in compliance with the inventory

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TSCA list

The following substance(s) is/are subject to a Significant New Use Rule:
MERCURY 7439-97-6

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

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Full text of H-Statements

H290 : May be corrosive to metals.
H302 : Harmful if swallowed.
H314 : Causes severe skin burns and eye damage.
H315 : Causes skin irritation.
H317 : May cause an allergic skin reaction.
H318 : Causes serious eye damage.
H319 : Causes serious eye irritation.
H335 : May cause respiratory irritation.
H360 : May damage fertility or the unborn child.


Full text of other abbreviations

Acute Tox. : Acute toxicity
Eye Dam. : Serious eye damage
Eye Irrit. : Eye irritation
Met. Corr. : Corrosive to metals
Repr. : Reproductive toxicity
Skin Corr. : Skin corrosion
Skin Irrit. : Skin irritation
Skin Sens. : Skin sensitisation
STOT SE : Specific target organ toxicity - single exposure
ACGIH : USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL : USA. NIOSH Recommended Exposure Limits
OSHA P0 : USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)

ACGIH / TWA : 8-hour, time-weighted average
ACGIH / STEL : Short-term exposure limit
NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek

OSHA P0 / TWA : 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN -

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Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN



SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	Quadrasperse® CL4830
Product Use:	Cooling Water Treatment
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424-9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road Glen Allen, VA 23060
Telephone Number for Information:	(800)648-4579
Date of SDS:	April 9, 2018
Revision Date:	April 9, 2018
Revision Number:	DRAFT-180409011114AN

Section 2. Hazard(s) Identification



Signal Word:	DANGER
GHS Classification(s):	Skin corrosion/irritation – Category 1b Eye damage/irritation – Category 1 Acute Toxicity Oral – Category 4
Hazard Statement(s):	H314 Causes severe skin burns and eye damage. H318 Causes serious eye damage. H302 Harmful if swallowed.
Precautionary Statement(s):	
Prevention:	P260 Do not breathe dust/fume/gas/mist/vapors/spray. P264 Wash thoroughly after handling. P270 Do not eat, drink, or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/protective clothing/eye protection/face protection.



Response:

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
 P301 + 330 + 331 IF SWALLOWED: Rinse mouth.
 Do NOT induce vomiting.
 P303 + P361 + P353 IF ON SKIN (or hair):
 Remove/take off immediately all contaminated clothing.
 Rinse skin with water/shower
 P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310 Immediately call a POISON CENTER/doctor.
 P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.

System of Classification Used:

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards Not Otherwise Classified:

None.

Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt.%
Phosphoric acid	7664-38-2	5 - 10
2-Phosphono-1,2,4-butane tricarboxylic acid	37971-36-1	1 - 5
Tetrapotassium pyrophosphate	7320-34-5	3 - 7
Potassium hydroxide	1310-58-3	10 - 30
Tolyltriazole, sodium salt	64665-57-2	1 - 5

Comments

If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

Section 4. First Aid Measures

Inhalation:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
Skin:	Immediately remove/take off all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before re-use. Immediately call a poison center or doctor/physician.
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A

Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	None known.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and recover liquid when possible. Flush spill area with water spray.
Other Statements:	If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802. Reportable Quantity of the product is 1597 Gal.

Section 7. Handling and Storage

Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Store above Freeze Point.

Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits
Phosphoric acid	ACGIH TLV	3 mg/m ³ STEL
	OSHA PEL	1 mg/m ³ TWA
2-Phosphono-1,2,4-butane tricarboxylic acid	N/E	N/E
Tetrapotassium pyrophosphate	N/E	N/E
Potassium hydroxide	ACGIH TLV	2 mg/m ³ Ceiling
Tolyltriazole, sodium salt	N/E	N/E



Engineering Controls:

Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

Personal Protection

Eyes: Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.

Skin: Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.

Respiratory: If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Amber, Clear
Specific Gravity:	1.341 @ 20°C
pH:	12.8 @ 20°C, 100.0%
Freezing Point:	7°F
Flash Point:	N/D
Odor:	Mild
Melting Point:	N/A
Initial Boiling Point and Boiling Range:	212°F
Solubility in Water:	Complete
Evaporation Rate:	As Water
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	<100 CPS @ 20°C
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	11.18 LB/GA
Vapor Pressure:	N/D
% VOC:	N/D
Odor Threshold	N/D
n-octanol Partition Coefficient	N/D
Decomposition Temperature	N/D

Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Acids.
Hazardous Decomposition Products:	Oxides of nitrogen, Oxides of carbon.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

Section 11. Toxicological Information

Acute Toxicity

Chemical Name	Exposure	Type of Effect	Concentration	Species
Phosphoric acid	Dermal	LD50	2740 MG/KG	Rabbit
	Oral	LD50	1530 MG/KG	Rat
2-Phosphono-1,2,4-butane tricarboxylic acid	Oral	LD50	>6500 MG/KG	Rat
	Oral	LD50	2980 MG/KG	Rat
Tetrapotassium pyrophosphate	Oral	LD50	2980 MG/KG	Rat
	Dermal	LD50	>7940 MG/KG	Rabbit
Potassium hydroxide	Oral	LD50	365 MG/KG	Rat
Tolyltriazole, sodium salt	Oral	LD50	920 MG/KG	Rat
	Dermal	LD50	>2 G/KG	Rabbit

Carcinogenicity Category

Component	Source	Code	Brief Description
Phosphoric acid	N/E	N/E	N/E
2-Phosphono-1,2,4-butane tricarboxylic acid	N/E	N/E	N/E
Tetrapotassium pyrophosphate	N/E	N/E	N/E
Potassium hydroxide	N/E	N/E	N/E
Tolyltriazole, sodium salt	N/E	N/E	N/E

Likely Routes of Exposure: N/D



Symptoms

Inhalation: N/D

Eye Contact: N/D

Skin Contact: N/D

Ingestion: N/D

Skin Corrosion/Irritation: N/D

Serious Eye Damage/Eye Irritation: N/D

Sensitization: N/D

Germ Cell Mutagenicity: N/D

Reproductive/Developmental Toxicity: N/D

Specific Target Organ Toxicity

Single Exposure: N/D

Repeated Exposure: N/D

Aspiration Hazard: N/D

Comments: None.

Section 12. Ecological Information

Ecotoxicity

Species	Duration	Type of Effect	Test Results
Ceriodaphnia dubia	48h	LC50	901 mg/l
	7d	NOEC	63 mg/l
	7d	LOEC	125 mg/l
	7d	IC25	83 mg/l
Fathead Minnow	96h	LC50	568 mg/l

Persistence and Biodegradability: N/D

Bioaccumulative Potential: N/D



Mobility In Soil: N/D

Other Adverse Effects: N/D

Comments: LOEC, NOEC, and IC25 chronic data are based on a similar product.

Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations. EPA corrosivity characteristic hazardous waste D002 when disposed of in the original product form.

Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	UN1760	CORROSIVE LIQUIDS, N.O.S.	(SODIUM TOLYLTRIAZOLE AND POTASSIUM HYDROXIDE)	8	PGIII
Over 1597 GA	RQ UN1760	CORROSIVE LIQUIDS, N.O.S.	(SODIUM TOLYLTRIAZOLE AND POTASSIUM HYDROXIDE)	8	PGIII
TDG	UN1760	CORROSIVE LIQUIDS, N.O.S.	(SODIUM TOLYLTRIAZOLE AND POTASSIUM HYDROXIDE)	8	PGIII
ICAO	UN1760	CORROSIVE LIQUIDS, N.O.S.	(SODIUM TOLYLTRIAZOLE AND POTASSIUM HYDROXIDE)	8	PGIII

Note: N/A

Section 15. Regulatory Information

Inventory Status

United States (TSCA):
Canada (DSL/NDSL):

All ingredients listed.
All ingredients listed.



Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes

Fire Hazard:	No
Reactive Hazard:	No
Release of Pressure:	No
Acute Health Hazard:	Yes
Chronic Health Hazard:	No

Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
Phosphoric acid	No	N/A	5000
2-Phosphono-1,2,4-butane tricarboxylic acid	N/A	N/A	N/A
Tetrapotassium pyrophosphate	N/A	N/A	N/A
Potassium hydroxide	N/A	N/A	1000
Tolyltriazole, sodium salt	N/A	N/A	N/A

Comments: None.

State Regulations

California Proposition 65: None known.

Special Regulations

Component	States
Phosphoric acid	MA, MN, NY, WA
2-Phosphono-1,2,4-butane tricarboxylic acid	None.
Tetrapotassium pyrophosphate	None.
Potassium hydroxide	MA, MN, NY, PA, WA
Tolyltriazole, sodium salt	None.

International Regulations

Canada

WHMIS Classification: D2B (Toxic Material)
E (Corrosive Material)

Controlled Product Regulations (CPR): This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.



Compliance Information

NSF:	N/A
Food Regulations:	N/A
KOSHER:	This product has not been evaluated for Kosher approval.
Halal:	This product has not been evaluated for Halal approval.
FIFRA:	N/A
Other:	None

Comments: None.

Section 16. Other Information

HMIS Hazard Rating

Health:	2
Flammability:	0
Physical Hazard:	0
PPE:	X

Notes: The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.

The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value




Abbreviation	Definition
TWA	Time Weight Average
UNK	Unknown

Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Revision Date: April 9, 2018

Disclaimer

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, ChemTreat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers.

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Drewphos™ 2000 BOILER WATER TREATMENT
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Corrosion inhibitor.

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion : Category 1

Serious eye damage : Category 1

GHS label elements

Hazard pictograms :




Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/
face protection.

Response:

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P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (%)
sodium hydroxide	1310-73-2	Met. Corr. 1; H290 Skin Corr. 1A; H314 Eye Dam. 1; H318	>= 1.5 - < 5


Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : Move to fresh air.
If breathed in, move person into fresh air.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : If on skin, rinse well with water.


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Wash contaminated clothing before re-use.

- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : Get medical attention immediately.
Do NOT induce vomiting.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
irritation (nose, throat, airways)
Cough
lung edema (fluid buildup in the lung tissue)
Difficulty in breathing
Causes serious eye damage.
Causes severe burns.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Oxides of phosphorus
Sodium oxides
corrosive vapors
toxic fumes
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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Special protective equipment : In the event of fire, wear self-contained breathing apparatus. for firefighters

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.


SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust. When diluting, always add the product to water. Never add water to the product. Container hazardous when empty. Avoid contact with skin and eyes. Smoking, eating and drinking should be prohibited in the application area. For personal protection see section 8. Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type	Control	Basis
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		(Form of exposure)	parameters / Permissible concentration	
sodium hydroxide	1310-73-2	C	2 mg/m3	ACGIH
		C	2 mg/m3	NIOSH REL
		TWA	2 mg/m3	OSHA Z-1
		C	2 mg/m3	OSHA P0

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Hand protection

Material : Nitrile rubber

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.


Skin and body protection : Wear as appropriate:
Impervious clothing
Chemical resistant apron
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.

Hygiene measures : Wash hands before breaks and at the end of workday.
When using do not eat or drink.
Ensure that eyewash stations and safety showers are close to the workstation location.
When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES


Appearance : Aqueous solution

Odour : No data available

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Odour Threshold : No data available
pH : 13
Melting point/freezing point : No data available
Boiling point/boiling range : 212 °F / 100 °C
(1,013.33 hPa)
Calculated Phase Transition Liquid/Gas
Flash point : No data available
Evaporation rate : No data available
Flammability (solid, gas) : No data available
Self-ignition : No data available
Upper explosion limit / Upper flammability limit : No data available
Lower explosion limit / Lower flammability limit : No data available
Vapour pressure : 23.33 hPa (68 °F / 20 °C)
Calculated Vapor Pressure
Relative vapour density : No data available
Relative density : No data available
Density : 1.060 g/cm³
Solubility(ies)
Water solubility : completely miscible
Solubility in other solvents : No data available
Partition coefficient: n-octanol/water : No data available
Decomposition temperature : No data available
Viscosity
Viscosity, dynamic : No data available
Viscosity, kinematic : No data available
Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

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Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

Conditions to avoid : excessive heat
Exposure to sunlight.
Exposure to moisture

Incompatible materials : Acids
halogenated hydrocarbons
Metals
organic nitro compounds
Strong oxidizing agents

Hazardous decomposition products : Oxides of phosphorus
Sodium oxides
corrosive vapors
toxic fumes

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Components:

sodium hydroxide:

Acute oral toxicity : LDLo (Rabbit): 500 mg/kg

Skin corrosion/irritation

Causes severe burns.

Product:

Remarks : Causes severe skin burns and eye damage.
The feeling of irritation or pain may be delayed.

Components:


sodium hydroxide:

Result : Causes severe burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

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Remarks : May cause irreversible eye damage.

Components:

sodium hydroxide:

Result : Corrosive to eyes

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.


Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

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SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

Components:

sodium hydroxide:

Toxicity to fish : LC50 (Gambusia affinis (Mosquito fish)): 125 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 34.59 - 47.13 mg/l
Exposure time: 48 h
Remarks: Intoxication

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available


SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.

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Dispose of as unused product.
Empty containers should be taken to an approved waste
handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN number : UN 3266
 Proper shipping name : Corrosive liquid, basic, inorganic, n.o.s. (SODIUM HYDROXIDE)
 Class : 8
 Packing group : III
 Packing instruction (cargo aircraft) : 856
 Packing instruction (passenger aircraft) : 852
 Marine pollutant : no

IMDG-Code

UN number : UN 3266
 Proper shipping name : CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM HYDROXIDE)
 Class : 8
 Packing group : III
 EmS Code : F-A, S-B
 Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.


National Regulations

49 CFR

UN number : UN 3266
 Proper shipping name : Corrosive liquid, basic, inorganic, n.o.s. (SODIUM HYDROXIDE)
 Class : 8
 Packing group : III
 ERG Code : 154
 Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
sodium hydroxide	1310-73-2	1000	52479

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65


Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory

TSCA list

The following substance(s) is/are subject to a Significant New Use Rule:
MERCURY 7439-97-6

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No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

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Full text of H-Statements

H290 : May be corrosive to metals.
H314 : Causes severe skin burns and eye damage.
H318 : Causes serious eye damage.

Full text of other abbreviations

Eye Dam. : Serious eye damage
Met. Corr. : Corrosive to metals
Skin Corr. : Skin corrosion
ACGIH : USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL : USA. NIOSH Recommended Exposure Limits
OSHA P0 : USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / C : Ceiling limit
NIOSH REL / C : Ceiling value not be exceeded at any time.
OSHA P0 / C : Ceiling limit
OSHA Z-1 / TWA : 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals;

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OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data


SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Drewphos™ 2600
BOILER WATER TREATMENT
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion : Category 1
Serious eye damage : Category 1

GHS label elements

Hazard pictograms :




Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/
face protection.

Response:

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT

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induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (%)
sodium hydroxide	1310-73-2	Met. Corr. 1; H290 Skin Corr. 1A; H314 Eye Dam. 1; H318	>= 1.5 - < 5

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : Move to fresh air.
If breathed in, move person into fresh air.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.


In case of skin contact : If on skin, rinse well with water.
Wash contaminated clothing before re-use.

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- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : Get medical attention immediately.
Do NOT induce vomiting.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Cough
lung edema (fluid buildup in the lung tissue)
Difficulty in breathing
Excessive levels of phosphorus can cause low blood calcium, with tetany and convulsions.
Causes serious eye damage.
Causes severe burns.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : If product is heated above its flash point it will produce vapors sufficient to support combustion. Vapors are heavier than air and may travel along the ground and be ignited by heat, pilot lights, other flames and ignition sources at locations near the point of release.
Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
Oxides of phosphorus

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Sodium oxides
corrosive vapors
toxic fumes


- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.
When diluting, always add the product to water. Never add water to the product.
Container hazardous when empty.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

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Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
sodium hydroxide	1310-73-2	C	2 mg/m3	ACGIH
		C	2 mg/m3	NIOSH REL
		TWA	2 mg/m3	OSHA Z-1
		C	2 mg/m3	OSHA P0

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment


Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.
Maintain eye wash station in immediate work area.

Skin and body protection : Wear as appropriate:
Impervious clothing
Chemical resistant apron
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.

Hygiene measures : Wash hands before breaks and at the end of workday.
When using do not eat or drink.
Ensure that eyewash stations and safety showers are close to the workstation location.
When using do not smoke.

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: white light yellow
Odour	: No data available
Odour Threshold	: No data available
pH	: 12
Melting point/freezing point	: 25 °F / -4 °C
Boiling point/boiling range	: 212 °F / 100 °C (1,013.33 hPa) Calculated Phase Transition Liquid/Gas
Flash point	: 200.1 °F / 93.4 °C Calculated Flash Point
Evaporation rate	: > 1 Ethyl Ether
Flammability (solid, gas)	: No data available
Self-ignition	: No data available
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Vapour pressure	: 32 hPa (68 °F / 20 °C) Calculated Vapor Pressure
Relative vapour density	: No data available
Relative density	: No data available
Density	: 1.08 - 1.18 g/cm ³ (77.0 °F / 25.0 °C)
Solubility(ies)	

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Water solubility	: No data available
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Decomposition temperature	: No data available
Viscosity	
Viscosity, dynamic	: No data available
Viscosity, kinematic	: No data available
Oxidizing properties	: No data available


SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No decomposition if stored and applied as directed.
Chemical stability	: Stable under recommended storage conditions.
Possibility of hazardous reactions	: Product will not undergo hazardous polymerization.
Conditions to avoid	: Exposure to sunlight. Exposure to moisture
Incompatible materials	: Acids alkalis halogenated hydrocarbons Metals nitrites organic nitro compounds Strong oxidizing agents sulphites
Hazardous decomposition products	: Oxides of phosphorus Sodium oxides Carbon monoxide Carbon dioxide (CO ₂) corrosive vapors toxic fumes

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

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Components:

sodium hydroxide:

Acute oral toxicity : LDLo (Rabbit): 500 mg/kg

Skin corrosion/irritation

Causes severe burns.

Product:

Remarks : Causes severe skin burns and eye damage.
The feeling of irritation or pain may be delayed.

Components:

sodium hydroxide:

Result : Causes severe burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks : May cause irreversible eye damage.

Components:

sodium hydroxide:

Result : Corrosive to eyes

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.


Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,770 mg/l
Exposure time: 96 h
Test Type: static test

LC50 (Pimephales promelas (fathead minnow)): 2,680 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : LC 50 (Daphnia magna (Water flea)): 2,870 mg/l
Exposure time: 48 h
Test Type: static test

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.


Chronic aquatic toxicity : Not classified based on available information.

Components:

sodium hydroxide:

Toxicity to fish : LC50 (Gambusia affinis (Mosquito fish)): 125 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 34.59 - 47.13 mg/l
Exposure time: 48 h
Remarks: Intoxication

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Persistence and degradability

Product:

Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days < 1,000 mg/l

Chemical Oxygen Demand (COD) : 74,800 mg/l
Method: Chemical oxygen demand

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN number : UN 1719
Proper shipping name : Caustic alkali liquid, n.o.s. (SODIUM HYDROXIDE)
Class : 8
Packing group : III
Packing instruction (cargo aircraft) : 856
Packing instruction : 852

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(passenger aircraft)
Marine pollutant : no

IMDG-Code

UN number : UN 1719
 Proper shipping name : CAUSTIC ALKALI LIQUID, N.O.S. (SODIUM HYDROXIDE)
 Class : 8
 Packing group : III
 EmS Code : F-A, S-B
 Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

UN number : UN 1719
 Proper shipping name : Caustic alkali liquids, n.o.s. (SODIUM HYDROXIDE)
 Class : 8
 Packing group : III
 ERG Code : 154
 Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity


Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
sodium hydroxide	1310-73-2	1000	22281

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Skin corrosion or irritation
 Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

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California Prop. 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : Not in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory
- NZIOC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

Revision Date : 08/22/2022

Full text of H-Statements

- H290 : May be corrosive to metals.
- H314 : Causes severe skin burns and eye damage.
- H318 : Causes serious eye damage.

Full text of other abbreviations

- Eye Dam. : Serious eye damage
- Met. Corr. : Corrosive to metals
- Skin Corr. : Skin corrosion
- ACGIH : USA. ACGIH Threshold Limit Values (TLV)
- NIOSH REL : USA. NIOSH Recommended Exposure Limits
- OSHA P0 : USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
- OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1

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	Limits for Air Contaminants
ACGIH / C	: Ceiling limit
NIOSH REL / C	: Ceiling value not be exceeded at any time.
OSHA P0 / C	: Ceiling limit
OSHA Z-1 / TWA	: 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet


Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports


The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any

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other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

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		PM 29666-00

SECTION 1. IDENTIFICATION

Product identifier

Trade name : Drewphos™ 3000 deposit inhibitor
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : BOILER WATER TREATMENT

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Corrosive to metals : Category 1

Skin corrosion : Category 1

Serious eye damage : Category 1

GHS label elements


Hazard pictograms :



Signal word : Danger

Hazard statements : H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

Precautionary statements : **Prevention:**
P234 Keep only in original container.
P264 Wash skin thoroughly after handling.

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P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.

P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.

P363 Wash contaminated clothing before reuse.

P390 Absorb spillage to prevent material damage.

Storage:

P405 Store locked up.

P406 Store in corrosive resistant container with a resistant inner liner.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (%)
sodium hydroxide	1310-73-2	Met. Corr. 1; H290 Skin Corr. 1A; H314 Eye Dam. 1; H318	>= 1.5 - < 5

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : Move to fresh air.

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If breathed in, move person into fresh air.
 Keep patient warm and at rest.
 If unconscious, place in recovery position and seek medical advice.
 If symptoms persist, call a physician.

- In case of skin contact : If on skin, rinse well with water.
Wash contaminated clothing before re-use.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : Get medical attention immediately.
Do NOT induce vomiting.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Cough
lung edema (fluid buildup in the lung tissue)
Difficulty in breathing
Excessive levels of phosphorus can cause low blood calcium, with tetany and convulsions.
Causes serious eye damage.
Causes severe burns.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

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- Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
Oxides of phosphorus
Sodium oxides
corrosive vapors
toxic fumes
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.
When diluting, always add the product to water. Never add water to the product.
Container hazardous when empty.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and

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kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with
the technological safety standards.

Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
sodium hydroxide	1310-73-2	C	2 mg/m3	ACGIH
		C	2 mg/m3	NIOSH REL
		TWA	2 mg/m3	OSHA Z-1
		C	2 mg/m3	OSHA P0

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment


Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.
Maintain eye wash station in immediate work area.

Skin and body protection : Wear as appropriate:
Impervious clothing
Chemical resistant apron
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.


Hygiene measures : Wash hands before breaks and at the end of workday.

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When using do not eat or drink.
Ensure that eyewash stations and safety showers are close
to the workstation location.
When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: colourless, to, light yellow
Odour	: No data available
Odour Threshold	: No data available
pH	: ca. 12
Melting point/freezing point	: 27 °F / -3 °C
Boiling point/boiling range	: 212 °F / 100 °C (1,013.33 hPa) Calculated Phase Transition Liquid/Gas
Flash point	: No data available
Evaporation rate	: > 1 Ethyl Ether
Flammability (solid, gas)	: No data available
Self-ignition	: No data available
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Vapour pressure	: 23.33 hPa (68 °F / 20 °C) Calculated Vapor Pressure
Relative vapour density	: No data available
Relative density	: No data available
Density	: 1.04 - 1.14 g/cm ³ (68 °F / 20 °C)
Solubility(ies) Water solubility	: completely soluble

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Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Oxidizing properties : No data available

Metal corrosion rate : 8.22 mm/a

Particle size : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

Conditions to avoid : Exposure to sunlight.
Exposure to moisture


Incompatible materials : Acids
halogenated hydrocarbons
Metals
organic nitro compounds
Strong oxidizing agents

Hazardous decomposition products : Oxides of phosphorus
Sodium oxides
Carbon monoxide
Carbon dioxide (CO₂)
corrosive vapors
toxic fumes

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

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Components:

sodium hydroxide:

Acute oral toxicity : LDLo (Rabbit): 500 mg/kg

Skin corrosion/irritation

Causes severe burns.

Product:

Result : Corrosive to skin

Remarks : Causes severe skin burns and eye damage.
The feeling of irritation or pain may be delayed.

Components:

sodium hydroxide:

Result : Causes severe burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Result : Corrosive to eyes

Remarks : May cause irreversible eye damage.

Components:

sodium hydroxide:

Result : Corrosive to eyes

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity


Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

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NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 16,500 mg/l
Exposure time: 96 h
Test Type: static test
Remarks: Information given is based on data on the components and the ecotoxicology of similar products.

LC50 (Pimephales promelas (fathead minnow)): 8,840 mg/l
Exposure time: 96 h
Test Type: static test
Remarks: Information given is based on data on the components and the ecotoxicology of similar products.

Toxicity to daphnia and other aquatic invertebrates : LC 50 (Daphnia magna (Water flea)): 8,250 mg/l
Exposure time: 48 h
Test Type: static test
Remarks: Information given is based on data on the components and the ecotoxicology of similar products.

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

Components:

sodium hydroxide:

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Toxicity to fish : LC50 (Gambusia affinis (Mosquito fish)): 125 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 34.59 - 47.13 mg/l
Exposure time: 48 h
Remarks: Intoxication

Persistence and degradability**Product:**

Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days
< 50 mg/l

Chemical Oxygen Demand (COD) : 24.0 mg/l

Components:**sodium hydroxide:**

Biodegradability : Result: The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects**Product:**


Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste

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handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN number : UN 3266
Proper shipping name : Corrosive liquid, basic, inorganic, n.o.s. (SODIUM HYDROXIDE)
Class : 8
Packing group : III
Packing instruction (cargo aircraft) : 856
Packing instruction (passenger aircraft) : 852

IMDG-Code

UN number : UN 3266
Proper shipping name : CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM HYDROXIDE)
Class : 8
Packing group : III
EmS Code : F-A, S-B
Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.


National Regulations

49 CFR

UN number : UN 3266
Proper shipping name : Corrosive liquid, basic, inorganic, n.o.s. (SODIUM HYDROXIDE)
Class : 8
Packing group : III
ERG Code : 154
Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
sodium hydroxide	1310-73-2	1000	22924

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Corrosive to metals
Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.


The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

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SECTION 16. OTHER INFORMATION

Further information

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Full text of H-Statements

H290 : May be corrosive to metals.
H314 : Causes severe skin burns and eye damage.
H318 : Causes serious eye damage.

Full text of other abbreviations

Eye Dam. : Serious eye damage
Met. Corr. : Corrosive to metals
Skin Corr. : Skin corrosion
ACGIH : USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL : USA. NIOSH Recommended Exposure Limits
OSHA P0 : USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / C : Ceiling limit
NIOSH REL / C : Ceiling value not be exceeded at any time.
OSHA P0 / C : Ceiling limit
OSHA Z-1 / TWA : 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure

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Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECL - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data


SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Amersite™ 2
 CORROSION INHIBITOR
 ™ Trademark, Solenis or its subsidiaries or affiliates,
 registered in various countries

Recommended use of the chemical and restrictions on use

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSPProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity (Oral) : Category 4

GHS label elements

Hazard pictograms :




Signal word : Warning

Hazard statements : H302 Harmful if swallowed.

Precautionary statements : **Prevention:**
 P264 Wash skin thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.

Response:
 P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.

Disposal:
 P501 Dispose of contents/ container to an approved waste

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disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture


Components

Chemical name	CAS-No.	Classification	Concentration (%)
SODIUM BISULFITE	7631-90-5	Acute Tox. 4; H302	>= 30 - < 40

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
- In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
If eye irritation persists, consult a specialist.
- If swallowed : IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Sulphur dioxide may be released if this material comes into

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contact with acids, water and/or ice. In contact with moisture, sulfur dioxide forms sulfuric acid which is corrosive to skin and mucous membranes.
Harmful if swallowed.


Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : sodium sulphide residue
Sulphur oxides
Sodium oxides
sulfur oxides
sodium monoxide
sulfur dioxide
toxic fumes
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Standard procedure for chemical fires.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

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SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.
Do not smoke.
Container hazardous when empty.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Electrical installations / working materials must comply with the technological safety standards.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION


Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
SODIUM BISULFITE	7631-90-5	TWA	5 mg/m3	ACGIH
		TWA	5 mg/m3	NIOSH REL

- Engineering measures** : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

- Respiratory protection : A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any

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other circumstances where an air-purifying respirator may not provide adequate protection.

Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.

Skin and body protection : Wear as appropriate:
 Impervious clothing
 Safety shoes
 Choose body protection according to the amount and concentration of the dangerous substance at the work place.
 Wear resistant gloves (consult your safety equipment supplier).

Hygiene measures : Wash hands before breaks and at the end of workday.
 When using do not eat or drink.
 When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : light yellow

light pink

clear

Odour : pungent


Odour Threshold : No data available

pH : 4.1

Melting point/freezing point : 212 °F / 100 °C

Boiling point/boiling range : > 212 °F / 100 °C
 (1013 hPa)

Flash point : does not flash

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Evaporation rate : > 1
Ethyl Ether

Flammability (solid, gas) : No data available

Self-ignition : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : 17.5000000 mmHg

Relative vapour density : > 1
AIR=1

Relative density : 1.3 (68 °F / 20 °C)

Density : 1.3 g/cm3 (77 °F / 25 °C)

Solubility(ies)
Water solubility : soluble

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Decomposition temperature : No data available

Viscosity
Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

Conditions to avoid : excessive heat
Freezing temperatures.
Heat, flames and sparks.
Heat

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Exposure to air.
Exposure to moisture

Incompatible materials : Acids
Alkali metals
Alkaline earth metals
aluminum
magnesium
Oxidizing agents
Strong bases
water

Hazardous decomposition products : Sulphur oxides
Sodium oxides
sodium sulfide residue
toxic fumes

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if swallowed.

Product:

Acute inhalation toxicity : Remarks: Excessive heat or contact with acids, water and/or ice, releases sulfur dioxide gas which may be harmful or deadly if inhaled.

Components:

SODIUM BISULFITE:

Acute oral toxicity : Assessment: The component/mixture is classified as acute oral toxicity, category 4.

Acute dermal toxicity : LD50 (Rat, male and female): > 2 g/kg
Assessment: No adverse effect has been observed in acute dermal toxicity tests.

Skin corrosion/irritation

Not classified based on available information.


Components:

SODIUM BISULFITE:

Result : Not irritating to skin

Serious eye damage/eye irritation

Not classified based on available information.

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Product:

Remarks : Unlikely to cause eye irritation or injury.
Solutions may be severely irritating or cause burns.

Components:

SODIUM BISULFITE:

Result : Not irritating to eyes

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

SODIUM BISULFITE:

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.


Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data is available on the product itself.

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Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 369 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : LC 50 (Daphnia magna (Water flea)): 833.9 mg/l
Exposure time: 48 h

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

Components:

SODIUM BISULFITE:

Toxicity to fish : LC50 (Gambusia affinis (Mosquito fish)): 240 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 119 mg/l
Exposure time: 48 h
Method: Static
Remarks: Mortality

Persistence and degradability

Product:

Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days
103 mg/l


Chemical Oxygen Demand (COD) : 59,000 mg/l
Method: Chemical oxygen demand
69,300 mg/l

Bioaccumulative potential

Components:

SODIUM BISULFITE:

Partition coefficient: n-octanol/water : Remarks: No data available

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Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.

Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION


International Regulations

IATA-DGR

UN number : UN 2693
Proper shipping name : Bisulphites, aqueous solution, n.o.s. (SODIUM BISULFITE)
Class : 8
Packing group : III
Packing instruction (cargo aircraft) : 856
Packing instruction (passenger aircraft) : 852
Marine pollutant : no

IMDG-Code

UN number : UN 2693
Proper shipping name : BISULPHITES, AQUEOUS SOLUTION, N.O.S. (SODIUM BISULFITE)
Class : 8
Packing group : III
EmS Code : F-A, S-B

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Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

UN number : UN 2693
 Proper shipping name : Bisulfites, aqueous solutions, n.o.s.
 Class : 8
 Packing group : III
 ERG Code : 154
 Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
SODIUM BISULFITE	7631-90-5	5000	13833

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Acute toxicity (any route of exposure)

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

TCSI : On the inventory, or in compliance with the inventory

TSCA : All substances listed as active on the TSCA inventory

AIIC : On the inventory, or in compliance with the inventory

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DSL : All components of this product are on the Canadian DSL

ENCS : On the inventory, or in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

NZIOC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION
Further information

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Full text of H-Statements

H302 : Harmful if swallowed.

Full text of other abbreviations

Acute Tox. : Acute toxicity


ACGIH : USA. ACGIH Threshold Limit Values (TLV)

NIOSH REL : USA. NIOSH Recommended Exposure Limits

ACGIH / TWA : 8-hour, time-weighted average

NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO -

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International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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Key literature references and sources of data


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SOLENIS internal data including own and sponsored test reports

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Amersite™ 11 CORROSION INHIBITOR
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : BOILER WATER TREATMENT

Details of the supplier of the safety data sheet Solenis LLC 2475 Pinnacle Drive Wilmington, DE 19803 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion : Category 1

Serious eye damage : Category 1

GHS label elements

Hazard pictograms :




Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/
face protection.

Response:

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P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (%)
sodium hydroxide	1310-73-2	Met. Corr. 1; H290 Skin Corr. 1A; H314 Eye Dam. 1; H318	>= 1.5 - < 5


Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : Move to fresh air.
If breathed in, move person into fresh air.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : If on skin, rinse well with water.


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Wash contaminated clothing before re-use.

- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : Get medical attention immediately.
Do NOT induce vomiting.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Cough
lung edema (fluid buildup in the lung tissue)
Difficulty in breathing
Sulphur dioxide may be released if this material comes into contact with acids, water and/or ice. In contact with moisture, sulfur dioxide forms sulfuric acid which is corrosive to skin and mucous membranes.
Causes serious eye damage.
Causes severe burns.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : sodium monoxide
sodium sulphide residue
sulfur dioxide
toxic fumes
corrosive vapors

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Sodium oxides
Carbon monoxide
Carbon dioxide (CO₂)
Hydrocarbons


- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.
When diluting, always add the product to water. Never add water to the product.
Container hazardous when empty.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

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Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
sodium hydroxide	1310-73-2	C	2 mg/m3	ACGIH
		C	2 mg/m3	NIOSH REL
		TWA	2 mg/m3	OSHA Z-1
		C	2 mg/m3	OSHA P0

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment


Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.
Maintain eye wash station in immediate work area.


Skin and body protection : Wear as appropriate:
Impervious clothing
Chemical resistant apron
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.

Hygiene measures : Wash hands before breaks and at the end of workday.
When using do not eat or drink.
Ensure that eyewash stations and safety showers are close to the workstation location.
When using do not smoke.

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	greenish-blue
Odour	:	No data available
Odour Threshold	:	No data available
pH	:	13.2
Melting point/freezing point	:	No data available
Boiling point/boiling range	:	212 °F / 100 °C (1,013.333333 hPa) Calculated Phase Transition Liquid/Gas
Flash point	:	Not applicable
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Self-ignition	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	1.142 g/cm ³ (77 °F / 25 °C)
Solubility(ies)		
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Decomposition temperature	:	No data available

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Viscosity
 Viscosity, dynamic : No data available
 Viscosity, kinematic : No data available
 Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.
 Chemical stability : Stable under recommended storage conditions.
 Possibility of hazardous reactions : Product will not undergo hazardous polymerization.
 Conditions to avoid : excessive heat
 Exposure to sunlight.
 Incompatible materials : Acids
 halogenated hydrocarbons
 Metals
 organic nitro compounds
 Strong oxidizing agents
 water
 Hazardous decomposition products : Sodium oxides
 sodium sulfide residue
 toxic fumes
 corrosive vapors
 Carbon monoxide
 Carbon dioxide (CO₂)
 Hydrocarbons

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.


Product:

Acute inhalation toxicity : Remarks: Excessive heat or contact with acids, water and/or ice, releases sulfur dioxide gas which may be harmful or deadly if inhaled.

Components:

sodium hydroxide:

Acute oral toxicity : LDLo (Rabbit): 500 mg/kg

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Skin corrosion/irritation

Causes severe burns.

Product:

Remarks : Causes severe skin burns and eye damage.
The feeling of irritation or pain may be delayed.

Components:

sodium hydroxide:

Result : Causes severe burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks : May cause irreversible eye damage.
Solutions may be severely irritating or cause burns.

Components:

sodium hydroxide:

Result : Corrosive to eyes

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.


NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

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STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 8,400 mg/l
Exposure time: 96 h
Test Type: static test

LC50 (Pimephales promelas (fathead minnow)): 10,800 mg/l
Exposure time: 48 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : LC50 (Water flea (Ceriodaphnia dubia)): 4,060 mg/l
Exposure time: 48 h
Test Type: static test

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

Components:

sodium hydroxide:


Toxicity to fish : LC50 (Gambusia affinis (Mosquito fish)): 125 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 34.59 - 47.13 mg/l
Exposure time: 48 h
Remarks: Intoxication

Persistence and degradability

Components:

sodium hydroxide:

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Biodegradability : Result: The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations


IATA-DGR

UN number : UN 3266
Proper shipping name : Corrosive liquid, basic, inorganic, n.o.s. (SODIUM HYDROXIDE)

Class : 8
Packing group : II
Packing instruction (cargo aircraft) : 855
Packing instruction (passenger aircraft) : 851

IMDG-Code

UN number : UN 3266
Proper shipping name : CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM

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Class : 8 (HYDROXIDE)
 Packing group : II
 EmS Code : F-A, S-B
 Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

UN number : UN 3266
 Proper shipping name : Corrosive liquid, basic, inorganic, n.o.s. (SODIUM HYDROXIDE)
 Class : 8
 Packing group : II
 ERG Code : 154
 Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
sodium hydroxide	1310-73-2	1000	29708

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.


SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Skin corrosion or irritation
 Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

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Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : Not in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory
- NZIOC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information


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Full text of H-Statements

- H290 : May be corrosive to metals.
- H314 : Causes severe skin burns and eye damage.
- H318 : Causes serious eye damage.

Full text of other abbreviations

- Eye Dam. : Serious eye damage
- Met. Corr. : Corrosive to metals
- Skin Corr. : Skin corrosion
- ACGIH : USA. ACGIH Threshold Limit Values (TLV)
- NIOSH REL : USA. NIOSH Recommended Exposure Limits
- OSHA P0 : USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
- OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

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ACGIH / C : Ceiling limit
 NIOSH REL / C : Ceiling value not be exceeded at any time.
 OSHA P0 / C : Ceiling limit
 OSHA Z-1 / TWA : 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet


Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports


The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any

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other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Amersite™ 61W CORROSION INHIBITOR
 ™ Trademark, Solenis or its subsidiaries or affiliates,
 registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Industrial chemical

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

GHS label elements

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS


Substance / Mixture : Mixture

Components

No hazardous ingredients

SECTION 4. FIRST AID MEASURES


General advice : No hazards which require special first aid measures.

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- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
- In case of eye contact : Remove contact lenses.
Protect unharmed eye.
- If swallowed : Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : No symptoms known or expected.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Specific hazards during firefighting : If product is heated above its flash point it will produce vapors sufficient to support combustion. Vapors are heavier than air and may travel along the ground and be ignited by heat, pilot lights, other flames and ignition sources at locations near the point of release.
Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Standard procedure for chemical fires.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

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SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Smoking, eating and drinking should be prohibited in the application area. For personal protection see section 8.
- Conditions for safe storage : Electrical installations / working materials must comply with the technological safety standards.
- Materials to avoid : No materials to be especially mentioned.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION


Components with workplace control parameters

Contains no substances with occupational exposure limit values.

- Engineering measures** : General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

- Respiratory protection : No personal respiratory protective equipment normally required.
- Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.

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Skin and body protection : Wear as appropriate:
Safety shoes
Wear resistant gloves (consult your safety equipment
supplier).

Hygiene measures : General industrial hygiene practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : white
light yellow

Odour : No data available

Odour Threshold : No data available

pH : 7

Melting point/freezing point : No data available

Boiling point/boiling range : 212 °F / 100 °C
(1,013.333333 hPa)
Calculated Phase Transition Liquid/Gas

Flash point : 260.01 °F / 126.67 °C
Calculated Flash Point

Evaporation rate : > 1
Ethyl Ether

Flammability (solid, gas) : No data available


Self-ignition : No data available

Upper explosion limit / Upper
flammability limit : No data available

Lower explosion limit / Lower
flammability limit : No data available

Vapour pressure : 23.3333333 hPa (68 °F / 20 °C)
Calculated Vapor Pressure

Relative vapour density : No data available

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Relative density : No data available

Density : 1.060 g/cm³ (77.00 °F / 25.00 °C)

Solubility(ies)

Water solubility : No data available

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

Incompatible materials : reactive metals such as aluminum and magnesium
strong bases
Strong oxidizing agents

Hazardous decomposition products : Carbon monoxide
Carbon dioxide (CO₂)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity


Not classified based on available information.

Skin corrosion/irritation

Not classified based on available information.

Serious eye damage/eye irritation

Not classified based on available information.

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Product:

Remarks : Unlikely to cause eye irritation or injury.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:


Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100,000 mg/l
 Exposure time: 96 h
 Test Type: static test

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LC50 (Pimephales promelas (fathead minnow)): 66,000 mg/l
 Exposure time: 96 h
 Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : LC 50 (Daphnia magna (Water flea)): 6,900 mg/l
 Exposure time: 48 h
 Test Type: static test

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

Persistence and degradability

Product:

Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days
 44,000 mg/l

Chemical Oxygen Demand (COD) : 79,000 mg/l
 Method: Chemical oxygen demand

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.


Contaminated packaging : Empty remaining contents.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

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IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

Not regulated as a dangerous good

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards


SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : All components are listed on the inventory, regulatory obligations/restrictions apply
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory

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PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

NZIOC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.


SECTION 16. OTHER INFORMATION

Further information

Revision Date : 09/14/2022

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECl - Thailand

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Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data


SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Amersite™ CHZ CORROSION INHIBITOR
 ™ Trademark, Solenis or its subsidiaries or affiliates,
 registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Corrosion inhibitor


Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin sensitisation : Category 1

GHS label elements


Hazard pictograms : 

Signal word : Warning

Hazard statements : H317 May cause an allergic skin reaction.

Precautionary statements : **Prevention:**
 P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
 P272 Contaminated work clothing must not be allowed out of the workplace.
 P280 Wear protective gloves.

Response:
 P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

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P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P363 Wash contaminated clothing before reuse.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (%)
Carbonic dihydrazide	497-18-7	Skin Sens. 1; H317	>= 5 - < 10

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : Remove contaminated clothing. If irritation develops, get medical attention.
If on skin, rinse well with water.
First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
Wash contaminated clothing before re-use.
- In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
If eye irritation persists, consult a specialist.
- If swallowed : Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

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Most important symptoms and effects, both acute and delayed : No symptoms known or expected.
May cause an allergic skin reaction.

Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
Nitrogen oxides (NOx)

Specific extinguishing methods : Product is compatible with standard fire-fighting agents.

Further information : Standard procedure for chemical fires.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.


SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.

Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

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- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.
Do not smoke.
Container hazardous when empty.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Electrical installations / working materials must comply with the technological safety standards.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

- Engineering measures** : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.


Personal protective equipment

Hand protection

- Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

- Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.

- Skin and body protection : Wear resistant gloves (consult your safety equipment supplier).
Wear as appropriate:
Impervious clothing
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Discard gloves that show tears, pinholes, or signs of wear.

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Hygiene measures : Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : colourless

Odour : No data available

Odour Threshold : No data available

pH : 7 - 9

Melting point/freezing point : 30.0 °F / -1.1 °C

Boiling point/boiling range : > 212 °F / 100 °C

Flash point : Not applicable

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Self-ignition : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : 23.33 hPa (68 °F / 20 °C)
Calculated Vapor Pressure

Relative vapour density : No data available

Relative density : 0.97 - 1.07


Density : 0.97 - 1.07 g/cm³ (77 °F / 25 °C)

Solubility(ies)

Water solubility : No data available

Solubility in other solvents : No data available

Partition coefficient: n- : No data available

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octanol/water

Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

Conditions to avoid : Heat

Incompatible materials : Acids
Strong oxidizing agents

Hazardous decomposition products : Carbon monoxide
Carbon dioxide (CO₂)
Nitrogen oxides (NO_x)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Components:


Carbonic dihydrazide:

Acute oral toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
Method: OECD Test Guideline 420

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: No adverse effect has been observed in acute dermal toxicity tests.

Skin corrosion/irritation

Not classified based on available information.

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Product:

Remarks : May cause skin irritation in susceptible persons.

Components:**Carbonic dihydrazide:**

Result : Mildly irritating to skin

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Remarks : Unlikely to cause eye irritation or injury.

Components:**Carbonic dihydrazide:**

Result : Not irritating to eyes

Respiratory or skin sensitisation**Skin sensitisation**

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Product:

Remarks : May cause allergic skin reaction.

Components:**Carbonic dihydrazide:****Germ cell mutagenicity**

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information**Product:**

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Product:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,053 mg/l
 Exposure time: 96 h
 Test Type: static test

LC50 (Pimephales promelas (fathead minnow)): 149 mg/l
 Exposure time: 96 h
 Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Water flea (Ceriodaphnia dubia)): 110 mg/l
 Exposure time: 48 h
 Test Type: static test

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.


Chronic aquatic toxicity : Not classified based on available information.

Components:**Carbonic dihydrazide:**

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 190 mg/l
 Exposure time: 96 h

LC50 (Oncorhynchus mykiss (rainbow trout)): 360 mg/l
 Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 9.5 mg/l
 Exposure time: 48 h

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Toxicity to algae/aquatic plants : EC50 (algae): 1.5 mg/l
Exposure time: 72 h

Ecotoxicology Assessment

Chronic aquatic toxicity : Not classified based on available information.

Persistence and degradability

Product:

Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days
247 mg/l

Chemical Oxygen Demand (COD) : 18,300 mg/l
Method: Chemical oxygen demand

Components:

Carbonic dihydrazide:

Biodegradability : Result: Readily biodegradable.

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available


SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.

Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

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SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

Not regulated as a dangerous good

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
HYDRAZINE	302-01-2	1	30303

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
HYDRAZINE	302-01-2	1	30303


SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Respiratory or skin sensitization

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

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WARNING: This product can expose you to chemicals including HYDRAZINE, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

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- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

Revision Date : 09/09/2022


Full text of H-Statements

H317 : May cause an allergic skin reaction.

Full text of other abbreviations

Skin Sens. : Skin sensitisation

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory

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concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data


SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

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		Print Date: 07/25/2023
		SDS Number: R0188429
Drewgard™ 315 CLOSED SYSTEM TREATMENT ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 83904	PM 20931-00	Version: 3.2

SECTION 1. IDENTIFICATION

Product identifier

Trade name : Drewgard™ 315
CLOSED SYSTEM TREATMENT
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Industrial chemical

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion : Category 1

Serious eye damage : Category 1

GHS label elements


Hazard pictograms :



Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/
face protection.

 Strong bonds. Trusted solutions.		Page: 2
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Drewgard™ 315 CLOSED SYSTEM TREATMENT ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 83904		Version: 3.2

Response:

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture


Components

Chemical name	CAS-No.	Classification	Concentration (%)
MOLYBDENUM COMPOUND	Trade Secret	Not a hazardous substance or mixture.	>= 15 - < 20
TRIAZOLE DERIVATIVE	Trade Secret	Acute Tox. 4; H302 Skin Corr. 1; H314 Eye Dam. 1; H318	>= 1.5 - < 5
sodium hydroxide	1310-73-2	Met. Corr. 1; H290 Skin Corr. 1A; H314 Eye Dam. 1; H318	>= 1 - < 1.5

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

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- If inhaled : Move to fresh air.
If breathed in, move person into fresh air.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : If on skin, rinse well with water.
Wash contaminated clothing before re-use.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : Get medical attention immediately.
Do NOT induce vomiting.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Cough
lung edema (fluid buildup in the lung tissue)
Difficulty in breathing
Causes serious eye damage.
Causes severe burns.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

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- Hazardous combustion products : hydrogen cyanide in reducing atmospheres
nitrogen oxides (NOx)
Carbon monoxide
Carbon dioxide (CO2)
corrosive vapors
Sodium oxides
toxic fumes
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.
When diluting, always add the product to water. Never add water to the product.
Container hazardous when empty.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.

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Observe label precautions.
Electrical installations / working materials must comply with
the technological safety standards.

Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION


Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
MOLYBDENUM COMPOUND	Trade Secret	TWA (total dust)	15 mg/m ³ (Molybdenum)	OSHA Z-1
		TWA	5 mg/m ³ (Molybdenum)	OSHA Z-1
		TWA (Inhalable particulate matter)	10 mg/m ³ (Molybdenum)	ACGIH
		TWA (Respirable particulate matter)	3 mg/m ³ (Molybdenum)	ACGIH
		TWA (Respirable particulate matter)	0.5 mg/m ³ (Molybdenum)	ACGIH
		TWA (Total dust)	10 mg/m ³ (Molybdenum)	OSHA P0
		TWA	5 mg/m ³ (Molybdenum)	OSHA P0
sodium hydroxide	1310-73-2	C	2 mg/m ³	ACGIH
		C	2 mg/m ³	NIOSH REL
		TWA	2 mg/m ³	OSHA Z-1
		C	2 mg/m ³	OSHA P0

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment


Hand protection

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- Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.
- Eye protection : Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.
Maintain eye wash station in immediate work area.
- Skin and body protection : Wear as appropriate:
Impervious clothing
Chemical resistant apron
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.
- Hygiene measures : Wash hands before breaks and at the end of workday.
When using do not eat or drink.
Ensure that eyewash stations and safety showers are close to the workstation location.
When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Colour : light brown
- Odour : No data available
- Odour Threshold : No data available
- pH : > 12.5
- Melting point/freezing point : 25 °F / -4 °C
- Boiling point/boiling range : 212 °F / 100 °C
(1,013.33 hPa)
Calculated Phase Transition Liquid/Gas
- Flash point : No data available
- Evaporation rate : > 1
Ethyl Ether
- Flammability (solid, gas) : No data available

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Self-ignition : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : 23.33 hPa (759.99 °F / 404.44 °C)
Calculated Vapor Pressure

Relative vapour density : > 1
AIR=1

Relative density : 1.142 (77 °F / 25 °C)

Density : 1.133 - 1.155 g/cm³ (77 °F / 25 °C)

Solubility(ies)
Water solubility : completely soluble
Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Decomposition temperature : No data available

Viscosity
Viscosity, dynamic : No data available
Viscosity, kinematic : No data available

Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

Conditions to avoid : Exposure to sunlight.
Exposure to air or moisture over prolonged periods.

Incompatible materials : Acids
halogenated hydrocarbons
Metals
organic nitro compounds

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Strong oxidizing agents

Hazardous decomposition products : molybdenum fumes
 Hydrogen cyanide (hydrocyanic acid)
 Nitrogen oxides (NO_x)
 Carbon monoxide
 Carbon dioxide (CO₂)
 corrosive vapors
 Sodium oxides
 toxic fumes

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity**

Not classified based on available information.

Components:**TRIAZOLE DERIVATIVE:**

Acute oral toxicity : LD50 (Rat, female): 735 mg/kg

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
 Assessment: Not classified as acutely toxic by dermal absorption under GHS.

sodium hydroxide:

Acute oral toxicity : LDLo (Rabbit): 500 mg/kg

Skin corrosion/irritation

Causes severe burns.

Product:

Result : Corrosive to skin

Remarks : Causes severe skin burns and eye damage.
 The feeling of irritation or pain may be delayed.

Components:**MOLYBDENUM COMPOUND:**


Result : Possibly irritating to skin

TRIAZOLE DERIVATIVE:

Result : Corrosive to skin

sodium hydroxide:

Result : Causes severe burns.

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Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Result : Corrosive to eyes

Remarks : May cause irreversible eye damage.

Components:

MOLYBDENUM COMPOUND:

Result : Possibly irritating to eyes

TRIAZOLE DERIVATIVE:

Result : Corrosive to eyes

sodium hydroxide:

Result : Corrosive to eyes

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity


Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

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Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 707 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : LC 50 (Daphnia magna (Water flea)): 7,070 mg/l
Exposure time: 48 h
Test Type: static test
Remarks: Information given is based on data on the components and the ecotoxicology of similar products.

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

Components:

TRIAZOLE DERIVATIVE:


Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): > 173 mg/l
Exposure time: 96 h

LC50 (Oncorhynchus mykiss (rainbow trout)): ca. 25 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 280 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 26.2 mg/l
Exposure time: 72 h
Test Type: Growth inhibition

EbC50 (Pseudokirchneriella subcapitata (green algae)): 32 mg/l
Exposure time: 96 h
Test Type: Growth inhibition

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Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10 (Daphnia magna (Water flea)): 0.4 mg/l
Exposure time: 21 d
Test Type: semi-static test
Method: OECD Test Guideline 211
Remarks: Information given is based on data obtained from similar substances.

sodium hydroxide:

Toxicity to fish : LC50 (Gambusia affinis (Mosquito fish)): 125 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 34.59 - 47.13 mg/l
Exposure time: 48 h
Remarks: Intoxication

Persistence and degradability

Product:

Biodegradability : Remarks: Not readily biodegradable.
Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days
56,000 mg/l
Chemical Oxygen Demand (COD) : 61,000 mg/l
Method: Chemical oxygen demand

Components:

TRIAZOLE DERIVATIVE:

Biodegradability : Result: Not readily biodegradable.
Method: OECD Test Guideline 301F

Bioaccumulative potential

Components:

TRIAZOLE DERIVATIVE:

Partition coefficient: n-octanol/water : log Pow: 0.658


Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available

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SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

- Waste from residues : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.
- Dispose of in accordance with all applicable local, state and federal regulations.
- Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

- UN number : UN 1719
Proper shipping name : Caustic alkali liquid, n.o.s. (SODIUM HYDROXIDE)
Class : 8
Packing group : III
Packing instruction (cargo aircraft) : 856
Packing instruction (passenger aircraft) : 852
Marine pollutant : no

IMDG-Code

- UN number : UN 1719
Proper shipping name : CAUSTIC ALKALI LIQUID, N.O.S. (SODIUM HYDROXIDE)
Class : 8
Packing group : III
EmS Code : F-A, S-B
Marine pollutant : no


Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

- UN number : UN 1719
Proper shipping name : Caustic alkali liquids, n.o.s. (SODIUM HYDROXIDE)

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Class : 8
Packing group : III
ERG Code : 154
Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
sodium hydroxide	1310-73-2	1000	97665

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory

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- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory
- NZIOC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

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Full text of H-Statements

- H290 : May be corrosive to metals.
- H302 : Harmful if swallowed.
- H314 : Causes severe skin burns and eye damage.
- H318 : Causes serious eye damage.

Full text of other abbreviations

- Acute Tox. : Acute toxicity
- Eye Dam. : Serious eye damage
- Met. Corr. : Corrosive to metals
- Skin Corr. : Skin corrosion
- ACGIH : USA. ACGIH Threshold Limit Values (TLV)
- NIOSH REL : USA. NIOSH Recommended Exposure Limits
- OSHA P0 : USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
- OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
- ACGIH / TWA : 8-hour, time-weighted average
- ACGIH / C : Ceiling limit
- NIOSH REL / C : Ceiling value not be exceeded at any time.
- OSHA P0 / TWA : 8-hour time weighted average
- OSHA P0 / C : Ceiling limit
- OSHA Z-1 / TWA : 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide;

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GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data


SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Drewgard™ 2808
CLOSED SYSTEM TREATMENT
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Water treatment chemical

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)


Oxidizing liquids : Category 2
Acute toxicity (Oral) : Category 4
Skin irritation : Category 2
Eye irritation : Category 2A
Reproductive toxicity : Category 1B

GHS label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : H272 May intensify fire; oxidizer.
H302 Harmful if swallowed.

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H315 Causes skin irritation.
H319 Causes serious eye irritation.
H360 May damage fertility or the unborn child.

Precautionary statements :

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat.
P220 Keep/ Store away from clothing/ combustible materials.
P221 Take any precaution to avoid mixing with combustibles.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards


None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (%)
SODIUM NITRITE	7632-00-0	Ox. Sol. 2; H272 Acute Tox. 3; H301	>= 15 - < 20


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		Eye Irrit. 2A; H319	
INORGANIC SALT	Trade Secret	Eye Irrit. 2A; H319 Repr. 1B; H360	>= 5 - < 10
ALKALINE	Trade Secret	Met. Corr. 1; H290 Skin Corr. 1A; H314 Eye Dam. 1; H318	>= 1 - < 1.5
Sodium nitrate	7631-99-4	Ox. Sol. 3; H272 Eye Irrit. 2A; H319	>= 0.1 - < 0.5

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : Remove contaminated clothing. If irritation develops, get medical attention.
If on skin, rinse well with water.
Wash contaminated clothing before re-use.
If on clothes, remove clothes.
- In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : Obtain medical attention.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Nose bleeding
Cough
hair loss
Shortness of breath
lung edema (fluid buildup in the lung tissue)
Difficulty in breathing

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Overexposure to this product (or a component) may cause methemoglobinemia, which in sufficient concentration causes cyanosis. Severe cyanosis may require intravenous injection of methylene blue. Methylene blue is contraindicated if the patient has confirmed or suspected glucose-6-phosphate dehydrogenase deficiency.
Harmful if swallowed.
Causes skin irritation.
Causes serious eye irritation.
May damage fertility or the unborn child.


Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Carbon dioxide (CO2)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.
Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
nitrogen compounds
Nitrogen oxides (NOx)
corrosive vapors
Sodium oxides
toxic fumes
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Use a water spray to cool fully closed containers.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, : Use personal protective equipment.

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- protective equipment and emergency procedures : Ensure adequate ventilation. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Keep away from combustible material.
- Advice on safe handling : Do not breathe vapours/dust. Do not smoke. When diluting, always add the product to water. Never add water to the product. Container hazardous when empty. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. Smoking, eating and drinking should be prohibited in the application area. For personal protection see section 8. Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of	Control parameters /	Basis
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		exposure)	Permissible concentration	
INORGANIC SALT	Trade Secret	TWA	5 mg/m3	NIOSH REL
		TWA	10 mg/m3	OSHA P0
		TWA (Inhalable particulate matter)	2 mg/m3 (Borate)	ACGIH
		STEL (Inhalable particulate matter)	6 mg/m3 (Borate)	ACGIH
ALKALINE	Trade Secret	C	2 mg/m3	ACGIH
		C	2 mg/m3	NIOSH REL
		TWA	2 mg/m3	OSHA Z-1
		C	2 mg/m3	OSHA P0

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment


Respiratory protection : A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

In the case of vapour formation use a respirator with an approved filter.

Hand protection
Material : Nitrile rubber

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.

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Skin and body protection : Wear as appropriate:
Impervious clothing
Safety shoes
Flame-resistant clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.

Hygiene measures : Wash hands before breaks and at the end of workday.
When using do not eat or drink.
When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : light yellow

Odour : No data available

Odour Threshold : No data available

pH : 12

Melting point/freezing point : 8 °F / -13 °C

Boiling point/boiling range : 212 °F / 100 °C

Flash point : does not flash

Evaporation rate : > 1
Ethyl Ether


Flammability (solid, gas) : No data available

Self-ignition : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : 17.5 mmHg

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Relative vapour density : No data available

Relative density : 1.2 (77 °F / 25 °C)

Density : 1.200 g/cm3 (77 °F / 25 °C)

Solubility(ies)

Water solubility : completely soluble

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.


Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

Conditions to avoid : Do not allow evaporation to dryness.
Heat, flames and sparks.
Exposure to sunlight.
Exposure to moisture

Heat, flames and sparks.

Incompatible materials : Acids
activated carbon
Alkali metals
ammonium salts
Amines
Ammonia
Combustible material
Cyanides
halogenated hydrocarbons
Metals
metal hydrides
metal salts
organic nitro compounds

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<p>Hazardous decomposition products</p>	<p>oxidizable substances Powdered metals Reducing agents Strong oxidizing agents</p> <p>: Carbon monoxide Carbon dioxide (CO2) nitrogen compounds Nitrogen oxides (NOx) corrosive vapors Sodium oxides toxic fumes</p>
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SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if swallowed.

Components:

SODIUM NITRITE:

Acute oral toxicity : LD50 (Rat): 180 mg/kg

Acute inhalation toxicity : LC 50 (Rat): 5.5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

INORGANIC SALT:

Acute oral toxicity : LD50 (Rat): 4,500 - 5,000 mg/kg

Acute inhalation toxicity : LC 50 (Rat): > 2 mg/l
Test atmosphere: dust/mist
Assessment: Not classified as acutely toxic by inhalation under GHS.
Remarks: see user defined free text

Acute dermal toxicity : LD50 (Rabbit): > 10,000 mg/kg

ALKALINE:

Acute oral toxicity : LDLo (Rabbit): 500 mg/kg

Sodium nitrate:

Acute oral toxicity : LD50 (Rat): ca. 3,430 mg/kg
Method: OECD Test Guideline 401

Skin corrosion/irritation

Causes skin irritation.

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Product:

Result : Severely irritating to skin

Remarks : May cause skin irritation and/or dermatitis.
 The feeling of irritation or pain may be delayed.

Components:**SODIUM NITRITE:**

Result : Not irritating to skin

INORGANIC SALT:

Result : Not irritating to skin

ALKALINE:

Result : Causes severe burns.

Sodium nitrate:

Species : Rabbit
 Method : OECD Test Guideline 404
 Result : Not irritating to skin
 Remarks : Information given is based on data obtained from similar
 substances.

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Result : Severely irritating to eyes

Remarks : Vapours may cause irritation to the eyes, respiratory system
 and the skin.
 Causes serious eye irritation.

Components:**SODIUM NITRITE:**


Result : Irritating to eyes

INORGANIC SALT:

Result : Irritating to eyes

ALKALINE:

Result : Corrosive to eyes

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Sodium nitrate:

Species : Rabbit
 Result : Irritating to eyes
 Method : OECD Test Guideline 405

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC Group 2A: Probably carcinogenic to humans
 sodium nitrite 7632-00-0
 (nitrite (ingested) under conditions that result in endogenous nitrosation)
 Group 2A: Probably carcinogenic to humans
 Sodium nitrate 7631-99-4
 (nitrate (ingested) under conditions that result in endogenous nitrosation)

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

May damage fertility or the unborn child.

Components:

INORGANIC SALT:

Reproductive toxicity - Assessment : Clear evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure


Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

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Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,770 mg/l
Exposure time: 96 h
Test Type: static test

LC50 (Pimephales promelas (fathead minnow)): 1,250 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 221 mg/l
Exposure time: 48 h
Test Type: static test

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

Components:

SODIUM NITRITE:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.54 - 26.3 mg/l
Exposure time: 96 h
Test Type: flow-through test


Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 15.4 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
Exposure time: 72 h
Test Type: Growth inhibition
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : NOEC (Ictalurus catus (catfish)): 6.16 mg/l
Exposure time: 31 d
Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Aquatic invertebrates): 9.86 mg/l
Exposure time: 80 d
Test Type: static test

Toxicity to microorganisms : EC10 (activated sludge): 210 mg/l

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Exposure time: 3 h
Test Type: Static
Method: OECD Test Guideline 209

INORGANIC SALT:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,800 mg/l
Exposure time: 48 h
Test Type: static test

ALKALINE:

Toxicity to fish : LC50 (Gambusia affinis (Mosquito fish)): 125 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 34.59 - 47.13 mg/l
Exposure time: 48 h
Remarks: Intoxication

Sodium nitrate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,355 - 2,063 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : LC 50 (Daphnia magna (Water flea)): 3,581 mg/l
Exposure time: 48 h
Method: Static
Remarks: Mortality

Persistence and degradability

Product:


Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days < 100 mg/l

Chemical Oxygen Demand (COD) : 58,800 mg/l

Components:

SODIUM NITRITE:

Biodegradability : Result: The methods for determining biodegradability are not applicable to inorganic substances.

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Bioaccumulative potential

Components:

SODIUM NITRITE:

Partition coefficient: n-octanol/water : log Pow: -3.700 (77 °F / 25 °C)

Mobility in soil

Components:

SODIUM NITRITE:

Stability in soil : Remarks: Not expected to adsorb on soil.

Other adverse effects

Product:

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

- Waste from residues : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.
- Dispose of in accordance with all applicable local, state and federal regulations.
- Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN number : UN 3139
Proper shipping name : Oxidizing liquid, n.o.s. (SODIUM NITRITE)
Class : 5.1
Packing group : III
Packing instruction (cargo) : 555

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aircraft)
Packing instruction : 551
(passenger aircraft)
Marine pollutant : no

IMDG-Code

UN number : UN 3139
Proper shipping name : OXIDIZING LIQUID, N.O.S. (SODIUM NITRITE)
Class : 5.1
Packing group : III
EmS Code : F-A, S-Q
Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

UN number : UN 3139
Proper shipping name : Oxidizing liquid, n.o.s. (SODIUM NITRITE)
Class : 5.1
Packing group : III
ERG Code : 140
Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
SODIUM NITRITE	7632-00-0	100	526

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Oxidiser (liquid, solid or gas)
Acute toxicity (any route of exposure)
Reproductive toxicity

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Skin corrosion or irritation
 Serious eye damage or eye irritation

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

SODIUM 7632-00-0 >= 10 - < 20 %
 NITRITE

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : All components are listed on the inventory, regulatory obligations/restrictions apply
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory

TSCA list

The following substance(s) is/are subject to a Significant New Use Rule:
 SODIUM NITRITE 7632-00-0

The following substance(s) is/are subject to TSCA 12(b) export notification requirements:
 SODIUM NITRITE 7632-00-0

SECTION 16. OTHER INFORMATION

Further information

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Full text of H-Statements

H272	: May intensify fire; oxidizer.
H290	: May be corrosive to metals.
H301	: Toxic if swallowed.
H314	: Causes severe skin burns and eye damage.
H318	: Causes serious eye damage.
H319	: Causes serious eye irritation.
H360	: May damage fertility or the unborn child.

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Eye Dam.	: Serious eye damage
Eye Irrit.	: Eye irritation
Met. Corr.	: Corrosive to metals
Ox. Sol.	: Oxidizing solids
Repr.	: Reproductive toxicity
Skin Corr.	: Skin corrosion
ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	: USA. NIOSH Recommended Exposure Limits
OSHA P0	: USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	: 8-hour, time-weighted average
ACGIH / STEL	: Short-term exposure limit
ACGIH / C	: Ceiling limit
NIOSH REL / TWA	: Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / C	: Ceiling value not be exceeded at any time.
OSHA P0 / TWA	: 8-hour time weighted average
OSHA P0 / C	: Ceiling limit
OSHA Z-1 / TWA	: 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect

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Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECL - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

NALCO® BT-5010 BOILER WATER TREATMENT

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : NALCO® BT-5010 BOILER WATER TREATMENT

Other means of identification : Not applicable.

Recommended use : BOILER WATER TREATMENT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630) 305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 12/09/2020

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Skin corrosion : Category 1B
Serious eye damage : Category 1

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : Causes severe skin burns and eye damage.

Precautionary Statements : **Prevention:**
Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair):
Take off immediately all contaminated clothing. Rinse skin with water/shower. IF
INHALED: Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER/doctor. IF IN EYES: Rinse cautiously with
water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

SAFETY DATA SHEET

NALCO® BT-5010 BOILER WATER TREATMENT

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Sodium Hydroxide	1310-73-2	1 - 5

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

If swallowed : Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.

Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.

Notes to physician : Treat symptomatically.

Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : None known.

Specific hazards during firefighting : Not flammable or combustible.

Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides
Oxides of phosphorus

Special protective equipment for firefighters : Use personal protective equipment.

Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

SAFETY DATA SHEET

NALCO® BT-5010 BOILER WATER TREATMENT

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Flush away traces with water.

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Do not ingest. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Conditions for safe storage : Do not store near acids. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.
- Unsuitable material : not determined

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Sodium Hydroxide	1310-73-2	Ceiling	2 mg/m ³	ACGIH
		Ceiling	2 mg/m ³	NIOSH REL
		TWA	2 mg/m ³	OSHA Z1

- Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

- Eye protection : Safety goggles
Face-shield
- Hand protection : Wear the following personal protective equipment:
Standard glove type.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

SAFETY DATA SHEET

NALCO® BT-5010 BOILER WATER TREATMENT

- Skin protection : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing
- Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Liquid
- Colour : Light yellow
Hazy
- Odour : odourless
- Flash point : > 93.3 °C
- pH : 13.4,(100 %), Method: ASTM E 70
- Odour Threshold : no data available
- Melting point/freezing point : Freezing Point: 0 °C, ASTM D-1177
- Initial boiling point and boiling range : no data available
- Evaporation rate : no data available
- Flammability (solid, gas) : Not applicable.
- Upper explosion limit : no data available
- Lower explosion limit : no data available
- Vapour pressure : no data available
- Relative vapour density : no data available
- Relative density : 1.04 - 1.08, (25 °C),
- Density : 8.7 - 9.0 lb/gal
- Water solubility : completely soluble
- Solubility in other solvents : no data available
- Partition coefficient: n-octanol/water : no data available
- Auto-ignition temperature : no data available
- Thermal decomposition : no data available
- Viscosity, dynamic : < 4 mPa.s (22 °C)

SAFETY DATA SHEET

NALCO® BT-5010 BOILER WATER TREATMENT

Viscosity, kinematic : no data available
Molecular weight : no data available
VOC : 0 %, 0 g/l, EPA Method 24

Section: 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.
Conditions to avoid : None known.
Incompatible materials : Strong acids
Hazardous decomposition products : In case of fire, hazardous decomposition products may be produced such as:
Carbon oxides
Oxides of phosphorus

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes : Causes serious eye damage.
Skin : Causes severe skin burns.
Ingestion : Causes digestive tract burns.
Inhalation : May cause nose, throat, and lung irritation.
Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact : Redness, Pain, Corrosion
Skin contact : Redness, Pain, Corrosion
Ingestion : Corrosion, Abdominal pain
Inhalation : Respiratory irritation, Cough

Toxicity

Product

SAFETY DATA SHEET

NALCO® BT-5010 BOILER WATER TREATMENT

Acute oral toxicity	:	Acute toxicity estimate: > 5,000 mg/kg
Acute inhalation toxicity	:	no data available
Acute dermal toxicity	:	Acute toxicity estimate: > 5,000 mg/kg
Skin corrosion/irritation	:	no data available
Serious eye damage/eye irritation	:	no data available
Respiratory or skin sensitization	:	no data available
Carcinogenicity	:	no data available
Reproductive effects	:	no data available
Germ cell mutagenicity	:	no data available
Teratogenicity	:	no data available
STOT - single exposure	:	no data available
STOT - repeated exposure	:	no data available
Aspiration toxicity	:	no data available

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : This product has no known ecotoxicological effects.

Product

Toxicity to fish : LC50 Oncorhynchus mykiss (rainbow trout): > 5,000 mg/l
Exposure time: 96 hrs
Test substance: Similar Product
Test Type: Static

NOEC Oncorhynchus mykiss (rainbow trout): 5,000 mg/l
Exposure time: 96 hrs
Test substance: Similar Product
Test Type: Static

Toxicity to daphnia and other aquatic invertebrates : EC50 Daphnia magna (Water flea): 3,536 mg/l
Exposure time: 48 hrs
Test substance: Similar Product
Test Type: Static

NOEC Daphnia magna (Water flea): 2,500 mg/l
Exposure time: 48 hrs
Test substance: Similar Product
Test Type: Static

Persistence and degradability

no data available

Mobility

SAFETY DATA SHEET

NALCO® BT-5010 BOILER WATER TREATMENT

no data available

Bioaccumulative potential

no data available

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

Hazardous Waste:	: D002
Disposal methods	: Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.
Disposal considerations	: Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Proper shipping name	: SODIUM HYDROXIDE SOLUTION
Technical name(s)	: Sodium Hydroxide
UN/ID No.	: UN 1824
Transport hazard class(es)	: 8
Packing group	: III
Reportable Quantity (per package)	: 36,832 lbs
RQ Component	: Sodium Hydroxide

Air transport (IATA)

Proper shipping name	: SODIUM HYDROXIDE SOLUTION
Technical name(s)	: Sodium Hydroxide
UN/ID No.	: UN 1824
Transport hazard class(es)	: 8
Packing group	: III
Reportable Quantity (per package)	: 36,832 lbs
RQ Component	: Sodium Hydroxide

Sea transport (IMDG/IMO)

SAFETY DATA SHEET

NALCO® BT-5010 BOILER WATER TREATMENT

Proper shipping name : SODIUM HYDROXIDE SOLUTION
Technical name(s) : Sodium Hydroxide
UN/ID No. : UN 1824
Transport hazard class(es) : 8
Packing group : III

Section: 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Sodium Hydroxide	1310-73-2	1000	36832

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

United States TSCA Inventory

On or in compliance with the active portion of the TSCA inventory

Australia. Australian Industrial Chemicals Introduction Scheme (AICIS)

On the inventory, or in compliance with the inventory.

Japan. ENCS - Existing and New Chemical Substances Inventory

not determined

Korea. Korean Existing Chemicals Inventory (KECI)

SAFETY DATA SHEET

NALCO® BT-5010 BOILER WATER TREATMENT

On the inventory, or in compliance with the inventory.

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

On the inventory, or in compliance with the inventory.

China Inventory of Existing Chemical Substances

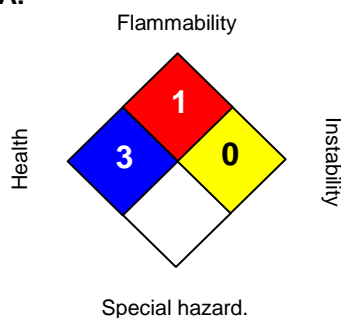
On the inventory, or in compliance with the inventory.

Taiwan Chemical Substance Inventory

not determined

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	3
FLAMMABILITY	1
PHYSICAL HAZARD	0

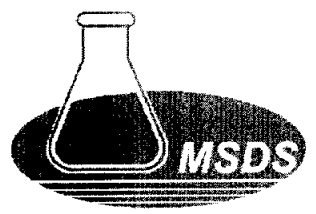
0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 12/09/2020
Version Number : 1.2
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.nalco.com and request access.

0422-00
954915



MATERIAL SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name: ChemTreat BL-1240
 Manufacturer's Name: ChemTreat, Inc.
 Emergency Telephone Number: (800) 424-9300
 Address (Corporate Headquarters): 4461 Cox Road, Glen Allen, VA 23060
 Telephone Number for Information: (800) 648-4579
 Date of MSDS: September 19, 2007

Section 2. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt. %
Erythorbic acid	89-65-6	1 - 5
Sodium hydroxide	1310-73-2	1 - 5

Section 3. Hazards Identification

Emergency Overview: Clear straw to amber liquid; odorless. Not flammable.
 Potential Health Effects:
Eyes - May cause irritation
Skin - May cause irritation and drying of skin, and dermatitis
Inhalation - May be irritating to respiratory tract
Ingestion - May cause toxic effects if large amounts are swallowed
Chronic Effects/Carcinogenicity: None known

Section 4. First Aid Measures

Inhalation: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Get immediate medical attention.
Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, holding eyelids apart to ensure flushing of entire eye surface. Get immediate medical attention.
Skin: Wash thoroughly with soap and large amounts of water. Wash clothing before reuse. Get medical attention immediately.
Ingestion: Do not induce vomiting. Give large quantities of water. Never give anything by mouth to an unconscious person. Call a physician immediately.

Section 5. Fire Fighting Measures

Flammable Properties: Not flammable

Suitable Extinguishing Media: Water, CO₂, dry chemical, foam

Fire & Explosion Hazards: Keep containers cool with water spray to minimize the potential of decomposition.

Protective Equipment: If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH-approved, self-contained breathing apparatus.

Section 6. Accidental Release Measures

Small Spill: Construct temporary dikes of dirt, sand, or any readily available inert material to prevent spreading of the material. Wearing appropriate personal protective equipment, move the leaking container to a containment area or plug the leak. Absorb on inert material, then shovel up and dispose of according to local, state, federal regulations.

Large Spill: Construct temporary dikes of dirt, sand, or any readily available inert material to prevent spreading of the product. Wearing appropriate personal protective equipment, close or cap valves and/or block or plug hole in leaking container and transfer to another container for proper disposal.

Section 7. Handling and Storage

Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Avoid breathing mists. Do not ingest. Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For industrial use only.

Section 8. Exposure Controls/Personal Protection

Use protective equipment in accordance with 29 CFR 1910 Subpart I. Good general ventilation should be sufficient to control airborne levels. Wear chemical splash goggles or safety glasses with full-face shield. Wear rubber gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact. Maintain eyewash fountain and quick-drench facilities in work area.

Section 9. Physical and Chemical Properties

Appearance: Clear straw/amber

Boiling Point: ~ 212°F

Evaporation Rate: < 1

Freezing Point: ~ 34°F

Melting Point: N/A

Molecular Weight: N/D

Odor: None

pH: ~9.8

Physical state: Liquid

Solubility in Water: Complete

Specific Gravity: ~1.031

Vapor Density: N/D

Vapor Pressure: N/D

Viscosity: N/D

% VOCs:

Section 10. Stability and Reactivity

Chemical Stability: Stable at normal temperatures and pressures.

Incompatibility: Strong oxidizing agents

Hazardous Decomposition Products: Oxides of carbon

Hazardous Polymerization: Will not occur.

Section 11. Toxicological Information

No information furnished

Section 12. Ecological Information

Fathead minnow: 96h LC50 = >10,000 mg/L

Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.

Section 14. Transport Information (not meant to be all inclusive)

D.O.T. Shipping Name: Not D.O.T. Regulated

Section 15. Regulatory Information (Not meant to be all inclusive – selected regulation represented)

TSCA Status: All ingredients listed

CERCLA Reportable Quantity: None

SARA Title III:

Section 302 Extremely Hazardous Substances: None

Section 313 Toxic Chemicals: None

CALIFORNIA PROPOSITION 65: None

FDA: All ingredients in this product are authorized in 21 CFR 173.310 for use as “Boiler Water Additives” where the steam may contact food.

KOSHER: This product is certified by the Orthodox Union as kosher pareve.

USDA: (Federally inspected meat and poultry plants) – product is approved for Category G6.

Section 16. Other Information

HMIS Hazard Rating:

Health: 1 Flammability: 0 Physical Hazard: 0 PPE: X (see note)

Note: PPE rating depends on circumstances of use. See Section 8 for recommended PPE.

SARA Hazard Categories – Section 311/312

Acute – Yes Chronic – No Fire – No Reactive – No Sudden Release – No

Prepared by Regulatory Affairs

Although the information and recommendations set forth herein (hereinafter “Information”) are presented in good faith and believed to be correct as of the date hereof, ChemTreat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information.

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ChemTreat, Inc.

BL-1240

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MATERIAL SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name: ChemTreat BL1344
Product Use: Boiler Water Treatment
Supplier's Name: ChemTreat, Inc.
Emergency Telephone Number: (800) 424-9300 (Toll Free)
(703) 527-3887
Address (Corporate Headquarters): 5640 COX ROAD
Glen Allen, VA 23060
Telephone Number for Information: (800) 648-4579
Date of MSDS: June 25, 2013

Section 2. Hazard(s) Identification



Signal Word: WARNING!

Hazard Statement(s): May be harmful in contact with skin.
May be harmful if inhaled.
May be harmful if swallowed.

Precautionary Statement(s): No significant health risks are expected from exposures under normal conditions of use.

Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt. %
1-Hydroxyethylidene-1,1-diphosphonic acid, tetrapotassium salt	14860-53-8	3 - 7

Section 4. First Aid Measures

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.

Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Skin: Wash with plenty of soap and water. Call a poison center or doctor/physician if you feel unwell.

Ingestion: DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

Notes to Physician: N/A

Additional First Aid Remarks: N/A

Section 5. Fire Fighting Measures

Flammability of the Product: Not flammable.

Suitable Extinguishing Media: Use extinguishing media suitable to surrounding fire.

Specific Hazards Arising from the Chemical: Product may emit toxic gases or fumes under fire conditions.

Protective Equipment: If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

Section 6. Accidental Release Measures

Personal Precautions: Use appropriate Personal Protective Equipment (PPE).

Environmental Precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.

Methods for Cleaning up: Contain and recover liquid when possible. Flush spill area with water spray.

Other Statements: None.

Section 7. Handling and Storage

Handling: Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.

Storage: Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only.

Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits
1-Hydroxyethylidene-1,1-diphosphonic acid, tetrapotassium salt		N/E

Carcinogenicity Category

Component	Source	Code	Brief Description
1-Hydroxyethylidene-1,1-diphosphonic acid, tetrapotassium salt			N/E

Engineering Controls:

Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

Personal Protection

Eyes:

Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.

Skin:

Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.

Respiratory:

If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Section 9. Physical and Chemical Properties

Physical State and Appearance:

Liquid, Light Straw, Clear

Specific Gravity:

1.241 @ 20°C

pH:

9.0 @ 20°C, 100.0%

Freezing Point:

21°F

Flash Point:

N/D

Odor:

Mild

Melting Point:

N/D

Boiling Point:

212°F

Solubility in Water:

Complete

Evaporation Rate:

N/D

Vapor Density:

As Water

Molecular Weight:

N/D

Viscosity:

<100 CPS @ 20°C

Flammable Limits:

N/A

Autoignition Temperature: N/A
Density: 10.35 lb/ga
Vapor Pressure: As Water
% VOC: N/D

Section 10. Stability and Reactivity

Chemical Stability: Stable at normal temperatures and pressures.

Incompatibility with Various Substances: Strong acids, Strong oxidizers

Hazardous Decomposition Products: None known.

Possibility of Hazardous Reactions: None known.

Section 11. Toxicological Information

Chemical Name	Exposure	Type of Effect	Concentration	Species
1-Hydroxyethylidene-1,1-diphosphonic acid, tetrapotassium salt	Oral	LD50	2400 mg/kg	Rat
	Dermal	LD50	>7940 mg/kg	Rabbit

Comments: None.

Section 12. Ecological Information

Species	Duration	Type of Effect	Test Results
N/D			

Comments: Not tested.

Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.
Not a RCRA-regulated hazardous waste when disposed in the original product form.

Section 14. Transport Information

DOT

Proper Shipping Name:	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID
Technical Name:	N/A
Hazard Class:	Not D.O.T. Regulated
UN/NA#:	N/A
Packing Group:	N/A

IMDG

Proper Shipping Name:	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID
Technical Name:	N/A
Hazard Class:	Not D.O.T. Regulated
UN/NA#:	N/A
Packing Group:	N/A

TDG

Proper Shipping Name:	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID
Technical Name:	N/A
Hazard Class:	Not D.O.T. Regulated
UN/NA#:	N/A
Packing Group:	N/A

ICAO

Proper Shipping Name:	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID
Technical Name:	N/A
Hazard Class:	Not D.O.T. Regulated
UN/NA#:	N/A
Packing Group:	N/A

Section 15. Regulatory Information

Inventory Status

United States (TSCA): All ingredients listed.
Canada (DSL/NDSL): All ingredients listed.

Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes

Fire Hazard: No
Reactive Hazard: No
Release of Pressure: No
Acute Health Hazard: Yes
Chronic Health Hazard: No

Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
1-Hydroxyethylidene-1,1-diphosphonic acid, tetrapotassium salt	N/A	N/A	N/A

Comments: None.

State Regulations

California Proposition 65: None known.

Special Regulations

Component	States
1-Hydroxyethylidene-1,1-diphosphonic acid, tetrapotassium salt	None

International Regulations

Canada**WHMIS Classification:** N/A**Controlled Product Regulations (CPR):** N/A**Section 16. Other Information**

HMIS Hazard Rating**Health:** 1
Flammability: 0
Physical Hazard: 0
PPE: X**Notes:** The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.
The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.**NSF:** This product conforms to the requirements of the NSF Nonfood Compounds Registration Program, Registration #144221; Category G6, G7.**FDA/USDA/GRAS:** All ingredients in this product are authorized in 21 CFR 173.310 for use as "Boiler Water Additives" where the steam may contact food.**KOSHER:** This product is certified by the Orthodox Union as Kosher for Passover and year-round use.
Only when prepared by the following ChemTreat facilities: Ashland, VA; Eldridge, IA; Nederland, TX; Vernon, CA.**FIFRA:** N/A**Other:** None

Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Regulatory Affairs Department

Disclaimer

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SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	ChemTreat BL153
Product Use:	Steam Line Treatment
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424-9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road Glen Allen, VA 23060
Telephone Number for Information:	(800)648-4579
Date of SDS:	March 7, 2017
Revision Date:	March 7, 2017
Revision Number:	17030701AN

Section 2. Hazard(s) Identification



Signal Word:	DANGER
GHS Classification(s):	Skin corrosion/irritation – Category 1b Eye damage/irritation – Category 1 Acute Toxicity Dermal – Category 4 Acute Toxicity Inhalation – Category 4 Acute Toxicity Oral – Category 4
Hazard Statement(s):	H314 Causes severe skin burns and eye damage. H318 Causes serious eye damage. H312 Harmful in contact with skin. H332 Harmful if inhaled. H302 Harmful if swallowed.
Precautionary Statement(s):	
Prevention:	P260 Do not breathe dust/fume/gas/mist/vapors/spray. P264 Wash thoroughly after handling. P270 Do not eat, drink, or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/protective clothing/eye protection/face protection.



Response: P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P301 + 330 + 331 IF SWALLOWED: Rinse mouth.
Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair):
Remove/take off immediately all contaminated clothing.
Rinse skin with water/shower
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P363 Wash contaminated clothing before reuse.

Storage: P405 Store locked up.

Disposal: P501 Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.

System of Classification Used: Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards Not Otherwise Classified: None.

Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt. %
Ammonium hydroxide	1336-21-6	10 - 30

Comments If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

Section 4. First Aid Measures

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.



Skin: Immediately remove/take off all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before re-use. Immediately call a poison center or doctor/physician.

Ingestion: DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.

Most Important Symptoms: N/D

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary: N/A

Section 5. Fire Fighting Measures

Flammability of the Product: Not flammable.

Suitable Extinguishing Media: Use extinguishing media suitable to surrounding fire.

Specific Hazards Arising from the Chemical: Thermal decomposition releases ammonia and oxides of nitrogen.

Protective Equipment: If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

Section 6. Accidental Release Measures

Personal Precautions: Use appropriate Personal Protective Equipment (PPE).

Environmental Precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.

Methods for Cleaning up: Contain and recover liquid when possible. Flush spill area with water spray.

Other Statements: If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802. Reportable Quantity of the product is 683 Gal.

Section 7. Handling and Storage

- Handling:** Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
- Storage:** Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Do not store or handle in aluminum, zinc, copper, or their alloys. Store above Freeze Point.

Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits
Ammonium hydroxide	N/E	N/E

- Engineering Controls:** Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

Personal Protection

- Eyes:** Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.
- Skin:** Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.
- Respiratory:** If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Colorless, Clear
Specific Gravity:	0.925 @ 20°C
pH:	13.3 @ 20°C, 100.0%
Freezing Point:	<-11°F
Flash Point:	N/D
Odor:	Strong
Melting Point:	N/A
Initial Boiling Point and Boiling Range:	160°F
Solubility in Water:	Soluble
Evaporation Rate:	N/A
Vapor Density:	0.6
Molecular Weight:	N/D
Viscosity:	N/A
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	7.71 LB/GA
Vapor Pressure:	130 mmHg
% VOC:	N/D
Odor Threshold	N/D
n-octanol Partition Coefficient	N/D
Decomposition Temperature	N/D

Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Acids, Zinc, Copper/copper alloys.
Hazardous Decomposition Products:	Ammonia, Oxides of nitrogen.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

Section 11. Toxicological Information

Acute Toxicity

Chemical Name	Exposure	Type of Effect	Concentration	Species
Ammonium hydroxide	Oral	LD50	350 MG/KG	Rat

Carcinogenicity Category

Component	Source	Code	Brief Description
Ammonium hydroxide	N/E	N/E	N/E

Likely Routes of Exposure: N/D

Symptoms

Inhalation: N/D

Eye Contact: N/D

Skin Contact: N/D

Ingestion: N/D

Skin Corrosion/Irritation: N/D

Serious Eye Damage/Eye Irritation: N/D

Sensitization: N/D

Germ Cell Mutagenicity: N/D

Reproductive/Developmental Toxicity: N/D

Specific Target Organ Toxicity

Single Exposure: N/D

Repeated Exposure: N/D

Aspiration Hazard: N/D

Comments: None.

Section 12. Ecological Information

Ecotoxicity

Species	Duration	Type of Effect	Test Results
Ceriodaphnia dubia	48h	LC50	131 mg/l
Fathead Minnow	96h	LC50	8.2 mg/l

Persistence and Biodegradability: N/D

Bioaccumulative Potential: N/D

Mobility In Soil: N/D

Other Adverse Effects: N/D

Comments: As ammonia

Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.
EPA corrosivity characteristic hazardous waste D002 when disposed of in the original product form.

Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	UN2672	AMMONIA SOLUTIONS (19%)	N/A	8	PGIII
Over 683 GA	UN2672	RQ AMMONIA SOLUTIONS (19%)	N/A	8	PGIII
TDG	UN2672	AMMONIA SOLUTIONS (19%)	N/A	8	PGIII
ICAO	UN2672	AMMONIA SOLUTIONS (19%)	N/A	8	PGIII
IMDG	UN2672	AMMONIA SOLUTIONS (19%)	N/A	8	PGIII

Note: N/A



Section 15. Regulatory Information

Inventory Status

United States (TSCA):
Canada (DSL/NDSL):

All ingredients listed.
All ingredients listed.

Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes

Fire Hazard:	No
Reactive Hazard:	No
Release of Pressure:	No
Acute Health Hazard:	Yes
Chronic Health Hazard:	No

Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
Ammonium hydroxide	Yes	N/A	1000

Comments: None.

State Regulations

California Proposition 65: None known.

Special Regulations

Component	States
Ammonium hydroxide	MA, NY, PA



International Regulations

Canada

WHMIS Classification: D1B (Toxic Material)
E (Corrosive Material)

Controlled Product Regulations (CPR): This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Compliance Information

NSF: N/A

Food Regulations: FDA: Generally Recognized as Safe (GRAS) by the FDA at 21 CFR 184.1139.

KOSHER: This product has not been evaluated for Kosher approval.

FIFRA: N/A

Other: None

Comments: None.

Section 16. Other Information

HMIS Hazard Rating

Health:	3
Flammability:	1
Physical Hazard:	0
PPE:	X

Notes: The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.
The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.



Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Revision Date: March 7, 2017

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MATERIAL SAFETY DATA

905167
00007-00

OCEAN NETWORK EMERGENCY PHONE 1-888-2891-911

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THIS PRODUCT MAY BE CONSIDERED TO BE A HAZARDOUS CHEMICAL UNDER THAT STANDARD. (REFER TO THE OSHA CLASSIFICATION IN SEC. I.) THIS INFORMATION IS REQUIRED TO BE DISCLOSED FOR SAFETY IN THE WORKPLACE. THE EXPOSURE TO THE COMMUNITY, IF ANY, IS QUITE DIFFERENT.

I - PRODUCT IDENTIFICATION

Product Name:	Chlorine
Synonyms:	None
Chemical Family:	Halogen
Formula:	Cl ₂
Use Description:	Chlorinating and oxidizing agent, disinfectant, organic synthesis, water and wastewater treatment, plastics, pharmaceuticals
Hazard Classification:	Irritant or corrosive; skin, eye and lung hazard; toxic by inhalation; compressed gas; oxidizer
Revision No.:	3
Revision Date:	1/10/99
Product Codes:	105015, 105189
File No.:	MSDS0100

II - COMPONENT DATA

Product Composition

CAS or Chemical Name:	Chlorine				
CAS Number:	7782-50-5				
Percentage Range:	98-100 Volume percent				
Hazardous Per 29 CFR 1910.1200:	Yes				
Exposure Standards:	OSHA (PEL)		ACGIH (TLV)		
		ppm	mg/m ³	ppm	mg/m ³
	TWA:	None	None	0.5	1.5
	CEILING:	1	3	None	None
STEL:	None	None	1	2.9	

- P c

DO NOT TAKE INTERNALLY. AVOID CONTACT WITH SKIN, EYES AND CLOTHING. UPON CONTACT WITH SKIN OR EYES, WASH OFF WITH WATER. DO NOT BREATHE GAS OR VAPOR.

STORAGE CONDITIONS:

Store in a cool, dry, well-ventilated place.
DO NOT STORE AT TEMPERATURES ABOVE: 59 Deg.C (140 Deg.F)

PRODUCT STABILITY AND COMPATIBILITY:

SHELF LIFE LIMITATIONS:	Indefinite
INCOMPATIBLE MATERIALS FOR PACKAGING:	NOTICE - Should not be repackaged except by qualified and trained personnel.
INCOMPATIBLE MATERIALS FOR STORAGE OR TRANSPORT:	Alkalis, reducing agents, organic materials

IV - PHYSICAL DATA

Appearance:	Greenish liquid or gas
Melting Point:	-101 Deg.C (-149 Deg.F)
Freezing Point:	
Boiling Point:	-34 Deg.C (-29 Deg.F)
Decomposition Temperature:	None
Specific Gravity:	Not applicable
Bulk Density:	88.4 lb. per cubic feet at 63 Deg.F
pH @ 25° C:	Not applicable
Vapor Pressure @ 25° C:	114 psi
Solubility in Water:	Miscible
Volatiles, Percent by Volume:	100
Evaporation Rate:	Heat of Vaporization: 123.67 BTU per pound
Vapor Density:	Approximately 2.5 (0.7537 lb. per cubic feet at 32 Deg.F)
Molecular Weight:	71
Product is:	A compressed gas
Odor:	Acrid
Coefficient of Oil/Water Distribution:	No Data

V - PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

Personal Protection for Routine Use of Product:

Respiratory Protection:	If air concentrations above the TLV are possible, wear a NIOSH approved respirator
Ventilation:	Use local exhaust ventilation to maintain levels to below the TLV.
Skin and Eye Protection:	Wear gloves, boots, apron and a face shield with safety glasses. A full impermeable suit is recommended if exposure is possible to large portion of body.
Other:	Emergency eye wash and safety showers must be provided in the immediate work area.

Equipment Specifications (When Applicable):

Respirator Type:	Wear NIOSH approved full-face respirator equipped with chemical cartridges for chlorine gas.		
Protective Clothing Type: (This includes: gloves, boots, apron, protective suit.)	GLOVE TYPE:	Neoprene, or butyl rubber	
	BOOT TYPE:	Neoprene, or butyl rubber	
	APRON TYPE:	Neoprene, or butyl rubber	
	PROTECTIVE SUIT:	see section	XI. for additional information

VI - FIRE AND EXPLOSION HAZARD INFORMATION

Flammability Data:

Explosive:	N/A
Flammable:	No
Combustible:	No
Pyrophoric:	No
Flash Point:	Not Applicable
Autoignition Temperature:	Not Applicable
Flammable Limits at Normal Atmospheric Temperature and Pressure (Percent Volume in Air):	LEL - Not Applicable UEL - Not Applicable

NFPA Ratings:

Health:	4
Flammability:	0
Reactivity:	0
Special Hazard Warning	OXIDIZER

HMIS Ratings:

Health:	3
Flammability:	0
Reactivity:	0

Extinguishing Media:

Use extinguishing media compatible to surrounding materials.

Fire Fighting Techniques and Comments:

Use water to cool containers exposed to fire, however, direct spray between fire and containers. DO NOT spray directly on container unless absolutely necessary. Water reactive material; DO NOT spray with water. Contact with reactive metals e.g., aluminum may result in the generation of flammable hydrogen gas. See Section 11 for protective equipment for fire fighting.

VII - REACTIVITY INFORMATION

Conditions Under Which This Product May Be Unstable:

Temperatures Above:	None
Mechanical Shock or Impact:	No
Electrical (Static) Discharge:	No
Other:	Reacts vigorously with titanium, zinc, tin
Hazardous Polymerization:	Will not occur
Incompatible Materials:	Alkalies, reducing agents, organic materials
Hazardous Decomposition:	Hydrochloric acid, hypochlorous acid
Other:	Titanium will react vigorously, resulting in spontaneous ignition, when contacted by DRY Chlorine. Combustion will be supported in carbon steel systems and equipment containing a Chlorine environment at temperatures greater than 480 Deg. F. Properly purge systems and equipment PRIOR to conducting Hot Work.

Summary of Reactivity:

Explosive:	N/A
Oxidizer:	Yes
Pyrophoric:	No
Organic Peroxide:	No
Water Reactive:	Yes
Corrosive:	Yes

VIII - FIRST AID

Eyes

Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention at once.

Skin

Immediately flush with water for at least 15 minutes. Seek medical attention. If clothing, shoes and/or jewelry come in contact with the product, they should be removed immediately and laundered before re-use.

Ingestion

Immediately drink large quantities of water. DO NOT induce vomiting. Seek medical attention at once. DO NOT give anything by mouth if the person is unconscious or if having convulsions.

Inhalation

If person experiences nausea, headache or dizziness, person should stop work immediately and move to fresh air until these symptoms disappear. If breathing is difficult, administer oxygen, keep the person warm and at rest. Seek medical attention.

In the event that an individual inhales enough vapor to lose consciousness, person should be moved to fresh air at once and seek medical attention immediately. If breathing has stopped, artificial respiration should be given immediately. In all cases, ensure adequate ventilation and provide respiratory protection before the person returns to work.

IX - TOXICOLOGY AND HEALTH INFORMATION

Routes of Absorption

Inhalation, skin, eye, ingestion

Warning Statements and Warning Properties

HARMFUL IF INHALED. CAUSES EYE, SKIN AND RESPIRATORY TRACT BURNS. CAN CAUSE LUNG DAMAGE.

Human Threshold Response Data

Odor Threshold:	Approximately 1.7 mg/m ³ (0.3 ppm).
Irritation Threshold:	The irritation threshold is approximately 0.5 ppm.
Immediately Dangerous to Life or Health:	10.0 ppm

Signs, Symptoms and Effects of Exposure

Inhalation

Acute:	Toxic if inhaled. Inhalation of this material is irritating to the nose, mouth, throat and lungs. It may cause inflammation to the respiratory tract with the production of lung edema, which can result in shortness of breath, wheezing, choking, chest pain, and impairment of lung function. The inflammation of the respiratory tract is most evident in the upper portions, but bronchioles, alveolar ducts, and alveoli may also be affected. There is no evidence that acute inhalation of chlorine at low to moderate levels will cause permanent lung damage. At high levels, chlorine is corrosive to the respiratory tract and may cause lung damage.
Chronic:	Repeated inhalation exposure may cause impairment of lung function and permanent lung damage. It may contribute to the development of bronchitis.

Skin

Acute:	Dermal exposure can cause irritation characterized by redness, swelling and scab formation. Contact with liquid chlorine may cause burns with prolonged contact causing destruction of the dermis with impairment of the skin at site of contact to regenerate.
Chronic:	Effects from chronic skin exposure would be similar to those from single exposure except for effects secondary to tissue destruction

Eye

Irritation can occur following eye exposure to the gas with redness, pain, blurred vision, and tearing. Contact with liquid chlorine may cause burns with impairment of vision and corneal damage.

Ingestion

Acute: If liquid is swallowed, irritation and/or burns can occur to the entire gastrointestinal tract, including the stomach and intestines, characterized by nausea, vomiting, diarrhea, abdominal pain, bleeding, and/or tissue ulceration. Ingestion is not a major route of exposure because chlorine is a gas at room temperature.

Chronic: There are no known or reported effects from chronic exposure.

Medical Conditions Aggravated by Exposure

Asthma, respiratory and cardiovascular disease.

Interactions With Other Chemicals Which Enhance Toxicity

None known or reported.

Animal Toxicology

Acute Target Organ Toxicity

Inhalation LC 50: 293 ppm (1 hour, rat)

Oral LD 50: Not applicable. Product is a gas at room temperature.

Dermal LD 50: Not applicable. Product is a gas at room temperature.

Severe irritant to eyes and skin. Contact with the liquid chlorine may cause burns to eyes and skin. Contact with chlorine vapor may cause severe eye irritation.

Reproductive and Developmental Toxicity

There are no known or reported effects on reproductive function or fetal development.

Carcinogenicity

This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA.

Mutagenicity

This product is not known or reported to be mutagenic.

Aquatic Toxicity

LC 50 Bluegill: 0.44 mg/l/96 hours

LC 50 Yellow perch: 0.88 mg/l/1 hr.

LC 50 Channel catfish (fingerling): 0.07 mg/l/96 hrs

LC 50 Daphnia magna: 0.017 mg/l/48 hrs

CHRONIC TARGET ORGAN EFFECTS IN LABORATORY ANIMALS

Inhalation exposure has produced pathological change in the lungs and nasal passages of monkeys and rats characterized by inflammation, epithelial hyperplasia of loss of cilia. In addition, damage was observed in liver and kidneys from treated rats. These effects were seen at concentrations much higher than those expected from occupational exposure.

X - TRANSPORTATION INFORMATION

THIS MATERIAL IS REGULATED AS A DOT HAZARDOUS MATERIAL.

DOT Description from the Hazardous Materials Table 49 CFR 172.101:

Land (U.S. DOT):	Chlorine, 2.3, UN1017, Poison Inhalation Hazard - Hazard Zone B - Marine Pollutant
Water (IMO):	Same as LAND above
Air (IATA/ICAO):	FORBIDDEN
Hazard Label/Placard:	Poison Gas, Corrosive
Reportable Quantity:	10 lbs. (Per 49 CFR 172.101, Appendix)
Emergency Guide:	124

XI - SPILL AND LEAKAGE PROCEDURES

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC AT 800-424-9300.

Reportable Quantity:	This product is subject to a Reportable Quantity with respect to chlorine. RQs are subject to change and reference should be made to 40 CFR 302.4 for the current requirements.
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Spill Mitigation Procedures:

Hazardous concentrations in air may be found in local spill area and immediately downwind. Do not put water directly on this product as gas evolution may increase. This product may represent an explosion hazard, if in contact with incompatible materials. Remove all sources of ignition.

Air Release:	This material is heavier than air and may concentrate in low areas. Ambient air and water temperature must be considered if a water fog is used to attempt absorption or dispersion. It must be understood that very little vapor may actually be absorbed and the gas may be dispersed to other areas. Contain all fog water for neutralization and treatment.
Water Release:	This material is heavier than water. Chlorine will sink and bubble into water to form a hypochlorous acid, which will later self decompose to various materials. Stop flow of material and divert water to a holding area for treatment and neutralization.
Land Spill:	Dike area of spill and stop flow if safe to do so. Cover area of spill with foam to reduce air contamination. Begin treatment to neutralize material as soon as possible.

Spill Residues:

Dispose of per guidelines under Section 12, WASTE DISPOSAL.

This material may be neutralized for disposal; you are requested to contact OCEAN at 888-2891-911 before beginning any such operation.

Personal Protection for Emergency Spill and Firefighting Situations:

In case of fire, use normal fire fighting equipment.

For response to Chlorine gas it is recommended to use as a minimum level "B" protection that is compatible to Chlorine and for Liquid spills it is recommended to utilize as a minimum enhanced level "B" (Enhanced level "B" is the addition of a splash hood). Responders can reference Chlorine Institute pamphlet #65 on PPE.

Additional protective clothing must be worn to prevent personal contact with this material. Those items include but are not limited to: boots, gloves, hard hat, splash-proof goggles, full face shield and impervious clothing, i.e., chemically impermeable suit.

Compatible materials for response to this material are neoprene and butyl rubber.

Protection concerns must also address the potential of the physical characteristics of this product as a compressed gas, corrosive and a poison.

XII - WASTE DISPOSAL

If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D003, D001.

If this product becomes a hazardous waste, it will be a hazardous waste which is subject to the Land Disposal Restrictions under 40 CFR 268 and must be managed accordingly.

As a hazardous liquid waste, it must be disposed of in accordance with local, state and federal regulations in a permitted hazardous waste treatment, storage and disposal facility by treatment.

Chlorine can exist in a gaseous state, and controlled evaporation may be warranted.

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THIS MATERIAL. THE USER OF THIS MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.

XIII - ADDITIONAL REGULATORY STATUS INFORMATION

TOXIC SUBSTANCES CONTROL ACT:

This product is listed on the Toxic Substances Control Act inventory.

NSF LIMITS: NSF Maximum Drinking Water Use Concentration - 30 mg/l as chlorine

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT TITLE III:

HAZARD CATEGORIES, PER 40 CFR 370.2:

HEALTH:

Immediate (Acute)

Delayed (Chronic)

PHYSICAL:

Sudden release of pressure

Reactivity

EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW, PER 40 CFR 355, APP.A:

EXTREMELY HAZARDOUS SUBSTANCE - THRESHOLD PLANNING QUANTITY:

100 lbs.

SUPPLIER NOTIFICATION REQUIREMENTS, PER 40 CFR 372.45:

This mixture or tradename product contains a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372.

CHEMICALS LISTED ARE: Chlorine

XIV - ADDITIONAL INFORMATION

MSDS REVISION STATUS: The Chlor/Alkali MSDS Control Group update this MSDS May, 1999.

XV - MAJOR REFERENCES

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16. Occupational Health Guideline for Chlorine. U.S. Department of Health and Human Services, September 1978.
17. Material Safety Data Sheet, OHS04600. Occupational Health Services, Inc., p. 1-11.

THE INFORMATION IN THIS MATERIAL SAFETY DATA SHEET SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. OLIN BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION, BUT MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MATERIAL SAFETY DATA SHEET IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT OLIN AT THE PHONE NUMBER LISTED BELOW TO MAKE CERTAIN THAT THIS SHEET IS CURRENT.

ORC MSDS CONTROL GROUP
Olin Chlor Alkali
1186 Lower River Road
P.O. Box 248
Charleston, TN 37310
Phone Number: (888)-658-MSDS (6737)

1. Identification

Product identifier	Sodium Hypochlorite, 5 - 17%	
Other means of identification		
SDS number	10000022	
Synonyms	L.T. Sanitizer 5.25%, Hypo, Liquid Bleach, Bleach, Hypochlorite, Javel Water.	
Recommended use	Swimming pool chlorinator, hard surface cleaner, mildecide, Water treatment chemical, Biocides, bleach solutions and bleach fixer solutions	
Recommended restrictions	None known.	
Manufacturer/Importer/Supplier/Distributor information		
Company name	Olin Chlor Alkali Products	
Address	490 Stuart Road, NE Cleveland, TN 37312	
Company name	Pioneer Americas, LLC (d/b/a Olin Chlor Alkali Products)	
Address	490 Stuart Road, NE Cleveland, TN 37312	
Company name	Olin Canada ULC (d/b/a Olin Chlor Alkali Products)	
Address	2020 University, Suite 2190 Montreal, Quebec H3A 2A5	
General Information		
Telephone	(888) 658-6SDS (737)	
Website	olinchloralkali.com	
Contact person	ORC SDS Control Group	
Emergency phone number	US: 1-800-424-9300	Canada: 1-800-567-7455

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 2
OSHA defined hazards	Not classified.	
Label elements		



Signal word	Danger
Hazard statement	May be corrosive to metals. Causes severe skin burns and eye damage. May cause respiratory irritation. Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.
Precautionary statement	
Prevention	Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe mist or vapor. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Keep only in original container. Avoid release to the environment.
Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage. Collect spillage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information

Contact with acids liberates toxic gas.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Sodium hypochlorite	7681-52-9	5-17
Sodium hydroxide	1310-73-2	0.10-4.25

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Take off immediately all contaminated clothing. Wash off IMMEDIATELY with plenty of water for at least 15-20 minutes. Get medical attention immediately. Wash contaminated clothing before reuse. Call a physician or poison control center immediately.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed Corrosive effects. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Indication of immediate medical attention and special treatment needed Treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. With eye exposure, continue flushing during transport to hospital.

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire. Do not use dry extinguishing media that contains ammonium compounds.

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire-fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Absorb spillage to prevent material damage. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see Section 8 of the SDS.

Methods and materials for containment and cleaning up Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use. For waste disposal, see Section 13 of the SDS.

Environmental precautions Do not discharge into drains, water courses or onto the ground. Environmental manager must be informed of all major releases.

7. Handling and storage

Precautions for safe handling Wear appropriate personal protective equipment. Do not get in eyes, on skin, on clothing. Use with adequate ventilation. Observe good industrial hygiene practices. Do not apply heat or direct sunlight. Temperature and product concentration affect product quality and decomposition rates.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store in a cool and well-ventilated place. Store in a corrosive resistant container. Consult container manufacturer for additional guidance. Store away from and do not mix with incompatible materials such as acids, oxidizers, organics, reducing agents, and all metals except titanium.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	PEL	2 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
Sodium hypochlorite (CAS 7681-52-9)	STEL	2 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles) and a face shield. Wear a full-face respirator, if needed.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing. Reports indicate that sodium hypochlorite can react with various fabrics usually increasing with concentration. Reactions vary significantly depending on strength of chemical, material, fabric treatment and color of dyes. FRC treated cotton has a stronger response than plain cotton. Poly blend fabrics and meta aramid fabric have a weaker response than natural fibers. Contact the Personal Protective Equipment manufacturer for specific information about their products.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Liquid.
Color	Not available.

Odor Pungent.

Odor threshold 0.9 mg/m³

pH 12 - 14 (25 °C/77 °F)

Melting point/freezing point -4 °F (-20 °C) (7% solution)

Initial boiling point and boiling range Not available.

Flash point Not applicable

Evaporation rate	No data available
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not applicable
Flammability limit - upper (%)	Not applicable
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	12 mm Hg (20°C/68°F)
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Completely miscible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not applicable
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Bulk density	Not applicable
Molecular formula	NaOCl
Molecular weight	74.5 g/mol

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials. Avoid ultraviolet (UV) light sources. Excessive heat. Reacts violently with strong acids. Acid contact will produce chlorine gas. Amine contact will produce chloramines.
Incompatible materials	Strong oxidizing agents. Acids. Metals. Organic compounds. Ammonia.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.
Inhalation	Vapors and spray mist may irritate throat and respiratory system and cause coughing.
Skin contact	Causes skin burns.
Eye contact	Causes eye burns.

Symptoms related to the physical, chemical and toxicological characteristics Corrosive effects. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity Occupational exposure to the substance or mixture may cause adverse effects.

Product	Species	Test Results
Sodium Hypochlorite, 5 - 17% (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2 g/kg
<i>Oral</i>		
LD50	Rat	3 - 5 g/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	No data available.
Skin sensitization	No data available.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Sodium hypochlorite (CAS 7681-52-9)	3 Not classifiable as to carcinogenicity to humans.
Reproductive toxicity	No data available.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	No data available.
Aspiration hazard	Not classified, however droplets of the product may be aspirated into the lungs through ingestion or vomiting and may cause a serious chemical pneumonia.
Chronic effects	Prolonged or repeated overexposure causes lung damage.
Further information	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Product	Species		Test Results
Sodium Hypochlorite, 5 - 17% (CAS Mixture)			
Aquatic			
Crustacea	LC50	Daphnia	1 mg/l
Fish	LC50	Bluegill (<i>Lepomis macrochirus</i>)	0.6 mg/l, 48 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available for this product.
Mobility in soil	Not available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN1791
UN proper shipping name	Hypochlorite solutions
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB3, N34, T4, TP2, TP24

Packaging exceptions 154
Packaging non bulk 203
Packaging bulk 241

IATA

UN number UN1791
UN proper shipping name Hypochlorite solution
Transport hazard class(es)
Class 8
Subsidiary risk -
Label(s) 8
Packing group III
Environmental hazards Yes
ERG Code 8L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN1791
UN proper shipping name HYPOCHLORITE SOLUTION
Transport hazard class(es)
Class 8
Subsidiary risk -
Label(s) 8
Packing group III
Environmental hazards
Marine pollutant Yes
EmS F-A, S-B
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to
Annex II of MARPOL 73/78 and
the IBC Code

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Sodium hydroxide (CAS 1310-73-2) LISTED
Sodium hypochlorite (CAS 7681-52-9) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Sodium hydroxide (CAS 1310-73-2)
Sodium hypochlorite (CAS 7681-52-9)

US. New Jersey Worker and Community Right-to-Know Act

Sodium hydroxide (CAS 1310-73-2)
Sodium hypochlorite (CAS 7681-52-9)

US. Pennsylvania Worker and Community Right-to-Know Law

Sodium hydroxide (CAS 1310-73-2)
Sodium hypochlorite (CAS 7681-52-9)

US. Rhode Island RTK

Sodium hydroxide (CAS 1310-73-2)
Sodium hypochlorite (CAS 7681-52-9)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

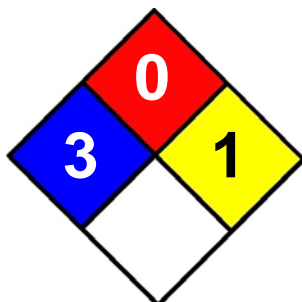
16. Other information, including date of preparation or last revision

Issue date 27-February-2014

Revision date 15-April-2014

Version # 04

NFPA Ratings



List of abbreviations


LD50: Lethal Dose, 50%.
LC50: Lethal Concentration, 50%.
EC50: Effective concentration, 50%.
TWA: Time weighted average.

References

EPA: AQUIRE database
HSDB® - Hazardous Substances Data Bank
US. IARC Monographs on Occupational Exposures to Chemical Agents
IARC Monographs. Overall Evaluation of Carcinogenicity
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

Disclaimer

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.

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SAFETY DATA SHEET		Revision Date: 08/22/2022
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Zalta™ MF5264 FLOCCULANT ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 883170		Version: 2.3

SECTION 1. IDENTIFICATION

Product identifier

Trade name : Zalta™ MF5264
FLOCCULANT
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Flocculating agent

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin irritation : Category 2

Eye irritation : Category 2B

GHS label elements

Hazard pictograms :




Signal word : Warning

Hazard statements : H315 + H320 Causes skin and eye irritation.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves.

Response:

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P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313 If skin irritation occurs: Get medical advice/attention.
P337 + P313 If eye irritation persists: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.

Other hazards

Material can create slippery conditions.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture


Components

Chemical name	CAS-No.	Classification	Concentration (%)
ALIPHATIC HYDROCARBON	Trade Secret	Flam. Liq. 4; H227 Asp. Tox. 1; H304	>= 20 - < 30
ALCOHOL ETHOXYLATE	Trade Secret	Acute Tox. 4; H302 Eye Dam. 1; H318	>= 1 - < 1.5

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : Remove contaminated clothing. If irritation develops, get medical attention.
If on skin, rinse well with water.
First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
Wash contaminated clothing before re-use.
- In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.


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If eye irritation persists, consult a specialist.

- If swallowed : Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Lung irritation
confusion
irregular heartbeat
Convulsions
Inhalation of high concentrations of this material, as could occur in enclosed spaces or during deliberate abuse, may be associated with cardiac arrhythmias. Sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to this material.
This material is an aspiration hazard. Potential danger from aspiration must be weighed against possible oral toxicity when deciding whether to induce vomiting.
Causes skin and eye irritation.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : If product is heated above its flash point it will produce vapors sufficient to support combustion. Vapors are heavier than air and may travel along the ground and be ignited by heat, pilot lights, other flames and ignition sources at locations near the point of release.
Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
Nitrogen oxides (NOx)
Hydrocarbons

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- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Material can create slippery conditions.
Water may cause extremely slippery conditions.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Material can create slippery conditions.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Avoid spillage on floor as the product can become very slippery.
Do not breathe vapours/dust.
Do not smoke.
Container hazardous when empty.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Electrical installations / working materials must comply with the technological safety standards.

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Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
ALIPHATIC HYDROCARBON	Trade Secret	TWA	200 mg/m ³ (total hydrocarbon vapor)	ACGIH

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.

Filter type : Type A

Hand protection
Material : nitrile rubber


Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.

Skin and body protection : Wear as appropriate:
Impervious clothing
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.

Hygiene measures : Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance : emulsion

Colour : white

Odour : hydrocarbon-like

Odour Threshold : No data available

pH : ca. 4

Melting point/freezing point : No data available

Boiling point/boiling range : > 212 °F / > 100 °C

Flash point : > 212 °F / > 100 °C
Method: ASTM D 92

Evaporation rate : No data available

Flammability (solid, gas) : Not classified as a flammability hazard

Self-ignition : does not ignite

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : No data available


Density : ca. 1.0 g/cm³ (68 °F / 20 °C)

Solubility(ies)
Water solubility : dispersible
Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Decomposition temperature : No data available

Viscosity

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- Viscosity, dynamic : 300 - 1,400 cps (68 °F / 20 °C)
- Viscosity, kinematic : > 20.5 mm²/s (104 °F / 40 °C)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.
- Explosive properties : Not explosive
- Oxidizing properties : The substance or mixture is not classified as oxidizing.

SECTION 10. STABILITY AND REACTIVITY

- Reactivity : No decomposition if stored and applied as directed.
- Chemical stability : Stable under recommended storage conditions.
- Possibility of hazardous reactions : Product will not undergo hazardous polymerization.
- Conditions to avoid : Heat, flames and sparks.
- Incompatible materials : Strong oxidizing agents
strong reducing agents
- Hazardous decomposition products : Carbon monoxide
Carbon dioxide (CO₂)
Nitrogen oxides (NO_x)
Hydrocarbons

SECTION 11. TOXICOLOGICAL INFORMATION


Acute toxicity

Not classified based on available information.

Components:

ALIPHATIC HYDROCARBON:

- Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
- Acute inhalation toxicity : LC 50 (Rat, male and female): > 5.28 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403
Assessment: No adverse effect has been observed in acute inhalation toxicity tests.
- Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Assessment: No adverse effect has been observed in acute dermal toxicity tests.

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ALCOHOL ETHOXYLATE:

Acute oral toxicity : LD50 (Rat): Expected > 300 - 2,000 mg/kg

Skin corrosion/irritation

Causes skin irritation.

Product:

Species : Rabbit
Method : OECD Test Guideline 404
Result : irritating

Components:

ALIPHATIC HYDROCARBON:

Result : Mildly irritating to skin

Serious eye damage/eye irritation

Causes eye irritation.

Product:

Species : Rabbit
Result : Slightly to moderately irritating to eyes
Method : OECD Test Guideline 405

Remarks : Unlikely to cause eye irritation or injury.

Components:

ALIPHATIC HYDROCARBON:

Result : Mildly irritating to eyes

ALCOHOL ETHOXYLATE:

Result : Corrosive to eyes

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.


Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is

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identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Components:

ALIPHATIC HYDROCARBON:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION


Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss): > 10 - 100 mg/l
Exposure time: 96 h
Test Type: static test
Remarks: Information given is based on data on the components and the ecotoxicology of similar products.

LC50 (Menidia beryllina (Silverside)): 222 mg/l
Exposure time: 96 h
Test Type: static test
Method: EPA-821-R-02-012

NOEC (Menidia beryllina (Silverside)): 109 mg/l
Exposure time: 96 h
Test Type: static test
Method: EPA-821-R-02-012

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Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): > 10 - 100 mg/l
Exposure time: 48 h

EC50 (Mysidopsis bahia (opossum shrimp)): 3.06 mg/l
Exposure time: 96 h
Test Type: static test
Method: EPA-821-R-02-012

NOEC (Mysidopsis bahia (opossum shrimp)): 1.29 mg/l
Exposure time: 96 h
Test Type: static test
Method: EPA-821-R-02-012

Ecotoxicology Assessment

Acute aquatic toxicity : Acute aquatic toxicity Category 3; Harmful to aquatic life.

Chronic aquatic toxicity : Not classified based on available information.

Components:

ALIPHATIC HYDROCARBON:

Ecotoxicology Assessment

Acute aquatic toxicity : No toxicity at the limit of solubility

Chronic aquatic toxicity : No toxicity at the limit of solubility

ALCOHOL ETHOXYLATE:

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

Chronic aquatic toxicity : Not classified based on available information.

Persistence and degradability

Product:

Biodegradability : Remarks: At natural pHs (>6), the polymer degrades due to the hydrolysis to more than 70% in 28 days.


Physico-chemical removability : Remarks: The product can be eliminated from water by abiotic processes, e.g. adsorption on activated sludge.

Bioaccumulative potential

No data available

Mobility in soil

No data available

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Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.

The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.


National Regulations

49 CFR

Not regulated as a dangerous good

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

NZIoC : On the inventory, or in compliance with the inventory

TSCA : All substances listed as active on the TSCA inventory

AIIC : On the inventory, or in compliance with the inventory

DSL : All components of this product are on the Canadian DSL

KECI : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

TCSI : Not in compliance with the inventory

TSCA list


No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

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Full text of H-Statements


H227 : Combustible liquid.
H302 : Harmful if swallowed.
H304 : May be fatal if swallowed and enters airways.
H318 : Causes serious eye damage.

Full text of other abbreviations

Acute Tox. : Acute toxicity
Asp. Tox. : Aspiration hazard
Eye Dam. : Serious eye damage
Flam. Liq. : Flammable liquids
ACGIH : USA. ACGIH Threshold Limit Values (TLV)
ACGIH / TWA : 8-hour, time-weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative


Sources of key data used to compile the Safety Data Sheet
Key literature references and sources of data
SOLENIS Internal data
SOLENIS internal data including own and sponsored test reports

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The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Amerfloc™ 490 COAGULANT
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Industrial chemical

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

GHS label elements

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

Other hazards

Material can create slippery conditions.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS


Substance / Mixture : Mixture

Components

No hazardous ingredients

SECTION 4. FIRST AID MEASURES


General advice : No hazards which require special first aid measures.

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- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
- In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
If eye irritation persists, consult a specialist.
- If swallowed : IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
nitrogen oxides (NOx)
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.

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- Further information : Material can create slippery conditions.
Water may cause extremely slippery conditions.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Material can create slippery conditions.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Avoid spillage on floor as the product can become very slippery.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Electrical installations / working materials must comply with the technological safety standards.
- Further information on storage stability : No decomposition if stored and applied as directed.

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Hand protection

Material : Nitrile rubber

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.

Skin and body protection : Wear as appropriate:
Impervious clothing
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.

Hygiene measures : Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES


Appearance : liquid

Colour : clear, light yellow

Odour : none

Odour Threshold : No data available

pH : 4 - 7

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Melting point/freezing point : < 32 °F / 0 °C

Initial boiling point and boiling range : > 212 °F / 100 °C

Flash point : does not flash

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Self-ignition : does not ignite

Upper explosion limit / Upper flammability limit : Not applicable

Lower explosion limit / Lower flammability limit : Not applicable

Vapour pressure : 2.3 kPa (68 °F / 20 °C)

Relative vapour density : 0.804 (68 °F / 20 °C)

Relative density : 1.1 - 1.2

Density : No data available

Solubility(ies)
Water solubility : completely miscible

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : log Pow: < 0

Decomposition temperature : > 302 °F / 150 °C

Viscosity
Viscosity, dynamic : 4,000 - 9,000 cps (77 °F / 25 °C)

Viscosity, kinematic : No data available


Oxidizing properties : The substance or mixture is not classified as oxidizing.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous : Product will not undergo hazardous polymerization.

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reactions

Conditions to avoid : Keep away from heat, flame, sparks and other ignition sources.
Freezing temperatures.

Incompatible materials : aluminum
Copper
Iron
strong mineral acids
Strong oxidizing agents

Hazardous decomposition products : Carbon monoxide
Carbon dioxide (CO2)
Nitrogen oxides (NOx)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Skin corrosion/irritation

Not classified based on available information.

Product:

Result : Mildly irritating to skin

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Result : Mildly irritating to eyes

Remarks : Unlikely to cause eye irritation or injury.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.


Respiratory sensitisation

Not classified based on available information.

Product:

Germ cell mutagenicity

Not classified based on available information.

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Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 10 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 10 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202


Ecotoxicology Assessment

Acute aquatic toxicity : Acute aquatic toxicity Category 3; Harmful to aquatic life.

Chronic aquatic toxicity : Chronic aquatic toxicity Category 3; Harmful to aquatic life with long lasting effects.

Persistence and degradability

Product:

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Biodegradability : Result: Not readily biodegradable.

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life with long lasting effects.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good


Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

Not regulated as a dangerous good

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Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory


TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

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Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet


Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports


The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the

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specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Burst™ WF7300 DEFOAMER
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Industrial chemical

Details of the supplier of the safety data sheet Solenis LLC 2475 Pinnacle Drive Wilmington, DE 19803 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

GHS label elements

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS


Substance / Mixture : Mixture

Components

No hazardous ingredients

SECTION 4. FIRST AID MEASURES


General advice : No hazards which require special first aid measures.

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- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
- In case of eye contact : Remove contact lenses.
Protect unharmed eye.
- If swallowed : Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : No symptoms known or expected.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Specific hazards during firefighting : If product is heated above its flash point it will produce vapors sufficient to support combustion. Vapors are heavier than air and may travel along the ground and be ignited by heat, pilot lights, other flames and ignition sources at locations near the point of release.
Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
undefined organics
formaldehyde
Hydrocarbons
Silicon oxides
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Standard procedure for chemical fires.

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Special protective equipment : In the event of fire, wear self-contained breathing apparatus.
for firefighters

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
- Conditions for safe storage : Electrical installations / working materials must comply with the technological safety standards.
- Materials to avoid : No materials to be especially mentioned.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION


Components with workplace control parameters

Contains no substances with occupational exposure limit values.

- Engineering measures** : General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment


- Respiratory protection : No personal respiratory protective equipment normally required.

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- Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.
- Skin and body protection : Wear as appropriate:
Safety shoes
Wear resistant gloves (consult your safety equipment supplier).
- Hygiene measures : General industrial hygiene practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Colour : opaque, white, off-white
- Odour : fatty odour
- Odour Threshold : No data available
- pH : 9
Concentration: 5 %
(as an emulsion)
- Melting point/freezing point : 32 °F / 0 °C
- Boiling point/boiling range : 212 °F / 100 °C
- Flash point : > 200.1 °F / 93.4 °C
Method: Pensky Martens closed cup
- Evaporation rate : No data available
- Flammability (solid, gas) : No data available
- Self-ignition : No data available
- Upper explosion limit / Upper flammability limit : No data available
- Lower explosion limit / Lower flammability limit : No data available
- Vapour pressure : < 1.33 hPa (68 °F / 20 °C)
- Relative vapour density : > 1

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AIR=1

Relative density	:	8.1 - 8.3 (68 °F / 20 °C)
Density	:	0.974 - 1.004 g/ml
Solubility(ies)		
Water solubility	:	dispersible
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	300 - 1,200 cps (68 °F / 20 °C)
Viscosity, kinematic	:	No data available
Oxidizing properties	:	No data available
Particle size	:	No data available


SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	Product will not undergo hazardous polymerization.
Incompatible materials	:	halogens strong mineral acids Strong oxidizing agents
Hazardous decomposition products	:	Carbon monoxide Carbon dioxide (CO ₂) undefined organics Formaldehyde Hydrocarbons Silicon oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

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Skin corrosion/irritation

Not classified based on available information.

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Remarks : Unlikely to cause eye irritation or injury.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.


Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

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SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 3,536 mg/l
 Exposure time: 96 h
 Test Type: static test
 Method: OECD Test Guideline 203
 GLP: no

LC50 (Oncorhynchus mykiss (rainbow trout)): > 1,000 mg/l
 Exposure time: 96 h
 Test Type: static test
 Method: EPS 1/RM/9
 GLP: no
 Remarks: see user defined free text

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 5,619 mg/l
 Exposure time: 48 h
 Test Type: static test
 Method: OECD Test Guideline 202
 GLP: no

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects


Product:

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.

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Contaminated packaging : Empty remaining contents.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

Not regulated as a dangerous good

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.


California Prop. 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

TCSI : On the inventory, or in compliance with the inventory

TSCA : All substances listed as active on the TSCA inventory

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AIIC : On the inventory, or in compliance with the inventory
 DSL : All components of this product are on the Canadian DSL
 ENCS : Not in compliance with the inventory
 KECI : On the inventory, or in compliance with the inventory
 PICCS : On the inventory, or in compliance with the inventory
 IECSC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.


SECTION 16. OTHER INFORMATION

Further information

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Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical

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Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

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US / EN



Univar USA Inc Safety Data Sheet

SDS No:

Version No:

Order No:

3075 Highland Pkwy, Ste 200, Downers Grove, IL 60515
(425) 889 3400

Emergency Assistance

For emergency assistance involving chemicals call
Chemtrec - (800) 424-9300



Univar
3075 Highland Pkwy STE 200
Downers Grove, IL 60515
425-889-3400

SAFETY DATA SHEET

1. Identification

Product identifier: AMMONIUM HYDROXIDE 10-35%

Other means of identification

Synonyms: Aqua Ammonia

SDS number: 000100000133

Recommended use and restriction on use

Recommended use: Not available.

Restrictions on use: Not known.

Emergency telephone number:For emergency assistance Involving chemicals

call CHEMTREC day or night at: 1-800-424-9300. CHEMTREC INTERNATIONAL Tel# 703-527-3887

2. Hazard(s) identification

Hazard classification

Health hazards

Acute toxicity (Oral) Category 4

Skin corrosion/irritation Category 1A

Serious eye damage/eye irritation Category 1

Environmental hazardsAcute hazards Category 3
to the aquatic environment

Label elements

Hazard symbol



Version: 1.2
Revision date: 05/29/2015



Signal word	Danger
Hazard statement	Corrosive. Harmful if swallowed. Causes severe skin burns and eye damage. Harmful to aquatic life.
Precautionary statement	
Prevention	Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dust or mists. Wear protective gloves/protective clothing/eye protection/face protection.
Response	IF INHALED: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF SWALLOWED: Call a POISON CENTER/doctor/ if you feel unwell. Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. Specific treatment (see this label). Wash contaminated clothing before reuse.
Storage	Store in a closed container. Store in a well-ventilated place. Store locked up.
Disposal	Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

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Revision date: 05/29/2015



Other hazards which do not result in GHS classification None.

3. Composition/information on ingredients

Substances

Chemical identity	Common name and synonyms	CAS number	Content in percent (%)*
Ammonium Hydroxide		1336-21-6	>=10 - <=35%
Water		7732-18-5	>=65 - <=90%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Ingestion: Do NOT induce vomiting. Never give liquid to an unconscious person. Get medical attention.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. Perform artificial respiration if breathing has stopped. Get medical attention.

Skin contact: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately.

Eye contact: If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

Most important symptoms/effects, acute and delayed

Symptoms: No data available.

Indication of immediate medical attention and special treatment needed

Treatment: No data available.

5. Fire-fighting measures

General fire hazards: No data available.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use: Foam. Carbon dioxide or dry powder.

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Unsuitable extinguishing media: No data available.
Specific hazards arising from the chemical: No data available.
Special protective equipment and precautions for firefighters
Special fire fighting procedures: No data available.
Special protective equipment for fire-fighters: No data available.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: No data available.
Methods and material for containment and cleaning up: Absorb spillage with non-combustible, absorbent material. Dike for later disposal.

7. Handling and storage

Precautions for safe handling: Container must be kept tightly closed. Do not get in eyes, on skin, on clothing. Use personal protective equipment as required. Use only in well-ventilated areas.
Conditions for safe storage, including any incompatibilities: No data available.

Version: 1.2
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8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
Ammonium Hydroxide	TWA	25 ppm	US. ACGIH Threshold Limit Values (03 2013)
	STEL	35 ppm	US. ACGIH Threshold Limit Values (03 2013)
	REL	25 ppm 18 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	35 ppm 27 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	50 ppm 35 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	STEL	35 ppm 27 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	AN ESL	17 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	ST ESL	170 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	ST ESL	120 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	AN ESL	12 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	TWA PEL	25 ppm 18 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)
	STEL	35 ppm 27 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)

Appropriate engineering controls No data available.

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Individual protection measures, such as personal protective equipment

General information: No data available.
Eye/face protection: No data available.
Skin protection
 Hand protection: No data available.
 Other: No data available.
Respiratory protection: No data available.
Hygiene measures: No data available.

9. Physical and chemical properties

Physical state: Liquid
Form: No data available.
Color: No data available.
Odor: No data available.
Odor threshold: No data available.
pH: 11.6
Melting point/freezing point: -69 °C
Initial boiling point and boiling range: No data available.
Flash Point: No data available.
Evaporation rate: No data available.
Flammability (solid, gas): No data available.
Upper/lower limit on flammability or explosive limits
 Flammability limit - upper (%): No data available.
 Flammability limit - lower (%): No data available.
 Explosive limit - upper (%): No data available.
 Explosive limit - lower (%): No data available.
Vapor pressure: No data available.
Vapor density: No data available.
Relative density: No data available.
Solubility(ies)
 Solubility in water: No data available.
 Solubility (other): No data available.
Partition coefficient (n-octanol/water): No data available.

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Auto-ignition temperature: No data available.
Decomposition temperature: No data available.
Viscosity: No data available.

10. Stability and reactivity

Reactivity: No data available.
Chemical stability: No data available.
Possibility of hazardous reactions: No data available.
Conditions to avoid: No data available.
Incompatible materials: No data available.
Hazardous decomposition products: No data available.

11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

Ingestion: No data available.
Inhalation: No data available.
Skin contact: No data available.
Eye contact: No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product: ATEmix (): 350 mg/kg

Dermal

Product: No data available.

Inhalation

Product: No data available.

Repeated dose toxicity

Product: No data available.

Skin corrosion/irritation

Product: No data available.

Serious eye damage/eye irritation

Product: No data available.

Respiratory or skin sensitization

Product: No data available.

Carcinogenicity

Product: No data available.

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IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ cell mutagenicity

In vitro

Product: No data available.

In vivo

Product: No data available.

Reproductive toxicity

Product: No data available.

Specific target organ toxicity - single exposure

Product: No data available.

Specific target organ toxicity - repeated exposure

Product: No data available.

Aspiration hazard

Product: No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

Ammonium Hydroxide LC 50 (Fathead minnow (Pimephales promelas), 24 h): 17 mg/l Mortality LC 50 (Goldfish (Carassius auratus), 24 h): 17 mg/l Mortality LC 50 (Western mosquitofish (Gambusia affinis), 24 h): 18 mg/l Mortality LC 50 (Channel catfish (Ictalurus punctatus), 24 h): 2.36 mg/l Mortality LC 50 (Fathead minnow (Pimephales promelas), 24 h): 23.02 mg/l Mortality

Aquatic invertebrates

Product: No data available.

Specified substance(s):

Ammonium Hydroxide LC 50 (Water flea (Daphnia magna), 25 h): 60 mg/l Mortality LC 50 (Water flea (Ceriodaphnia dubia), 48 h): > 0 - < 10 mg/l Mortality LC 50 (Water flea (Daphnia magna), 50 h): 32 mg/l Mortality LC 50 (Water flea (Daphnia

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magna), 100 h): 20 mg/l Mortality

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and degradability

Biodegradation

Product: No data available.

BOD/COD ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration factor (BCF)

Product: No data available.

Partition coefficient n-octanol / water (log Kow)

Product: No data available.

Mobility in soil:

No data available.

Known or predicted distribution to environmental compartments

Ammonia, aqueous solution No data available.

Water No data available.

Known or predicted distribution to environmental compartments

Water No data available.

13. Disposal considerations

Disposal instructions: No data available.

Contaminated packaging: No data available.

14. Transport information

DOT

UN number: UN 2672
UN proper shipping name: Ammonia solutions
Transport hazard class(es)
Class: 8
Label(s): 8
Packing group: III
Marine Pollutant: Not regulated.

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Special precautions for user: -

IMDG

UN number: UN 2672
UN proper shipping name: AMMONIA SOLUTION
Transport hazard class(es)
Class: 8
Label(s): 8
EmS No.: F-A, S-B
Packing group: III
Marine Pollutant: Not regulated.
Special precautions for user: -

IATA

UN number: UN 2672
Proper Shipping Name: AMMONIA SOLUTION
Transport hazard class(es):
Class: 8
Label(s): 8
Packing group: III
Environmental hazards: Not regulated.
Special precautions for user: -
Other information
Passenger and cargo aircraft: Allowed.
Cargo aircraft only: Allowed.

15. Regulatory information

US federal regulations US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

Ammonium Hydroxide Reportable quantity: 1000 lbs.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

Not listed.

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SARA 302 Extremely hazardous substance

None present or none present in regulated quantities.

SARA 304 Emergency release notification

<u>Chemical identity</u>	<u>RQ</u>
Ammonium Hydroxide	1000 lbs.

SARA 311/312 Hazardous chemical

<u>Chemical identity</u>	<u>Threshold Planning Quantity</u>
Ammonium Hydroxide	500 lbs

SARA 313 (TRI reporting)

<u>Chemical identity</u>	<u>Reporting threshold for other users</u>	<u>Reporting threshold for manufacturing and processing</u>
Ammonium Hydroxide	10000 lbs	25000 lbs.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

Ammonium Hydroxide Reportable quantity: 1000 lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US state regulations

US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act

Ammonium Hydroxide Listed

US. Massachusetts RTK - Substance List

Ammonium Hydroxide Listed

US. Pennsylvania RTK - Hazardous Substances

Ammonium Hydroxide Listed

US. Rhode Island RTK

Ammonium Hydroxide Listed

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Inventory Status: Australia AICS:	Not in compliance with the inventory.
Canada DSL Inventory List:	Not in compliance with the inventory.
EU EINECS List:	On or in compliance with the inventory
EU ELINCS List:	Not in compliance with the inventory.
Japan (ENCS) List:	Not in compliance with the inventory.
EU No Longer Polymers List:	Not in compliance with the inventory.
China Inv. Existing Chemical Substances:	Not in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI):	Not in compliance with the inventory.
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	Not in compliance with the inventory.
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	Not in compliance with the inventory.
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

16. Other information, including date of preparation or last revision

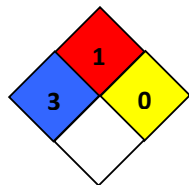
HMIS Hazard ID

Health	3
Flammability	1
Physical hazards	0
PERSONAL PROTECTION	B

B - Safety Glasses & Gloves

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; *Chronic health effect

NFPA Hazard ID



	Flammability
	Health
	Reactivity
	Special hazard.

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

Issue date: 05/29/2015
Revision date: No data available.
Version #: 1.2
Further information: No data available.

Version: 1.2
Revision date: 05/29/2015



Univar USA Inc Safety Data Sheet

For Additional Information contact SDS Coordinator during business hours, Pacific time: (425) 889-3400

Notice

Univar USA Inc. ("Univar") expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein, and shall under no circumstances be liable for incidental or consequential damages.

Do not use ingredient information and/or ingredient percentages in this SDS as a product specification. For product specification information refer to a product specification sheet and/or a certificate of analysis. These can be obtained from your local Univar sales office.

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Univar makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Univar's control and therefore users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product, or from the publication or use of, or reliance upon, information contained herein.

This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process



Univar USA Inc Material Safety Data Sheet

MSDS No:

Version No:

Order No:

Univar USA Inc., 17425 NE Union Hill Rd., Redmond WA 98052
(425) 889 3400

Emergency Assistance

For emergency assistance involving chemicals call
Chemtrec - (800) 424-9300

COMPANY IDENTITY: Univar
PRODUCT IDENTITY: SULFURIC ACID 93%
SDS NUMBER: CDS-2441

SDS DATE: 01/15/2015
ORIGINAL: 01/15/2015

SAFETY DATA SHEET

This Safety Data Sheet conforms to ANSI Z400.5, and to the format requirements of the Global Harmonizing System.
THIS SDS COMPLIES WITH 29 CFR 1910.1200 (HAZARD COMMUNICATION STANDARD)
IMPORTANT: Read this SDS before handling & disposing of this product.
Pass this information on to employees, customers, & users of this product.

SECTION 1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER

PRODUCT IDENTITY: SULFURIC ACID 93%
PRODUCT USES: Mineral Acid

COMPANY IDENTITY: Univar
COMPANY ADDRESS: 17425 NE Union Hill Road
COMPANY CITY: Redmond, WA 98052
COMPANY PHONE: 1-425-889-3400
EMERGENCY PHONES: CHEMTREC: 1-800-424-9300 (USA)
CANUTEC: 1-613-996-6666 (CANADA)

SECTION 2. HAZARDS IDENTIFICATION

DANGER!!



2.1 HAZARD STATEMENTS: (CAT = Hazard Category)

- (H200s) PHYSICAL: Corrosive To Metals:
H290 MAY BE CORROSIVE TO METALS.(CAT:1)
- (H300s) HEALTH: Skin Corrosion/Irritation:
H314 CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.(CAT:1)
- (H300s) HEALTH: Acute Toxicity, Inhalation:
H332 HARMFUL IF INHALED.(CAT:4)

2.2 PRECAUTIONARY STATEMENTS:

**EXPOSURE PREVENTION: AVOID ALL CONTACT!
PREVENT DISPERSION OF MISTS OR DUST!**

- P100s = General, P200s = Prevention,**
- P300s = Response, P400s = Storage, P500s = Disposal**
- P234 Keep only in original container.
- P260 Do not breathe dust/fume/gas/mist/vapors/spray.
- P262 Do not get in eyes, on skin, or on clothing.
- P264 Wash hands thoroughly after handling.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P301+330+331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303+361+353 IF ON SKIN (OR HAIR): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+340 IF INHALED: Remove victim to fresh air & keep at rest in a position comfortable for breathing.
- P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present & easy to do - Continue rinsing.
- P310 Immediately call a POISON CENTER or doctor/physician.
- P363 Wash contaminated clothing before reuse.
- P390 Absorb spillage to prevent material damage.
- P404 Store in a closed container.
- P405 Store locked up.
- P501 Dispose of contents/container to an approved waste disposal plant.

SEE SECTIONS 8, 11 & 12 FOR TOXICOLOGICAL INFORMATION.

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SDS NUMBER: CDS-2441

SDS DATE: 01/15/2015
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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

MATERIAL	CAS#	EINECS#	WT %
Sulfuric Acid	7664-93-9	231-639-5	93
Water	7732-18-5	231-791-2	7

TRACE COMPONENTS: Trace ingredients (if any) are present in < 1% concentration, (< 0.1% for potential carcinogens, reproductive toxins, respiratory tract mutagens, and sensitizers). None of the trace ingredients contribute significant additional hazards at the concentrations that may be present in this product. All pertinent hazard information has been provided in this document, per the requirements of the Federal Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalents, and Canadian Hazardous Materials Identification System Standard (CPR 4).

SECTION 4. FIRST AID MEASURES

- 4.1 MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE & CHRONIC:
See Section 11 for symptoms/effects, acute & chronic.
- 4.2 GENERAL ADVICE:
First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists, refer to Section 8 for specific personal protective equipment.
- 4.3 EYE CONTACT:
If this product enters the eyes, check for and remove any contact lenses. Open eyes while under gently running water. Use sufficient force to open eyelids. "Roll" eyes to expose more surface. Minimum flushing is for 15 minutes. Seek immediate medical attention.
- 4.4 SKIN CONTACT:
If the product contaminates the skin, immediately begin decontamination with running water. Minimum flushing is for 15 minutes. Remove contaminated clothing, taking care not to contaminate eyes. If skin becomes irritated and irritation persists, medical attention may be necessary. Wash contaminated clothing before reuse, discard contaminated shoes.
- 4.5 INHALATION:
After high vapor exposure, remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, trained personnel should immediately begin artificial respiration. If the heart has stopped, trained personnel should immediately begin cardiopulmonary resuscitation (CPR). Seek immediate medical attention.
- 4.6 SWALLOWING:
If swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, give two glasses of water to drink. DO NOT INDUCE VOMITING. Never induce vomiting or give liquids to someone who is unconscious, having convulsions, or unable to swallow. Seek immediate medical attention.
- 4.7 RESCUERS: Victims of chemical exposure must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take a copy of label and SDS to physician or health professional with victim.
- 4.8 NOTES TO PHYSICIAN:
There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient. Any material aspirated during vomiting may cause lung injury. Therefore, emesis should not be induced mechanically or pharmacologically. If it is considered necessary to evacuate the stomach contents, this should be done by means least likely to cause aspiration (such as: Gastric lavage after endotracheal intubation).

SECTION 5. FIRE FIGHTING MEASURES

- 5.1 FIRE & EXPLOSION PREVENTIVE MEASURES:
Isolate from alkalies, oxidizers, organics, extreme heat and open flames.
- 5.2 SUITABLE (& UNSUITABLE) EXTINGUISHING MEDIA:
Use extinguishing agent appropriate for surrounding fire.
- 5.3 SPECIAL PROTECTIVE EQUIPMENT & PRECAUTIONS FOR FIRE FIGHTERS:
Water spray may be ineffective on fire but can protect fire-fighters & cool closed containers. Use fog nozzles if water is used.
Do not enter confined fire-space without full bunker gear.
(Helmet with face shield, bunker coats, gloves & rubber boots).

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SECTION 5. FIRE FIGHTING MEASURES (CONTINUED)

5.4 SPECIFIC HAZARDS OF CHEMICAL & HAZARDOUS COMBUSTION PRODUCTS:

SLIGHTLY COMBUSTIBLE!

Reacts with most metals producing hydrogen which is extremely flammable & may explode. Keep container tightly closed. Isolate from oxidizers, alkalis, heat, & open flame. Applying to hot surfaces requires special precautions. Closed containers may explode if exposed to extreme heat. Continue all label precautions!

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 SPILL AND LEAK RESPONSE AND ENVIRONMENTAL PRECAUTIONS:

Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a spill, clear the affected area, protect people, and respond with trained personnel. ELIMINATE all ignition sources (no smoking, flares, sparks, or flames in immediate area). Prevent additional discharge of material, if possible to do so without hazard. For large spill, implement cleanup procedures and, if in public area, advise authorities.

6.2 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, EMERGENCY PROCEDURES:

The proper personal protective equipment for incidental releases (such as: 1 Liter of the product released in a well-ventilated area), use impermeable gloves, they should be Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), chemical resistant suit and boots, hard-hat, and Self-Contained Breathing Apparatus specific for the material handled, goggles, face shield, and appropriate body protection. In the event of a large release, use impermeable gloves, specific for the material handled, chemically resistant suit and boots, and hard hat. Self-Contained Breathing Apparatus or respirator may be required where engineering controls are not adequate or conditions for potential exposure exist. When respirators are required, select NIOSH/MSHA approved based on actual or potential airborne concentrations in accordance with latest OSHA and/or ANSI recommendations.

6.3 ENVIRONMENTAL PRECAUTIONS:

Stop spill at source. Construct temporary dikes of dirt, sand, or any appropriate readily available material to prevent spreading of the material. Close or cap valves and/or block or plug hole in leaking container and transfer to another container. Keep from entering storm sewers and ditches which lead to waterways, and if necessary, call the local fire or police department for immediate emergency assistance.

6.4 METHODS AND MATERIAL FOR CONTAINMENT & CLEAN-UP:

Absorb spilled liquid with polypads or other suitable absorbent materials. If necessary, neutralize using suitable buffering material, (acid with soda ash or base with phosphoric acid), and test area with litmus paper to confirm neutralization. Clean up with non-combustible absorbent (such as: sand, soil, and so on). Shovel up and place all spill residue in suitable containers. dispose of at an appropriate waste disposal facility according to current applicable laws and regulations and product characteristics at time of disposal (see Section 13 - Disposal Considerations).

SECTION 7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING:

Isolate from oxidizers, alkalis, heat, & open flame. Use only with adequate ventilation. Do not get in eyes, on skin or clothing. Wear OSHA Standard full face shield. Consult Safety Equipment Supplier. Wear goggles, face shield, gloves, apron & footwear impervious to material. Wash clothing before reuse. Continue all label precautions! NEVER pour water into this substance. When dissolving or diluting, always add it slowly to the water.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

Keep separated from strong oxidants, strong bases, combustible & reducing substances, metals, food & feedstuffs, incompatible materials. May be stored in stainless steel containers. See: Section 10, <Materials to Avoid>. Do not store above 49 C/120 F. Keep container tightly closed & upright when not in use to prevent leakage. Reacts with most metals producing hydrogen which is extremely flammable & may explode. Wear full face shield, gloves & full protective clothing when opening or handling. When empty, drain completely, replace bungs securely.

7.3 NONBULK: CONTAINERS:

Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Store containers away from incompatible chemicals (see Section 10, Stability and Reactivity). Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Empty containers should be handled with care. Never store food, feed, or drinking water in containers which held this product.

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SECTION 7. HANDLING AND STORAGE (CONTINUED)

7.4 BULK CONTAINERS:

All tanks and pipelines which contain this material must be labeled. Perform routine maintenance on tanks or pipelines which contain this product. Report all leaks immediately to the proper personnel.

7.5 TANK CAR SHIPMENTS:

Tank cars carrying this product should be loaded and unloaded in strict accordance with tank-car manufacturer's recommendation and all established on-site safety procedures. Appropriate personal protective equipment must be used (see Section 8, Engineering Controls and Personal Protective Equipment.). All loading and unloading equipment must be inspected, prior to each use. Loading and unloading operations must be attended, at all times. Tank cars must be level, brakes must be set or wheels must be locked or blocked prior to loading or unloading. Tank car (for loading) or storage tanks (for unloading) must be verified to be correct for receiving this product and be properly prepared, prior to starting the transfer operations. Hoses must be verified to be in the correct positions, before starting transfer operations. A sample (if required) must be taken and verified (if required) prior to starting transfer operations. All lines must be blown-down and purged before disconnecting them from the tank car or vessel.

7.6 PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:

Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Always use this product in areas where adequate ventilation is provided. Collect all rinsates and dispose of according to applicable Federal, State, Provincial, or local procedures.

7.7 EMPTY CONTAINER WARNING:

Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. **DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY BURST AND CAUSE INJURY OR DEATH.**

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 EXPOSURE LIMITS:

MATERIAL	CAS#	EINECS#	TWA (OSHA)	TLV (ACGIH)	IDLH (NIOSH)
Sulfuric Acid	7664-93-9	231-639-5	1.0 mg/m ³	1.0 mg/m ³	15 mg/m ³
Water	7732-18-5	231-791-2	None Known	None Known	

This product contains no EPA Hazardous Air Pollutants (HAP) in amounts > 0.1%.

8.2 APPROPRIATE ENGINEERING CONTROLS:

RESPIRATORY EXPOSURE CONTROLS

Airborne concentrations should be kept to lowest levels possible. If vapor, dust or mist is generated and the occupational exposure limit of the product, or any component of the product, is exceeded, use appropriate NIOSH or MSHA approved air purifying or air-supplied respirator authorized in 29 CFR 1910.134, European Standard EN 149, or applicable State regulations, after determining the airborne concentration of the contaminant. Air supplied respirators should always be worn when airborne concentration of the contaminant or oxygen content is unknown. Maintain airborne contaminant concentrations below exposure limits. If adequate ventilation is not available or there is potential for airborne exposure above the exposure limits, a respirator may be worn up to the respirator exposure limitations, check with respirator equipment manufacturer's recommendations/limitations. For particulates, a particulate respirator (NIOSH Type N95 or better filters) may be worn. If oil particles (such as: lubricants, cutting fluids, glycerine, and so on) are present, use a NIOSH Type R or P filter. For a higher level of protection, use positive pressure supplied air respiration protection or Self-Contained Breathing Apparatus or if oxygen levels are below 19.5% or are unknown.

EMERGENCY OR PLANNED ENTRY INTO UNKNOWN CONCENTRATIONS OR IDLH CONDITIONS

Positive pressure, full-face piece Self-Contained Breathing Apparatus; or positive pressure, full-face piece Self-Contained Breathing Apparatus with an auxilliary positive pressure Self-Contained Breathing Apparatus.

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION (CONTINUED)

VENTILATION

LOCAL EXHAUST: Necessary MECHANICAL (GENERAL): Necessary
SPECIAL: None OTHER: None
Please refer to ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

8.3 INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT:

EYE PROTECTION:

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If contact is possible, chemical splash goggles should be worn, when a higher degree of protection is necessary, use splash goggles or safety glasses. Face-shields are recommended when the operation can generate splashes, sprays or mists.

HAND PROTECTION:

Use gloves chemically resistant to this material. Preferred examples: Butyl rubber, Chlorinated Polyethylene, Polyethylene, Ethyl vinyl alcohol laminate ("EVAL"), Polyvinyl alcohol ("PVA"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"), Neoprene, Nitrile/butadiene rubber ("nitril" or "NBR"), Polyvinyl chloride ("PVC" or "vinyl"), Viton. Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

BODY PROTECTION:

Use body protection appropriate for task. Cover-all, rubber aprons, or chemical protective clothing made from impervious materials are generally acceptable, depending on the task.

WORK & HYGIENIC PRACTICES:

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using toilet facilities and at the end of the working period. Provide readily accessible eye wash stations & safety showers. Remove clothing that becomes contaminated. Destroy contaminated leather articles. Launder or discard contaminated clothing.

SECTION 9. PHYSICAL & CHEMICAL PROPERTIES

APPEARANCE:	Oily Liquid, Water-White to slightly yellow
ODOR:	None
ODOR THRESHOLD:	Not Available
pH (Neutrality):	< 1
MELTING POINT/FREEZING POINT:	-29 C / -20 F
BOILING RANGE (IBP, Dry Point):	276 to 281 C / 528 to 538 F
FLASH POINT (TEST METHOD):	Not Applicable
EVAPORATION RATE (n-Butyl Acetate=1):	Not Applicable
FLAMMABILITY CLASSIFICATION:	Noncombustible
LOWER FLAMMABLE LIMIT IN AIR (% by vol):	10.0 (Lowest Component)
UPPER FLAMMABLE LIMIT IN AIR (% by vol):	Not Available
VAPOR PRESSURE (mm of Hg)@20 C	< 0.3
VAPOR DENSITY (air=1):	3.4
GRAVITY @ 68/68F / 20/20C:	
DENSITY:	1.830
SPECIFIC GRAVITY (Water=1):	1.835
POUNDS/GALLON:	15.3
WATER SOLUBILITY:	Complete
PARTITION COEFFICIENT (n-Octane/Water):	Not Available
AUTO IGNITION TEMPERATURE:	Not Applicable
DECOMPOSITION TEMPERATURE:	Not Available
VOCs (>0.044 Lbs/Sq In) :	0.0 Vol% / 0.0 g/L / 0.000 Lbs/Gal
TOTAL VOC'S (TVOC)*:	0.0 Vol% / 0.0 g/L / 0.000 Lbs/Gal
NONEXEMPT VOC'S (CVOC)*:	0.0 Vol% / 0.0 g/L / 0.000 Lbs/Gal
HAZARDOUS AIR POLLUTANTS (HAPS):	0.0 Wt% / 0.0 g/L / 0.000 Lbs/Gal
NONEXEMPT VOC PARTIAL PRESSURE (mm of Hg @ 20 C)	0.0
VISCOSITY @ 100 C (ASTM D445) 514.0	
VISCOSITY @ 20 C (ASTM D445):	Not Available

* Using CARB (California Air Resources Board Rules).

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SECTION 10. STABILITY & REACTIVITY

10.1 REACTIVITY & CHEMICAL STABILITY:

Stable under normal conditions, but Reacts with most metals producing hydrogen which is extremely flammable & may explode.

10.2 POSSIBILITY OF HAZARDOUS REACTIONS & CONDITIONS TO AVOID:

Isolate from sources of ignition, heat, & open flame. Reacts vigorously with water.

10.3 INCOMPATIBLE MATERIALS:

The substance is a strong acid, reacts violently with bases and is corrosive. Upon heating, irritating and toxic fumes are formed including sulfur oxides. The substance is a strong oxidant & reacts violently with combustible & reducing materials. Corrosive to most common metals, forming flammable/explosive gas (hydrogen). Sulfuric acid reacts violently with water & organic materials with much heat. Hazardous gases are evolved on contact with chemicals such as cyanides, sulfides, and carbides.

10.4 HAZARDOUS DECOMPOSITION PRODUCTS:

Upon heating, irritating and toxic fumes are formed including sulfur oxides.

10.5 HAZARDOUS POLYMERIZATION:

Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 ACUTE HAZARDS

11.11 EYE & SKIN CONTACT:

Severe burns to skin, defatting, dermatitis.
Animal testing indicates this material is corrosive to the eye.
Severe burns to eyes, redness, tearing, blurred vision.
Liquid can cause severe skin & eye burns. Wash thoroughly after handling.

11.12 INHALATION:

Severe respiratory tract irritation may occur. Vapor harmful.

11.13 SWALLOWING:

Harmful or fatal if swallowed.

11.2 SUBCHRONIC HAZARDS/CONDITIONS AGGRAVATED

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Pre-existing disorders of any target organs mentioned in this Document can be aggravated by over-exposure by routes of entry to components of this product. Persons with these disorders should avoid use of this product.

11.3 CHRONIC HAZARDS

11.31 CANCER, REPRODUCTIVE & OTHER CHRONIC HAZARDS:

PROVEN Carcinogen, Human, Group 1 (IARC), SUSPECTED Carcinogen, Human, Group A2 (ACGIH).

11.32 TARGET ORGANS: May cause damage to target organs, based on animal data.

11.33 IRRITANCY: Irritating to contaminated tissue.

11.34 SENSITIZATION: No component is known as a sensitizer.

11.35 MUTAGENICITY: No known reports of mutagenic effects in humans.

11.36 EMBRYOTOXICITY: No known reports of embryotoxic effects in humans.

11.37 TERATOGENICITY: No known reports of teratogenic effects in humans.

11.38 REPRODUCTIVE TOXICITY: No known reports of reproductive effects in humans.

COMPANY IDENTITY: Univar
PRODUCT IDENTITY: SULFURIC ACID 93%
SDS NUMBER: CDS-2441

SDS DATE: 01/15/2015
ORIGINAL: 01/15/2015

SECTION 11. TOXICOLOGICAL INFORMATION (CONTINUED)

A MUTAGEN is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate across generational lines. An EMBRYOTOXIN is a chemical which causes damage to a developing embryo (such as: within the first 8 weeks of pregnancy in humans), but the damage does not propagate across generational lines. A TERATOGEN is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A REPRODUCTIVE TOXIN is any substance which interferes in any way with the reproductive process.

11.4 MAMMALIAN TOXICITY INFORMATION

LD50 (Oral, Acute): 2140 mg/kg (Rat)
LC50 / 2 hours: 510 mg/m³ (Rat), 320 mg/m³ (Mouse)

SECTION 12. ECOLOGICAL INFORMATION

12.1 ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

12.2 EFFECT OF MATERIAL ON PLANTS AND ANIMALS:

This product may be harmful or fatal to plant and animal life if released into the environment. Refer to Section 11 (Toxicological Information) for further data on the effects of this product's components on test animals.

12.3 EFFECT OF MATERIAL ON AQUATIC LIFE:

The substance is harmful to aquatic organisms.
LC50 / 48 hours: 49 mg/L, Tap Water, 20 C (Bluegill sunfish)
LC50 / 48 hours: 100 - 330 mg/L, Aerated Water (Flounder)

12.4 MOBILITY IN SOIL

Mobility of this material has not been determined.

12.5 DEGRADABILITY

This product is completely biodegradable.

12.6 ACCUMULATION

Bioaccumulation of this product has not been determined.

SECTION 13. DISPOSAL CONSIDERATIONS

Processing, use or contamination may change the waste disposal requirements. Do not dispose of on land, in surface waters, or in storm drains. Waste should be recycled or disposed of in accordance with regulations. Large amounts should be collected for reuse or consigned to licensed hazardous waste haulers for disposal.

ALL DISPOSAL MUST BE IN ACCORDANCE WITH ALL FEDERAL, STATE, PROVINCIAL, AND LOCAL REGULATIONS. IF IN DOUBT, CONTACT PROPER AGENCIES. EPA CHARACTERISTIC: D002

SECTION 14. TRANSPORT INFORMATION

MARINE POLLUTANT: No
DOT/TDG SHIP NAME: UN1830, Sulfuric acid, 8, PG-II
DRUM LABEL: (CORROSIVE)
IATA / ICAO: UN1830, Sulfuric acid, 8, PG-II
IMO / IMDG: UN1830, Sulfuric acid, 8, PG-II
EMERGENCY RESPONSE GUIDEBOOK NUMBER: 137



COMPANY IDENTITY: Univar
PRODUCT IDENTITY: SULFURIC ACID 93%
SDS NUMBER: CDS-2441

SDS DATE: 01/15/2015
ORIGINAL: 01/15/2015

SECTION 15. REGULATORY INFORMATION

15.1 EPA REGULATION:

SARA SECTION 311/312 HAZARDS: Acute Health, Chronic Health, Reactivity

All components of this product are on the TSCA list.

SARA Title III Section 313 Supplier Notification

This product contains the indicated <*> toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning & Community Right-To-Know Act of 1986 & of 40 CFR 372. This information must be included in all MSDSs that are copied and distributed for this material.

SARA TITLE III INGREDIENTS	CAS#	EINECS#	WT%	(REG.SECTION)	RQ(LBS)
*Sulfuric Acid	7664-93-9	231-639-5	93	(302,311,312,313)	1000

15.2 STATE REGULATIONS:

CALIFORNIA SAFE DRINKING WATER & TOXIC ENFORCEMENT ACT (PROPOSITION 65):

This product contains no chemicals known to the State of California to cause cancer or reproductive toxicity.

15.3 INTERNATIONAL REGULATIONS

The identified components of this product are listed on the chemical inventories of the following countries:

Australia (AICS), Canada (DSL or NDSL), China (IECSC), Europe (EINECS, ELINCS), Japan (METI/CSCL, MHLW/ISHL), South Korea (KECI), New Zealand (NZIoC), Philippines (PICCS), Switzerland (SWISS), Taiwan (NECSI), USA (TSCA).

15.4 CANADA: WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)

D2B: Irritating to skin / eyes.

E: Corrosive Material.

This product was classified using the hazard criteria of the Controlled Products Regulations (CPR). This Document contains all information required by the CPR.

SECTION 16. OTHER INFORMATION

16.1 HAZARD RATINGS:

HEALTH (NFPA): 3, HEALTH (HMIS): 3, FLAMMABILITY: 0, PHYSICAL HAZARD: 2

(Personal Protection Rating to be supplied by user based on use conditions.)

This information is intended solely for the use of individuals trained in the NFPA & HMIS hazard rating systems.

16.2 EMPLOYEE TRAINING

See Section 2 for Risk & Safety Statements. Employees should be made aware of all hazards of this material (as stated in this SDS) before handling it.

16.3 SDS DATE: 01/15/2015

Univar USA Inc Material Safety Data Sheet

For Additional Information contact MSDS Coordinator during business hours, Pacific time: (425) 889-3400

Notice

Univar USA Inc. ("Univar") expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein, and shall under no circumstances be liable for incidental or consequential damages.

Do not use ingredient information and/or ingredient percentages in this MSDS as a product specification. For product specification information refer to a product specification sheet and/or a certificate of analysis. These can be obtained from your local Univar sales office.

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Univar makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Univar's control and therefore users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product, or from the publication or use of, or reliance upon, information contained herein.

This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process



Material Safety Data Sheet

PHOSPHORIC ACID 35%

Date Prepared: 1/16/06

Supersedes Date: 8/13/04

1. PRODUCT AND COMPANY DESCRIPTION

Innophos
PO Box 8000
259 Prospect Plains Road
Cranbury NJ 08512-8000

Emergency Phone Numbers:

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CONTACT: CHEMTREC (800-424-9300 within the United States or 703-527-3887 for international collect calls) or INNOPHOS ECT (Emergency Communication Team) at 615-386-7816.

For Product Information:

(609) 495-2495

Chemical Name or Synonym:

ORTHOPHOSPHORIC ACID; WHITE PHOSPHORIC ACID

Molecular Formula:

H₃PO₄

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Reg Number	OSHA Hazard	Percentage
PHOSPHORIC ACID	7664-38-2	Y	15.0 - 75.0
WATER	7732-18-5	N	25.0 - 85.0

3. HAZARDS IDENTIFICATION

A. EMERGENCY OVERVIEW:**Physical Appearance and Odor:**

colorless slightly viscous liquid, odorless.

Warning Statements:

DANGER! CAUSES BURNS.

B. POTENTIAL HEALTH EFFECTS:

Acute Eye:

Corrosive. Causes tissue destruction, permanent damage to the cornea, blindness.

Acute Skin:

Causes irritation, burns.

Acute Inhalation:

Mists may cause lung irritation, shortness of breath, fluid in lungs.

Acute Ingestion:

Can cause nausea, vomiting, diarrhea, corrosion, burns to mouth and esophagus, abdominal pain, chest pain, shortness of breath, seizures, death.

Chronic Effects:

This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

4. FIRST AID MEASURES

FIRST AID MEASURES FOR ACCIDENTAL:**Eye Exposure:**

Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek immediate medical attention, preferably with an ophthalmologist. If the physician is not immediately available, eye irrigation should be continued for an additional 15 minutes. If it is necessary to transport the patient to a physician and the eye needs to be bandaged, use a dry sterile cloth pad and cover both eyes.

Skin Exposure:

Immediately wipe excess material off skin with a dry cloth; then wash skin with plenty of soap and water for at least 15 minutes. Seek medical attention. Remove contaminated clothing and shoes while washing. Clean contaminated clothing and shoes before re-use or discard if they cannot be thoroughly cleaned.

Inhalation:

Remove victim from immediate source of exposure and assure that the victim is breathing. If breathing is difficult, administer oxygen, if available. If victim is not breathing, administer CPR (cardio-pulmonary resuscitation). Seek immediate medical attention.

Ingestion:

If victim is conscious and alert, give 2-3 glasses of water to drink and do not induce vomiting. Seek immediate medical attention. Do not leave victim unattended. To prevent aspiration of swallowed product, lay victim on side with head lower than waist. Vomiting may occur spontaneously. If vomiting occurs and the victim is conscious, give water to further dilute the chemical.

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:

Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

NOTES TO PHYSICIAN:

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

This material is an acid. The primary toxicity of this product is due to its irritant effects on mucous membranes.

INHALATION: If cough or shortness of breath occurs, evaluate the possibility of bronchitis or pneumonitis. Chest

x-ray and arterial blood gases can be used to determine the presence of pulmonary edema. In severe cases, use of humidified oxygen and assisted ventilation including positive end expiratory pressure (PEEP) may be needed. Parenteral steroids may be useful in limiting the extent of pulmonary damage.

SKIN: Wash exposed area thoroughly with soap and water. Chemical burns from strong acids are generally treated the same as thermal burns.

EYES: Irrigate eyes for 15 minutes with sterile saline. If irritation, pain, swelling, photophobia or lacrimation persist, examination by an ophthalmologist is recommended.

INGESTION: If not already performed by first aid personnel, irrigate mouth with large amounts of water and dilute the acid by having victim drink 4 to 8 ounces of water or milk. DO NOT induce vomiting. Use of gastric lavage is controversial. The advantage of removal of acid must be weighted against the risk of perforation or bleeding. If a large amount of acid (> 1 ml/kg body weight) has been recently ingested, cautious gastric lavage is generally advised if the patient is alert and there is little risk of convulsions. Consultation with a gastroenterologist and/or surgeon is advised. Serious complications such as perforation or stricture of the esophagus may occur requiring care by specialists. Laryngeal edema may develop requiring intubation or tracheostomy.

5. FIRE FIGHTING MEASURES

FIRE HAZARD DATA:

Flash Point:
Not Applicable

Extinguishing Media:
Not combustible. Use extinguishing method suitable for surrounding fire.

Special Fire Fighting Procedures:
Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Keep unnecessary people away, isolate hazard area and deny entry. Evacuate residents who are downwind of fire. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later. Persons who may have been exposed to contaminated smoke should be immediately examined by a physician and checked for symptoms of poisoning. The symptoms should not be mistaken for heat exhaustion or smoke inhalation.

Unusual Fire and Explosion Hazards:
Not combustible.

Hazardous Decomposition Materials (Under Fire Conditions):
oxides of phosphorus

6. ACCIDENTAL RELEASE MEASURES

Evacuation Procedures and Safety:
Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Containment of Spill:
Dike or retain dilution water or water from firefighting for later disposal. Follow procedure described below under Cleanup and Disposal of Spill.

Cleanup and Disposal of Spill:

Exercise caution during neutralization as considerable heat may be generated. Carefully neutralize spill with soda ash. Clean up residual material by washing area with water.

Environmental and Regulatory Reporting:

Runoff from fire control or dilution water may cause pollution. Large spills should be handled according to a predetermined plan. For assistance in developing a plan contact the Technical Service Department using the Product Information phone number in Section 1.

7. HANDLING AND STORAGE

Minimum/Maximum Storage Temperatures:

Not Available

Handling:

Do not get on skin or in eyes. Avoid breathing vapors and mists. Do not ingest. This product reacts violently with bases liberating heat and causing spattering.

When diluting an acid, ALWAYS add the acid slowly to water and stir well to avoid spattering. NEVER ADD WATER TO ACID.

Storage:

Store in an area that is cool, dry, well-ventilated, Store in closed containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Introductory Remarks:

These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs. Waste resulting from these procedures should be handled in accordance with Section 13: Disposal Considerations.

Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

Exposure Guidelines:

Exposure limits represent regulated or recommended worker breathing zone concentrations measured by validated sampling and analytical methods, meeting the regulatory requirements. The following limits apply to this material, where, if indicated, S=skin and C=ceiling limit:

PHOSPHORIC ACID

	Notes	TWA	STEL
ACGIH		1 mg/cu m	3 mg/cu m
OSHA		1 mg/cu m	3 mg/cu m

Engineering Controls:

Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: local exhaust ventilation at the point of generation.

Respiratory Protection:

When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne

concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Under normal conditions, in the absence of other airborne contaminants, the following devices should provide protection from this material up to the conditions specified by the appropriate OSHA, WHMIS or ANSI standard(s): Air-purifying (half-mask/full-face) respirator with cartridges/canister approved for use against acid gases.

Eye/Face Protection:

Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.

Eye contact should be prevented through use of chemical safety glasses with side shields or splash proof goggles. An emergency eye wash must be readily accessible to the work area. Face contact should be prevented through use of a face shield.

Skin Protection:

Skin contact should be prevented through use of suitable protective clothing, gloves and footwear, selected with regard for use conditions and exposure potential. Consideration must be given both to durability as well as permeation resistance.

Work Practice Controls:

Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material:

- (1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- (2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- (3) Wash exposed skin promptly to remove accidental splashes or contact with this material.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product Information phone number in Section 1 for its exact specifications.

Physical Appearance:

colorless slightly viscous liquid.

Odor:

odorless.

pH:

< 1 at 1 wt/wt%.

Specific Gravity:

Not Available

Density:

1.0824 to 1.58 g/ml at 25 C (77 F).

Water Solubility:

miscible

Melting Point Range:

Not Available

Freezing Point Range:

-4 to -70 C (25 to -94 F)

Boiling Point Range:

100 to 135 C (212 to 275 F) at 760 mmHg

Vapor Pressure:

17.15 to 5.65 mmHg at 20 C (68 F)

Vapor Density:

Not Available

10. STABILITY AND REACTIVITY

Chemical Stability:

This material is stable under normal handling and storage conditions described in Section 7.

Conditions To Be Avoided:

none known

Materials/Chemicals To Be Avoided:

fluorine

strong oxidizing agents

strong reducing agents

bases

metals

sulfur trioxide

phosphorus pentoxide

The Following Hazardous Decomposition Products Might Be Expected:**Decomposition Type: thermal**

oxides of phosphorus

Hazardous Polymerization Will Not Occur.**Avoid The Following To Inhibit Hazardous Polymerization:**

not applicable

11. TOXICOLOGICAL INFORMATION

Acute Eye Irritation:**Toxicological Information and Interpretation:**

eye - eye irritation, 119 mg, rabbit. Severely irritating.

eye - eye irritation, rabbit.

Acute Skin Irritation:**Toxicological Information and Interpretation:**

skin - skin irritation, 595 mg/24 hr, rabbit. Severely irritating.

skin - skin irritation, rabbit.

Acute Dermal Toxicity:**Toxicological Information and Interpretation:**

LD50 - lethal dose 50% of test species, 2740 mg/kg, rabbit.

Acute Respiratory Irritation:

No test data found for product.

Acute Inhalation Toxicity:

No test data found for product.

Acute Oral Toxicity:**Toxicological Information and Interpretation:**

LD50 - lethal dose 50% of test species, 1530 mg/kg, rat.

Chronic Toxicity:

This product does not contain any substances that are considered by OSHA, NTP, IARC or ACGIH to be "probable" or "suspected" human carcinogens.

No additional test data found for product.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:**Ecotoxicological Information and Interpretation:**

LC50 - lethal concentration 50% of test species, 138 mg/l/96 hr, fish: Mosquitofish. Practically nontoxic.

Chemical Fate Information:

No specific biodegradation test data located. While acidity of this material is readily reduced in natural waters, the resulting phosphate may persist indefinitely or incorporate into biological systems.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material. Please contact technical service support at the phone number in section one of this MSDS to obtain suggestions for proper disposal of this product.

EPA Hazardous Waste - YES

EPA RCRA HAZARDOUS WASTE CODES:

"C" Corrosive.

14. TRANSPORTATION INFORMATION

Transportation Status: IMPORTANT! Statements below provide additional data on listed DOT classification.

The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

US Department of Transportation

Hazard Class..... 8

Shipping Name:

PHOSPHORIC ACID SOLUTION

ID Number..... UN1805

Packing Group.... III

Labels..... CORROSIVE

Emergency Guide #.... 154

15. REGULATORY INFORMATION**Inventory Status**

Inventory	Status
UNITED STATES (TSCA)	Y
CANADA (DSL)	Y
EUROPE (EINECS/ELINCS)	Y
AUSTRALIA (AICS)	Y
JAPAN (MITI)	Y
SOUTH KOREA (KECL)	Y

Y = All ingredients are on the inventory.

E = All ingredients are on the inventory or exempt from listing.

P = One or more ingredients fall under the polymer exemption or are on the no longer polymer list. All other ingredients are on the inventory or exempt from listing.

N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing.

FEDERAL REGULATIONS**Inventory Issues:**

All functional components of this product are listed on the TSCA Inventory.

SARA Title III Hazard Classes:

Fire Hazard	- NO
Reactive Hazard	- NO
Release of Pressure	- NO
Acute Health Hazard	- YES
Chronic Health Hazard	- NO

SARA Extremely Hazardous Substances (EHS)/CERCLA Hazardous Substances

Ingredient	CERCLA/SARA RQ	SARA EHS TPQ
PHOSPHORIC ACID	5000 lbs	

OTHER FEDERAL REGULATIONS:**FDA Status:**

This product meets the compositional requirements of:
21 CFR 182.1073 PHOSPHORIC ACID

STATE REGULATIONS:

This product does not contain any components that are regulated under California Proposition 65.

16. OTHER INFORMATION**National Fire Protection Association Hazard Ratings--NFPA(R):**

- 3 Health Hazard Rating--Serious
- 0 Flammability Rating--Minimal
- 0 Instability Rating--Minimal

National Paint & Coating Hazardous Materials Identification System--HMIS(R):

- 3 Health Hazard Rating--Serious
- 0 Flammability Rating--Minimal
- 0 Reactivity Rating--Minimal

Reason for Revisions:

Change and/or addition made to Section 14.

Key Legend Information:

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

TLV - Threshold Limit Value

PEL - Permissible Exposure Limit

TWA - Time Weighted Average

STEL - Short Term Exposure Limit

NTP - National Toxicology Program

IARC - International Agency for Research on Cancer

ND - Not determined

RPI - INNOPHOS Established Exposure Limits

Disclaimer:

The information herein is given in good faith but no warranty, expressed or implied, is made.

**** End of MSDS Document ****



Safety Data Sheet
Quicklime

Revision date:
May 1, 2015

1. Identification

Product Name: Quicklime

Synonyms: Lime, Steel Grade-Large, Steel Grade-Large Rescreened, Steel Grade-Small, Steel Grade-Small Rescreened, Water Grade-Small, Water Grade-Small Rescreened, Mini Pebble, Rice, PCC Grade-Large Rescreened, PCC Grade-Small Rescreened, Hi Cal Fines, Pulverized Lime, Pulverized Lime with Flowaid, Thiosorbic Lime

Recommended Uses: Water treatment, steel flux, caustic agent, pH adjustment, acid gas absorption, construction

Manufacturer: Carmeuse Lime & Stone

<u>US Office</u> 11 Stanwix Street, 21 st Floor Pittsburgh, PA 15222 Phone: (412) 995-5500 Fax: (412) 995-5594	<u>Canadian Office</u> PO Box 190 Ingersoll, ON N5C 3K5 Phone: (519) 423-6283 Fax: (519) 423-6545
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Emergency Contact: Infotrac: (800) 535-5053 (24 hrs a day, 7 days a week)

2. Hazards Identification

GHS classification	Physical Hazards	
	None	
GHS Label Elements:	Health Hazards	
	Skin Irritation	Category 2
	Eye Damage	Category 1
	Carcinogenicity	Category 1A
	Specific Target Organ Toxicity – Single Exposure	Category 3
	Specific Target Organ Toxicity – Repeated Exposure	Category 1
	Signal Word:	Danger
Hazard Statements:	Causes skin irritation. Causes serious eye damage. May cause respiratory irritation. May cause cancer through inhalation Causes damage to lungs through prolonged or repeated exposure by inhalation. Reacts violently with water, releasing heat which can ignite combustible materials.	

Precautionary Statements: Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Keep container tightly closed
 Do not breathe dust.
 Wash thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Use only outdoors or in well-ventilated area
 Wear protective gloves, clothing and eye protection
 Do not use water on material spills.

Pictograms:



3. Composition

<u>Chemical name</u>	<u>% by weight</u>	<u>CAS#</u>
Calcium oxide	> 89	1305-788
Magnesium oxide	< 4	1309-48-4
Silica-crystalline quartz	0.1 - 2	14808-60-7

4. First Aid Measures

Eyes:	Immediately flush eyes with generous amounts of water for at least 15 minutes. Pull back the eyelid to ensure that all lime dust has been washed out. Seek medical attention immediately. Do not rub eyes.
Skin:	Wash exposed area with large amounts of water. Seek medical attention immediately.
Ingestion:	Do not induce vomiting. Seek medical attention immediately. Never give anything by mouth unless instructed to do so by medical personnel.
Inhalation:	Move victim to fresh air. Seek medical attention if necessary. If breathing has stopped, give artificial respiration
Most Important Symptoms:	Irritation of skin, eyes, gastrointestinal tract or respiratory tract.
Immediate medical attention / special treatment?	See first aid information above. Note to Physicians: Provide general supportive measures and treat symptomatically.

5. Fire Fighting Measures

Suitable (and unsuitable) fire extinguishing media:	Use dry chemical fire extinguisher. Do not use water or halogenated compounds, except that large amounts of water may be used to deluge small quantities of this product.
Specific hazards arising from the product	Inhalation, skin or eye contact, can result in serious injury. This product is not combustible or flammable. However, this product reacts violently with water, and can release heat sufficient to ignite combustible materials. This product is not considered to be an explosion hazard, although reaction with water or other incompatible materials may rupture containers. When this product is wet, it can be very slippery and can result in a slip hazard. Hazardous Combustion Products: None.
Special protective equipment and precautions for fire fighters	Wear full fire-fighting turn-out gear (full Bunker gear), and respiratory protection (SCBA) to prevent inhalation, skin or eye contact.

6. Accidental Release Measures

Personal precautions, protective equipment, emergency procedures:

Avoid inhalation, eye and skin contact. Avoid generating airborne dust. Wear appropriate protective clothing as described in section 8.

Methods and materials for containment and clean up:

Utilize cleanup methods that minimize generating dust: vacuum. Avoid dry sweeping. Do not use water on large spills, as this product reacts violently with water and releases heat. Residue on surfaces may be removed with copious amount of water or vinegar.

7. Handling & Storage

Safe Handling:	Avoid inhalation, skin and eye contact. Avoid generating airborne dust. An eye wash station should be readily available when this product is handled.
Safe Storage:	Keep in tightly closed containers. Protect containers from physical damage. Store in a cool, dry, and well-ventilated location. Do not store near incompatible materials (see Section 10 below). Keep away from moisture. Long-term storage in aluminum containers is not recommended, as calcium oxide may corrode aluminum over long periods of time

8. Exposure Controls/Personal Protection

Occupational Exposure Limits

	OSHA PEL (mg/m ³)	ACGIH TLV (mg/m ³)	Ont. Reg. 833 TWAEV (mg/m ³)
Calcium oxide	5	2	2
Magnesium oxide	15	10	10
silica - crystalline quartz	30 / (% silica +2) (total) 10 / (% silica +2) (respirable)	0.025 (respirable)	0.1

Engineering Controls: Use with adequate general or local exhaust ventilation and to maintain exposure below occupational exposure limits.

Individual Protection Measures (Personal Protective Equipment):

Specific Eye / Face Protection: Safety glasses with side shields. In windy conditions, or if work activity generates elevated airborne dust levels, dust proof or chemical goggles are recommended. Contact lenses should not be worn.

Specific Skin Protection: When there is a risk of skin contact, wear appropriate clothing and gloves to prevent contact.

Specific Respiratory Protection: If exposure limits are exceeded, an approved particulate respirator, or supplied air respirator, appropriate for the airborne concentrations, should be used. Selection and use of the respiratory protective equipment must be in accordance with applicable regulations and good industrial hygiene practices.

Other: An emergency eye wash fountain and shower are recommended.

9. Physical & Chemical Properties

Appearance:	White or grayish white material
Odor:	Odorless
Odor threshold:	Not Applicable
pH at 25 degrees C:	12.45
Melting Point:	4658 °F (2570 °C)
Boiling Point and range:	5162 °F (2850 °C)
Flash Point:	Not Applicable
Evaporation Rate:	Not Applicable
Flammability:	Not Applicable
Upper/lower flammability or explosive limits	Not Applicable
Vapor pressure/density:	Non Volatile

Relative density:	3.2 – 3.4
Solubility:	Negligible in water but reacts with water to produce Ca(OH)_2 and heat. Soluble in acids, glycerin, and sugar solutions
Partition coefficient: n-octanol/water	Not applicable
Auto-ignition temperature:	Not Available
Decomposition temperature:	Not available
Viscosity:	Not Applicable

10. Stability & Reactivity

Reactivity:	Reacts violently with water to form calcium hydroxide, releasing heat. Reacts with acids to form calcium salts, releasing heat. Reacts with carbon dioxide in air to form calcium carbonate. See also Incompatibility below.
Chemical stability:	Stable under normal storage and handling conditions.
Possibility of Hazardous Reactions:	See “reactivity” above.
Conditions to avoid:	Vicinity of incompatible materials.
Incompatibility:	This product should not be mixed or stored with the following materials, due to the potential for violent reaction and release of heat: <ul style="list-style-type: none">• water (unless in a controlled process)• acids• reactive fluoridated compounds• reactive brominated compounds• reactive powdered metals• reactive phosphorous compounds• aluminum powder• organic acid anhydrides• nitro-organic compounds• interhalogenated compounds
Hazardous decomposition products:	None

11. Toxicological Information

Likely routes of exposure & symptoms:

Eyes: Contact can cause severe irritation or burning of eyes, including permanent damage.

Skin: Contact can cause severe irritation or burning of skin, especially in the presence of moisture.

Ingestion: This product can cause severe irritation or burning of gastrointestinal tract if swallowed.

Inhalation: This product can cause severe irritation of the respiratory system.

Chronic health effects: This product contains trace amounts of crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica can cause silicosis, as serious lung disease.

Respiratory or skin sensitization: This material is not known to cause sensitization

Germ cell mutagenicity: No data available.

Carcinogenicity: This product is not listed as carcinogenic by OSHA, IARC, NTP, ACGIH, or the EU Directives. This product may contain trace amounts of crystalline silica quartz which is listed by IARC as "Carcinogenic to Humans" (Group 1) and "Known to be a Human Carcinogen" by NTP (National Toxicology Program).

Reproductive toxicity: No Data Available.

Numerical Measures of Toxicity Crystalline Silica: Oral (rat) LD₅₀ > 22,500 mg/kg
Calcium oxide: Oral (rat) LD₅₀: 3059 mg/kg

12. Ecological Information

Because of the elevated pH of this product, it might be expected to produce some ecotoxicity upon exposure to certain aquatic organisms and aquatic systems in high concentrations
This material shows no bioaccumulation effect or food chain concentration toxicity.

13. Disposal Considerations

Dispose of contents in accordance with federal, state, provincial and local regulations.

14. Transport Information

UN Number UN1910

UN Proper shipping name Calcium Oxide

Transport Hazard class(es) When transported by air only: Hazard Class 8-Corrosive

Packing group When transported by air only: Packing Group III

Environmental hazards This material is alkaline and if released into water or moist soil will cause an increase in pH

Transport in bulk (according to Annex II of MARPOL 73/79 and the IBC

Code:

**Special precautions
 which a user needs to
 be aware of**

When being transported by air, quicklime is classified in the Department of Transportation (DOT) regulations as a hazardous material. (49 CFR 172.101). For aircraft transport only, Calcium Oxide is classified as Hazard Class 8-Corrosive, UN1910, Packing Group III. For passenger aircraft, the maximum net quantity allowed per container is 25 kg. For cargo aircraft, the maximum net quantity allowed per container is 100 kg. For quantities greater than 25 kg up to and including 100 kg, the container shall be labeled with CARGO AIRCRAFT ONLY. Because express carriers (i.e., Federal Express, Airborne Express, and United Parcel Service) ship by air, quicklime presented to these carriers for shipment must be packaged, marked, and labeled in accordance with IATA requirements, and must be accompanied by the appropriate shipping documentation. Only personnel trained and certified under applicable DOT Hazardous Materials Regulations (contained in Title 49 of the Code of Federal Regulations) may prepare any quicklime product for air transport. Quicklime is not classified as a hazardous material by DOT when transported by means other than by air.

15. Regulatory Information

CERCLA Hazardous Substances	Not listed
SARA Toxic Chemical (40 CFR 372.65)	Not listed
SARA Section 302 Extremely Hazardous Substances (40 CFR 355)	Not listed
SARA 311/312	Not listed
SARA Section 313 Toxic Chemicals reporting requirements	None
Threshold planning quantity (TPQ)	Not listed
RCRA Hazardous Waste Classification (40 CFR 261)	Not Classified
EPA Toxic Substances Control Act (TSCA) Status	All of the components of this product are listed on the TSCA
California Proposition 65	Airborne crystalline silica particulates of respirable size are known to the State of California to cause cancer.
NFPA ratings	Health: 3 Fire: 0 Reactivity: 2 W
HMIS Ratings	Health: 3 Fire: 0 Reactivity: 2 Personal protection: E
OSHA Specifically regulated substance (29 CFR 1910)	Not listed
OSHA Air contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A)	Listed
MSHA	Not listed
Canada DSL	Listed
Canadian WHMIS Classification	D2A, Materials Causing other toxic effects. E, Corrosive Material





Canada CPR This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation of a Canada and this SDS contains all the required information.

Ontario Regulations Refer to Regulation 845: Designated Substances - Silica

16. Other Information

List of GHS H315: Causes skin irritation
Hazard H318: Causes serious eye damage
Statements: H335: May cause respiratory irritation.
H350: May cause cancer through inhalation
H372: Causes damage to lungs through prolonged or repeated exposure by inhalation.

List of GHS P201: Obtain special instructions before use.
Precautionary P202: Do not handle until all safety precautions have been read and understood.
Statements: P233: Keep container tightly closed
P260: Do not breathe dust.
P264: Wash thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in well-ventilated area
P280: Wear protective gloves, clothing and eye protection

Abbreviations

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act	IARC	International Agency for Research on Cancer
NTP	National Toxicology Program		

The information contained herein is believed to be accurate and reliable as of the date hereof. However, Carmeuse makes no representation, warranty or guarantee as to results or as to the information's accuracy, reliability or completeness. Carmeuse has no liability for any loss or damage that may result from use of the information. Each user is responsible to review this information, satisfy itself as to the information's suitability and completeness, and circulate the information to its employees, customers and other appropriate third parties.

**SAFETY DATA SHEET**

PRODUCT

CAT-FLOC 8103 PLUS

18110-00

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATIONPRODUCT NAME : **CAT-FLOC 8103 PLUS**

APPLICATION : WATER TREATMENT

COMPANY IDENTIFICATION :
Nalco Company
1601 W. Diehl Road
Naperville, Illinois
60563-1198

5/3/12

EMERGENCY TELEPHONE NUMBER(S) : (800) 424-9300 (24 Hours) CHEMTREC

NFPA 704M/HMIS RATING

HEALTH : 0/1 FLAMMABILITY : 1/1 INSTABILITY : 0/0 OTHER :
0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme * = Chronic Health Hazard**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Our hazard evaluation has found that this product is not hazardous under 29 CFR 1910.1200.

3. HAZARDS IDENTIFICATION****EMERGENCY OVERVIEW******CAUTION**

May cause irritation with prolonged contact.

Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water.

Wear suitable protective clothing.

May evolve oxides of carbon (COx) under fire conditions. May evolve oxides of nitrogen (NOx) under fire conditions.

May evolve ammonia under fire conditions. May evolve HCl under fire conditions.

PRIMARY ROUTES OF EXPOSURE :

Eye, Skin

HUMAN HEALTH HAZARDS - ACUTE :

EYE CONTACT :

May cause irritation with prolonged contact.

SKIN CONTACT :

May cause irritation with prolonged contact.

INGESTION :

Not a likely route of exposure. No adverse effects expected.

Nalco Company 1601 W. Diehl Road • Naperville, Illinois 60563-1198 • (630)305-1000

For additional copies of an MSDS visit www.nalco.com and request access.



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INHALATION :

Not a likely route of exposure. No adverse effects expected.

SYMPTOMS OF EXPOSURE :

Acute :

A review of available data does not identify any symptoms from exposure not previously mentioned.

Chronic :

A review of available data does not identify any symptoms from exposure not previously mentioned.

AGGRAVATION OF EXISTING CONDITIONS :

A review of available data does not identify any worsening of existing conditions.

4. FIRST AID MEASURES

EYE CONTACT :

Flush affected area with water. If symptoms develop, seek medical advice.

SKIN CONTACT :

Remove contaminated clothing. Wash off affected area immediately with plenty of water. If symptoms develop, seek medical advice.

INGESTION :

Do not induce vomiting without medical advice. If conscious, washout mouth and give water to drink. If symptoms develop, seek medical advice.

INHALATION :

Remove to fresh air, treat symptomatically. If symptoms develop, seek medical advice.

NOTE TO PHYSICIAN :

Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

5. FIRE FIGHTING MEASURES

FLASH POINT : Not flammable

EXTINGUISHING MEDIA :

This product would not be expected to burn unless all the water is boiled away. The remaining organics may be ignitable. Use extinguishing media appropriate for surrounding fire. Water mist may be used to cool closed containers.

FIRE AND EXPLOSION HAZARD :

May evolve oxides of carbon (CO_x) under fire conditions. May evolve oxides of nitrogen (NO_x) under fire conditions. May evolve ammonia under fire conditions. May evolve HCl under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING :

In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.



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6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS :

Notify appropriate government, occupational health and safety and environmental authorities. Do not touch spilled material. Stop or reduce any leaks if it is safe to do so. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection).

METHODS FOR CLEANING UP :

SMALL SPILLS: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area. **LARGE SPILLS:** Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS :

This product is toxic to fish. It should not be directly discharged into lakes, ponds, streams, waterways or public water supplies.

7. HANDLING AND STORAGE

HANDLING :

Do not take internally. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Ensure all containers are labeled. Avoid eye and skin contact.

STORAGE CONDITIONS :

Store separately from oxidizers. Store the containers tightly closed. Protect product from freezing.

SUITABLE CONSTRUCTION MATERIAL :

HDPE (high density polyethylene), Neoprene, Brass, Buna-N, Polyurethane, PVC, Polypropylene, Polyethylene, Stainless Steel 304, EPDM, Epoxy phenolic resin, 100% phenolic resin liner, Chlorosulfonated polyethylene rubber, Fluoroelastomer

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS :

This product does not contain any substance that has an established exposure limit.

ENGINEERING MEASURES :

General ventilation is recommended.

RESPIRATORY PROTECTION :

Respiratory protection is not normally needed.



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HAND PROTECTION :

When handling this product, the use of chemical gloves is recommended. The choice of work glove depends on work conditions and what chemicals are handled. Please contact the PPE manufacturer for advice on what type of glove material may be suitable. Gloves should be replaced immediately if signs of degradation are observed.

SKIN PROTECTION :

Wear standard protective clothing.

EYE PROTECTION :

Wear chemical splash goggles.

HYGIENE RECOMMENDATIONS :

Keep an eye wash fountain available. Keep a safety shower available.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Viscous liquid
APPEARANCE	Clear Yellow
ODOR	None
SPECIFIC GRAVITY	1.018 - 1.058 @ 77 °F / 25 °C
DENSITY	8.5 - 8.81 lb/gal
SOLUBILITY IN WATER	Complete
pH (100 %)	5.0 - 8.0
VISCOSITY	< 1,050 cps @ 77 °F / 25 °C
FREEZING POINT	14 °F / -9.9 °C
BOILING POINT	> 212 °F / > 100 °C
VAPOR PRESSURE	Same as water
VAPOR DENSITY	Same as water
VOC CONTENT	0.00 % EPA Method 24

Note: These physical properties are typical values for this product and are subject to change.

10. STABILITY AND REACTIVITY

STABILITY :

Stable under normal conditions.

HAZARDOUS POLYMERIZATION :

Hazardous polymerization will not occur.

CONDITIONS TO AVOID :

Avoid extremes of temperature.



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MATERIALS TO AVOID :

Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.

HAZARDOUS DECOMPOSITION PRODUCTS :

Under fire conditions: Oxides of carbon, Oxides of nitrogen, May evolve ammonia under fire conditions., HCl

11. TOXICOLOGICAL INFORMATION

The following results are for the polymer.

ACUTE ORAL TOXICITY :

Species: Rat
LD50: 25,500 mg/kg
Test Descriptor: Similar Product

ACUTE DERMAL TOXICITY :

Species: Rabbit
LD50: > 20,000 mg/kg
Test Descriptor: 40% Active Ingredient

PRIMARY SKIN IRRITATION :

Species: Rabbit
Draize Score: 1.0 / 8.0
Test Descriptor: Similar Product

PRIMARY EYE IRRITATION :

Species: Rabbit
Draize Score: 8.0 / 110.0
Test Descriptor: Similar Product

SENSITIZATION :

This product is not expected to be a sensitizer.

CARCINOGENICITY :

None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).

HUMAN HAZARD CHARACTERIZATION :

Based on our hazard characterization, the potential human hazard is: Low

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12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL EFFECTS :

The tests for (products or similar products) were performed in clean water as set forth by USEPA (EPA/600/4-90/027). In order to evaluate the potential toxicity mitigation, the tests for (representative polymers) were performed in environmentally relevant water with dissolved organic carbon (DOC: 4.5 mg/l). The toxicity of this product is due to an external mode of action, e.g., suffocation or immobilization. In the presence of suspended material, e.g., DOC, the polymers are bound to suspended material and the bioavailability is substantially reduced. As a result, the toxicity is expected to be lower. Under normal use and discharge conditions, the LC50 values of the representative polymers tested in the presence of DOC are expected to apply to this product. However, for large spills, the clean water data is more applicable.

Acute Fish Results :

Species	Exposure	Test Type	Value	Test Descriptor
Rainbow Trout	96 hrs	LC50	0.85 mg/l	Similar product tested in clean water
Inland Silverside	96 hrs	LC50	> 5,000 mg/l	Product tested in synthetic sea water
Zebra Danio	96 hrs	LC50	10 - 100 mg/l	Representative polymer tested in water with DOC
Fathead Minnow	96 hrs	LC50	3.29 mg/l	Product tested in clean water

ACUTE INVERTEBRATE RESULTS :

Species	Exposure	Test Type	Value	Test Descriptor
Daphnia magna	48 hrs	LC50	2.06 mg/l	Similar product tested in clean water
Ceriodaphnia dubia	48 hrs	LC50	2.5 mg/l	Product tested in clean water
Daphnia magna	48 hrs	LC50	10 - 100 mg/l	Representative polymer tested in water with DOC

Chronic Invertebrate Results :

Species	Exposure	Test Type	Value	End Point	Test Descriptor
Ceriodaphnia dubia	7 Days	LOEC	2.5 mg/l	Reproduction	Product
Ceriodaphnia dubia	7 Days	EC50	1.33 mg/l	Reproduction	Product
Ceriodaphnia dubia	7 Days	EC25 / IC25	0.96 mg/l	Reproduction	Product
Ceriodaphnia dubia	7 Days	NOEC	1.25 mg/l	Reproduction	Product

ADDITIONAL ECOLOGICAL DATA

NOEC on earthworm: > 1000 mg/l (representative polymer) AOX information: Product contains no organic halogens.

MOBILITY :

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.



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If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	Water	Soil/Sediment
<5%	30 - 50%	50 - 70%

The portion in water is expected to be soluble or dispersible.

BIOACCUMULATION POTENTIAL

This preparation or material is not expected to bioaccumulate.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION

Based on our hazard characterization, the potential environmental hazard is: High

OTHER INFORMATION

The hazard characterization is based on the tests or potential hazard in the clean water.

If released into the environment, see CERCLA/SUPERFUND in Section 15.

13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it is not a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

As a non-hazardous waste, it is not subject to federal regulation. Consult state or local regulation for any additional handling, treatment or disposal requirements. For disposal, contact a properly licensed waste treatment, storage, disposal or recycling facility.

14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are as follows.

LAND TRANSPORT :

Proper Shipping Name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

AIR TRANSPORT (ICAO/IATA) :

Proper Shipping Name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

MARINE TRANSPORT (IMDG/IMO) :

Proper Shipping Name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION



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15. REGULATORY INFORMATION

This section contains additional information that may have relevance to regulatory compliance. The information in this section is for reference only. It is not exhaustive, and should not be relied upon to take the place of an individualized compliance or hazard assessment. Nalco accepts no liability for the use of this information.

NATIONAL REGULATIONS, USA :

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200 :

Our hazard evaluation has found that this product is not hazardous under 29 CFR 1910.1200.

CERCLA/SUPERFUND, 40 CFR 302 :

Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (TITLE III) - SECTIONS 302, 311, 312, AND 313 :

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355) :

This product does not contain substances listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 AND 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370) :

Our hazard evaluation has found that this product is not hazardous under 29 CFR 1910.1200.

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372) :

This product does not contain substances on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA) :

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

FOOD AND DRUG ADMINISTRATION (FDA) Federal Food, Drug and Cosmetic Act :

When use situations necessitate compliance with FDA regulations, this product is acceptable under : 21 CFR 176.170 Components of paper and paperboard in contact with aqueous and fatty foods and 21 CFR 176.180 Components of paper and paperboard in contact with dry foods.

1) As a flocculant employed prior to the sheet-forming operation in the manufacture of paper and paperboard and used at a level not to exceed 10 mg/L (10 ppm) of influent water. 2) As a pigment dispersant and/or retention aid prior to the sheet-forming operation at an active polymer level not to exceed 0.5% of finished paper and paperboard with the level of residual monomer not to exceed 1 weight percent of the polymer (dry basis). 3) As a pigment dispersant in coatings at an active polymer level not to exceed 0.18% of finished paper and paperboard.

This product has been certified as KOSHER/PAREVE for year-round use INCLUDING THE PASSOVER SEASON by the CHICAGO RABBINICAL COUNCIL.



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NSF INTERNATIONAL :

This product has received NSF/International certification under NSF/ANSI Standard 60 in the coagulation and flocculation category. The official name is "Poly (Diallyldimethylammonium Chloride) (pDADMAC)." Maximum product application dosage is : 57 mg/l.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 / formerly Sec. 307, 40 CFR 116.4 / formerly Sec. 311 :

Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

CLEAN AIR ACT, Sec. 112 (Hazardous Air Pollutants, as amended by 40 CFR 63), Sec. 602 (40 CFR 82, Class I and II Ozone Depleting Substances) :

Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

CALIFORNIA PROPOSITION 65 :

Substances listed under California Proposition 65 are not intentionally added or expected to be present in this product.

MICHIGAN CRITICAL MATERIALS :

Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

STATE RIGHT TO KNOW LAWS :

Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

INTERNATIONAL CHEMICAL CONTROL LAWS :

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) :

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

AUSTRALIA

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

CHINA

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

EUROPE

The substance(s) in this preparation are included in or exempted from the EINECS or ELINCS inventories



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JAPAN

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

KOREA

All substances in this product comply with the Toxic Chemical Control Law (TCCL) and are listed on the Existing Chemicals List (ECL)

NEW ZEALAND

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

PHILIPPINES

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

16. OTHER INFORMATION

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

REFERENCES

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, OH., (Ariel Insight™ CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Title 29 Code of Federal Regulations, Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA), (Ariel Insight™ CD-ROM Version), Ariel Research Corp., Bethesda, MD.



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Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, OH, (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

Ariel Insight™ (An integrated guide to industrial chemicals covered under major regulatory and advisory programs), North American Module, Western European Module, Chemical Inventories Module and the Generics Module (Ariel Insight™ CD-ROM Version), Ariel Research Corp., Bethesda, MD.

The Teratogen Information System, University of Washington, Seattle, WA (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

Prepared By : Product Safety Department

Date issued : 05/03/2012

Version Number : 4.11

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : NALCO® EC3461A

Other means of identification : Not applicable.

Recommended use : PROCESS ANTIFOULANT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630) 305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 02/03/2020

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) : Category 4
Acute toxicity (Dermal) : Category 4
Skin corrosion : Category 1B
Serious eye damage : Category 1
Respiratory sensitization : Category 1
Skin sensitization : Category 1

GHS Label element

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : Harmful if swallowed or in contact with skin
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary Statements : **Prevention:**
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wear protective gloves/ protective clothing/ eye protection/ face protection. In case of inadequate ventilation wear respiratory protection.
Response:
IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove

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NALCO® EC3461A

person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/ physician.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Ethylenediamine	107-15-3	30 - 60

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

If swallowed : Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention.

Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.

Notes to physician : Treat symptomatically.

Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : None known.

Specific hazards during firefighting : Not flammable or combustible.

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Special protective equipment for firefighters : Use personal protective equipment.

Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Do not allow contact with soil, surface or ground water.

Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Flush away traces with water.

Section: 7. HANDLING AND STORAGE

Advice on safe handling : Do not ingest. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.

Conditions for safe storage : Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.

Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Mild steel, Stainless Steel 304, Stainless Steel 316L, Copper, Hastelloy C-276, HDPE (high density polyethylene), Polyethylene, Polypropylene, EPDM, PVC, Plexiglass, PTFE, Perfluoroelastomer

Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Natural rubber, Neoprene, Buna-N, Polyurethane, Aluminum, Brass, Ethylene propylene, Polytetrafluoroethylene/polypropylene copolymer, Chlorosulfonated polyethylene rubber, Fluoroelastomer

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Ethylenediamine	107-15-3	TWA	10 ppm	ACGIH
		TWA	10 ppm 25 mg/m ³	NIOSH REL
		TWA	10 ppm	OSHA Z1

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25 mg/m³

Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety goggles
Face-shield

Hand protection : Wear protective gloves.
butyl-rubber
Neoprene gloves
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

Respiratory protection : Use local exhaust ventilation or other engineering controls as necessary to control airborne mist and vapor.
Where concentrations in air may exceed the limits given in this section or when significant mists, vapors, aerosols are generated, an approved air purifying respirator equipped with suitable filter cartridges is recommended.
Combined particulates and ammonia/amines type
If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid
Colour : colourless
Odour : amine-like
Flash point : > 100 °C, Method: Tag closed cup, boils before flash
pH : 10.5, Concentration: 100.00 g/l
Odour Threshold : no data available
Melting point/freezing point : no data available
Initial boiling point and boiling range : no data available
Evaporation rate : no data available
Flammability (solid, gas) : Not applicable.

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Upper explosion limit	:	no data available
Lower explosion limit	:	no data available
Vapour pressure	:	similar to water
Relative vapour density	:	no data available
Relative density	:	0.98,
Density	:	no data available
Water solubility	:	completely soluble
Solubility in other solvents	:	no data available
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	no data available
Thermal decomposition	:	no data available
Viscosity, dynamic	:	no data available
Viscosity, kinematic	:	no data available
Molecular weight	:	no data available
VOC	:	no data available

Section: 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	Extremes of temperature None known.
Incompatible materials	:	Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors. Contact with strong acids (e.g. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) may generate heat, splattering or boiling and toxic vapors. Avoid contact with SO ₂ or acidic bisulfite products, which may react to form visible airborne amine salt particles.

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes : Causes serious eye damage.

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- Skin : Harmful in contact with skin. Causes severe skin burns. May cause allergic skin reaction.
- Ingestion : Harmful if swallowed. Causes digestive tract burns.
- Inhalation : May cause allergic respiratory reaction. May cause nose, throat, and lung irritation.
- Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

- Eye contact : Redness, Pain, Corrosion
- Skin contact : Redness, Pain, Irritation, Corrosion, Allergic reactions
- Ingestion : Corrosion, Abdominal pain
- Inhalation : Respiratory irritation, Cough, May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Toxicity

Product

- Acute oral toxicity : Acute toxicity estimate: 1,732 mg/kg
- Acute inhalation toxicity : Acute toxicity estimate: 29.4 mg/l
Exposure time: 4 h
Test atmosphere: vapour
- Acute dermal toxicity : Acute toxicity estimate: 1,120 mg/kg
- Skin corrosion/irritation : no data available
- Serious eye damage/eye irritation : no data available
- Respiratory or skin sensitization : no data available
- Carcinogenicity : no data available
- Reproductive effects : no data available
- Germ cell mutagenicity : no data available
- Teratogenicity : no data available
- STOT - single exposure : no data available
- STOT - repeated exposure : no data available
- Aspiration toxicity : no data available

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

- Environmental Effects : Harmful to aquatic life with long lasting effects.

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Components

Toxicity to fish : Ethylenediamine
LC50 *Poecilia reticulata* (guppy): 640 mg/l
Exposure time: 96 h

Components

Toxicity to daphnia and other : Ethylenediamine
aquatic invertebrates : EC50 *Daphnia magna* (Water flea): 16.7 mg/l
Exposure time: 48 h

Components

Toxicity to algae : Ethylenediamine
EC50 *Pseudokirchneriella subcapitata* (microalgae): 358 mg/l
Exposure time: 72 h
NOEC *Selenastrum capricornutum* (green algae): 3.2 mg/l
Exposure time: 72 h

Components

Toxicity to bacteria : Ethylenediamine
3.2 mg/l

Components

Toxicity to fish (Chronic : Ethylenediamine
toxicity) : NOEC: > 10 mg/l
Exposure time: 28 d
Species: *Gasterosteus aculeatus* (threespine stickleback)

Components

Toxicity to daphnia and other : Ethylenediamine
aquatic invertebrates : NOEC: 0.16 mg/l
(Chronic toxicity) : Exposure time: 21 d
Species: *Daphnia magna* (Water flea)

Persistence and degradability

no data available

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air : <5%
Water : 30 - 50%
Soil : 50 - 70%

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Bioaccumulative potential

no data available

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

Hazardous Waste: : D002

Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

The presence of an RQ component (Reportable Quantity for U.S. DOT) in this product causes it to be regulated with an additional description of RQ for road, or as Environmentally hazardous for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

Land transport (DOT)

Proper shipping name : AMINES, LIQUID, CORROSIVE, N.O.S.
Technical name(s) : ETHYLENEDIAMINE
UN/ID No. : UN 2735
Transport hazard class(es) : 8
Packing group : II
Reportable Quantity (per package) : 10,000 lbs
RQ Component : ETHYLENEDIAMINE

Air transport (IATA)

Proper shipping name : AMINES, LIQUID, CORROSIVE, N.O.S.
Technical name(s) : ETHYLENEDIAMINE
UN/ID No. : UN 2735
Transport hazard class(es) : 8
Packing group : II
Reportable Quantity (per package) : 10,000 lbs
RQ Component : ETHYLENEDIAMINE

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Sea transport (IMDG/IMO)

Proper shipping name : AMINES, LIQUID, CORROSIVE, N.O.S.
Technical name(s) : ETHYLENEDIAMINE
UN/ID No. : UN 2735
Transport hazard class(es) : 8
Packing group : II

Section: 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Ethylenediamine	107-15-3	5000	10000

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Ethylenediamine	107-15-3	5000	10000

SARA 311/312 Hazards : Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitisation

SARA 302 : The following components are subject to reporting levels established by SARA Title III, Section 302:

Ethylenediamine 107-15-3

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

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Australia. Industrial Chemical (Notification and Assessment) Act

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

Canadian Domestic Substances List (DSL)

The substances in this preparation are listed on the Domestic Substances List (DSL), are exempt, or have been reported in accordance with the New Substances Notification Regulations.

Japan. ENCS - Existing and New Chemical Substances Inventory

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

Korea. Korean Existing Chemicals Inventory (KECI)

All substances in this product comply with the Chemical Control Act (CCA) and are listed on the Existing Chemicals List (ECL)

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

not determined

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

China Inventory of Existing Chemical Substances

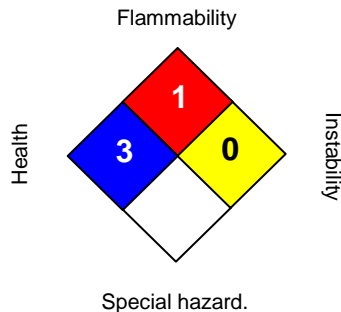
All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

Taiwan Chemical Substance Inventory

All substances in this product comply with the Taiwan Existing Chemical Substances Inventory (ECSI).

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	3*
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 02/03/2020
Version Number : 1.2
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.nalco.com and request access.

COMPTRENE™ EC3144B

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : COMPTRENE™ EC3144B

Other means of identification : Not applicable.

Recommended use : PROCESS ANTIFOULANT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630) 305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 11/18/2022

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3

Skin irritation : Category 2

Eye irritation : Category 2A

Skin sensitization : Category 1

Carcinogenicity : Category 2

Specific target organ toxicity - repeated exposure : Category 2 (hearing organs)

Specific target organ toxicity - repeated exposure (Oral) : Category 2 (Blood)

Aspiration hazard : Category 1

GHS Label element

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
Suspected of causing cancer.
May cause damage to organs (hearing organs) through prolonged or repeated exposure.
May cause damage to organs (Blood) through prolonged or repeated exposure

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if swallowed.

Precautionary Statements : **Prevention:**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not breathe dust/fume/gas/mist/vapours/spray. Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/ physician. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Storage:
Store in a well-ventilated place.
Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Heavy Aromatic Naphtha	64742-94-5	10 - 30
Diethylene Glycol Monobutyl Ether	112-34-5	5 - 10
Xylene	1330-20-7	5 - 10
Fatty acid-amine condensate	Proprietary	5 - 10
Naphthalene	91-20-3	1 - 5
Ethylbenzene	100-41-4	1 - 5
1,2,4-Trimethylbenzene	95-63-6	1 - 5
Substituted alkylamine	Proprietary	1 - 5

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

If swallowed : Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Aspiration hazard if swallowed - can enter lungs and cause damage. Get medical attention immediately.

If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.

Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.

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- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Foam
Carbon dioxide
Dry powder
Other extinguishing agent suitable for Class B fires
For large fires, use water spray or fog, thoroughly drenching the burning material.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.
Flash back possible over considerable distance.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
- Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides
nitrogen oxides (NOx)
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Use water spray to cool unopened containers. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Remove all sources of ignition. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Do not flush into surface water or sanitary sewer system.

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Avoid contact with skin and eyes. Take necessary action to avoid static

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electricity discharge (which might cause ignition of organic vapours). Keep away from fire, sparks and heated surfaces. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.

Conditions for safe storage : Keep away from heat and sources of ignition. Keep in a cool, well-ventilated place. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.

Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

Unsuitable material : not determined

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Heavy Aromatic Naphtha	64742-94-5	TWA	500 ppm 2,000 mg/m ³	OSHA Z-1
		TWA	200 mg/m ³ (total hydrocarbon vapor)	ACGIH
Diethylene Glycol Monobutyl Ether	112-34-5	TWA (Inhalable fraction and vapor)	10 ppm	ACGIH
Xylene	1330-20-7	TWA	100 ppm 435 mg/m ³	OSHA Z-1
		TWA	100 ppm	ACGIH
		STEL	150 ppm	ACGIH
		PEL	100 ppm 435 mg/m ³	
		C	300 ppm	
		STEL	150 ppm 655 mg/m ³	
		TWA	100 ppm 435 mg/m ³	OSHA P0
Naphthalene	91-20-3	STEL	150 ppm 655 mg/m ³	OSHA P0
		TWA	10 ppm	ACGIH
		TWA	10 ppm 50 mg/m ³	NIOSH REL
		ST	15 ppm 75 mg/m ³	NIOSH REL
		TWA	10 ppm 50 mg/m ³	OSHA Z-1
		STEL	15 ppm 75 mg/m ³	OSHA P0
		TWA	10 ppm 50 mg/m ³	OSHA P0
		PEL	0.1 ppm	

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			0.5 mg/m ³	
Ethylbenzene	100-41-4	TWA	20 ppm	ACGIH
		TWA	100 ppm 435 mg/m ³	NIOSH REL
		ST	125 ppm 545 mg/m ³	NIOSH REL
		TWA	100 ppm 435 mg/m ³	OSHA Z-1
		TWA	100 ppm 435 mg/m ³	OSHA P0
		STEL	125 ppm 545 mg/m ³	OSHA P0
		STEL	30 ppm 130 mg/m ³	
		PEL	5 ppm 22 mg/m ³	
1,2,4-Trimethylbenzene	95-63-6	TWA	25 ppm 125 mg/m ³	NIOSH REL
		TWA	25 ppm	ACGIH
		TWA	25 ppm 125 mg/m ³	OSHA P0
		PEL	25 ppm 125 mg/m ³	

Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Wear chemical splash goggles.

Safety goggles
Face-shield

Hand protection : Wear impervious chemical-resistant gloves when handling this product. The following glove types are recommended based on our review of glove manufacturer information and/or other available sources.
Nitrile rubber
Viton
Other glove types may be used for short term, incidental contact if determined by testing to provide adequate worker protection.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Wear suitable protective clothing.

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based

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on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Liquid
Colour	: dark amber
Odour	: hydrocarbon-like
Flash point	: 52 °C, Method: ASTM D 93, Pensky-Martens closed cup
pH	: Not applicable.
Odour Threshold	: no data available
Melting point/freezing point	: Freezing Point: -48 °C
Initial boiling point and boiling range	: no data available
Evaporation rate	: no data available
Flammability (solid, gas)	: Not applicable.
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: no data available
Relative vapour density	: no data available
Relative density	: 0.9318,
Density	: no data available
Water solubility	: insoluble
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition	: no data available
Viscosity, dynamic	: no data available
Viscosity, kinematic	: no data available
Molecular weight	: no data available
VOC	: no data available

Section: 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.

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Conditions to avoid	: Heat, flames and sparks.
Incompatible materials	: Strong oxidizing agents
Hazardous decomposition products	: In case of fire, hazardous decomposition products may be produced such as: Carbon oxides nitrogen oxides (NOx)

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact, Ingestion

Potential Health Effects

Eyes	: Causes serious eye irritation.
Skin	: Causes skin irritation. May cause allergic skin reaction.
Ingestion	: May be fatal if swallowed and enters airways.
Inhalation	: May cause respiratory tract irritation. May cause nose, throat, and lung irritation. Inhalation may cause central nervous system effects.
Chronic Exposure	: May cause damage to organs through prolonged or repeated exposure. Suspected of causing cancer.

Experience with human exposure

Eye contact	: Redness, Pain, Irritation
Skin contact	: Redness, Irritation, Allergic reactions
Ingestion	: Vomiting
Inhalation	: Respiratory irritation, Cough, Dizziness, Drowsiness

Toxicity

Product

Acute oral toxicity	: Acute toxicity estimate: > 5,000 mg/kg
Acute inhalation toxicity	: Acute toxicity estimate: 102.35 mg/l Exposure time: 4 h Test atmosphere: vapour
Acute dermal toxicity	: Acute toxicity estimate: > 5,000 mg/kg
Skin corrosion/irritation	: no data available
Serious eye damage/eye irritation	: no data available
Respiratory or skin sensitization	: no data available
Carcinogenicity	

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IARC	Group 2B: Possibly carcinogenic to humans Naphthalene 91-20-3 Ethylbenzene 100-41-4
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP	Reasonably anticipated to be a human carcinogen Naphthalene 91-20-3
Reproductive effects	: no data available
Germ cell mutagenicity	: no data available
Teratogenicity	: no data available
STOT - single exposure	: no data available
STOT - repeated exposure	: no data available
Aspiration toxicity	: no data available

Section: 12. ECOLOGICAL INFORMATION

Toxicity

Environmental Effects : Toxic to aquatic life with long lasting effects.

Components

Toxicity to fish : Heavy Aromatic Naphtha
LC50 Oncorhynchus mykiss (rainbow trout): 3.5 mg/l
Exposure time: 96 h

Diethylene Glycol Monobutyl Ether
LC50 Fish: 1,300 mg/l
Exposure time: 96 h

Xylene
LC50 Fish: 2.6 mg/l
Exposure time: 96 h
Test substance: Information given is based on data obtained from similar substances.

Fatty acid-amine condensate
LC50 Fish: 3.07 mg/l
Exposure time: 96 h
Test substance: Information given is based on data obtained from similar substances.

Ethylbenzene
LC50 Oncorhynchus mykiss (rainbow trout): 4.2 mg/l
Exposure time: 96 h

1,2,4-Trimethylbenzene
LC50 Pimephales promelas (fathead minnow): 7.72 mg/l
Exposure time: 96 h

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Substituted alkylamine
LC50 Danio rerio (zebra fish): 545 mg/l
Exposure time: 96 h

Components

Toxicity to daphnia and other aquatic invertebrates : Xylene
EC50 Aquatic Invertebrate: 1.8 mg/l
Exposure time: 48 h
Test substance: Information given is based on data obtained from similar substances.

Fatty acid-amine condensate
EC50 Aquatic Invertebrate: 0.21 mg/l
Exposure time: 48 h
Test substance: Information given is based on data obtained from similar substances.

Ethylbenzene
EC50 Daphnia magna (Water flea): 1.81 mg/l
Exposure time: 48 h

1,2,4-Trimethylbenzene
LC50 Daphnia magna (Water flea): 3.6 mg/l
Exposure time: 48 h

Substituted alkylamine
EC50 Daphnia magna (Water flea): 54 mg/l
Exposure time: 48 h

Components

Toxicity to algae : Xylene
EC50 Aquatic Plant: 4.73 mg/l
Exposure time: 72 h
Test substance: Information given is based on data obtained from similar substances.

Fatty acid-amine condensate
EC50 Aquatic Plant: 4.094 mg/l
Exposure time: 72 h
Test substance: Information given is based on data obtained from similar substances.

Ethylbenzene
EC50 Pseudokirchneriella subcapitata (algae): 3.6 mg/l
Exposure time: 96 h

Substituted alkylamine
EC50 Desmodesmus subspicatus (green algae): 1,038 mg/l
Exposure time: 72 h

Components

Toxicity to bacteria : Substituted alkylamine
890 mg/l

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Components

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Fatty acid-amine condensate
NOEC: 0.32 mg/l
Exposure time: 21 d
Species: Aquatic Invertebrate
Test substance: Information given is based on data obtained from similar substances.

Persistence and degradability

no data available

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air : <5%
Water : 10 - 30%
Soil : 70 - 90%

The portion in water is expected to float on the surface.

Bioaccumulative potential

no data available

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste. The information presented only applies to the material as supplied. The classification or waste code may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated at the time of disposal to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Disposal methods : Do not contaminate storm water drains, natural waterways or soil with chemical or used container. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of contents/container in accordance with local regulations. Dispose of wastes in an approved waste disposal facility.

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Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

The presence of an RQ component (Reportable Quantity for U.S. DOT) in this product causes it to be regulated with an additional description of RQ for road, or as Environmentally hazardous for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

Land transport (DOT)

Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : ETHYLBENZENE, XYLENE
UN/ID No. : UN 1993
Transport hazard class(es) : 3
Packing group : III
Reportable Quantity (per package) : 1,077 lbs
RQ Component : Xylene

Air transport (IATA)

Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : ETHYLBENZENE, XYLENE
UN/ID No. : UN 1993
Transport hazard class(es) : 3
Packing group : III
Reportable Quantity (per package) : 1,077 lbs
RQ Component : Xylene

Sea transport (IMDG/IMO)

Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : ETHYLBENZENE, XYLENE
UN/ID No. : UN 1993
Transport hazard class(es) : 3
Packing group : III

*Marine pollutant : HEAVY AROMATIC NAPHTHA

* Note: This product is regulated as a Marine Pollutant when shipped by Rail or Highway (in bulk quantities), and when shipped by water in all quantities.

Section: 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

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CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Xylene	1330-20-7	100	1077

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.


SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Respiratory or skin sensitisation
Carcinogenicity
Specific target organ toxicity (single or repeated exposure)
Aspiration hazard
Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Diethylene Glycol	112-34-5	5 - 10 %
Monobutyl Ether		
Xylene	1330-20-7	5 - 10 %
Naphthalene	91-20-3	1 - 5 %
Ethylbenzene	100-41-4	1 - 5 %
1,2,4-Trimethylbenzene	95-63-6	1 - 5 %

California Prop. 65

 **WARNING:** Cancer - www.P65Warnings.ca.gov

Naphthalene	91-20-3
Ethylbenzene	100-41-4

INTERNATIONAL CHEMICAL CONTROL LAWS :

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

United States TSCA Inventory

On or in compliance with the active portion of the TSCA inventory

China Inventory of Existing Chemical Substances

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

Australia. Australian Industrial Chemicals Introduction Scheme (AICIS)

On the inventory, or in compliance with the inventory.

Japan. ENCS - Existing and New Chemical Substances Inventory

On the inventory, or in compliance with the inventory.

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Korea. Korean Existing Chemicals Inventory (KECI)

On the inventory, or in compliance with the inventory.

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

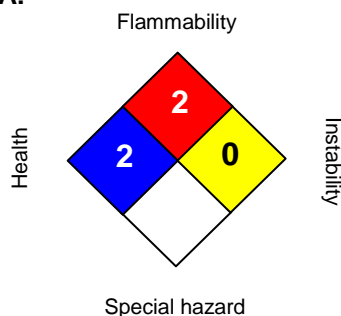
not determined

Taiwan Chemical Substance Inventory

not determined

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	2*
FLAMMABILITY	2
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 11/18/2022
Version Number : 2.0
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.ecolab.com/sds and request access.



SAFETY DATA SHEET

PRODUCT

14152-00

NALCO® EC1044A

952045

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : NALCO® EC1044A

APPLICATION : CORROSION INHIBITOR

COMPANY IDENTIFICATION :
Nalco Company
1601 W. Diehl Road
Naperville, Illinois
60563-1198

6/11/12

EMERGENCY TELEPHONE NUMBER(S) : (800) 424-9300 (24 Hours) CHEMTREC

NFPA 704M/HMIS RATING

HEALTH : 3 / 3 FLAMMABILITY : 2 / 2 INSTABILITY : 0 / 0 OTHER :
0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme * = Chronic Health Hazard

2. COMPOSITION/INFORMATION ON INGREDIENTS

Our hazard evaluation has identified the following chemical substance(s) as hazardous. Consult Section 15 for the nature of the hazard(s).

Hazardous Substance(s)	CAS NO	% (w/w)
Monoethanolamine	141-43-5	60.0 - 100.0

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER

Corrosive. May cause tissue damage. Combustible. Harmful by inhalation, in contact with skin and if swallowed. Vapors may have a strong offensive odor which may cause sensory response including headache, nausea and vomiting.

Keep away from heat. Keep away from sources of ignition - No smoking. Keep container tightly closed. Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. Avoid breathing vapor. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water. Use a mild soap if available.

Wear a face shield. Wear chemical resistant apron, chemical splash goggles, impervious gloves and boots. Combustible Liquid; may form combustible mixtures at or above the flash point. May evolve oxides of carbon (COx) under fire conditions. May evolve oxides of nitrogen (NOx) under fire conditions. Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, or expose containers to flame or other sources of ignition.

PRIMARY ROUTES OF EXPOSURE :

Eye, Skin, Inhalation



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HUMAN HEALTH HAZARDS - ACUTE :

EYE CONTACT :

Corrosive. Will cause eye burns and permanent tissue damage.

SKIN CONTACT :

Corrosive; causes permanent skin damage. Harmful if absorbed through skin.

INGESTION :

Corrosive; causes chemical burns to the mouth, throat and stomach. Harmful if swallowed.

INHALATION :

Elevated temperatures or mechanical action may form vapors, mists or fumes which may be irritating to the eyes, nose, throat and lungs. Harmful by inhalation. Vapors may have a strong offensive odor which may cause sensory response including headache, nausea and vomiting.

AGGRAVATION OF EXISTING CONDITIONS :

A review of available data does not identify any worsening of existing conditions.

HUMAN HEALTH HAZARDS - CHRONIC :

No adverse effects expected other than those mentioned above.

4. FIRST AID MEASURES

EYE CONTACT :

Immediately flush eye with water for at least 15 minutes while holding eyelids open. PROMPT ACTION IS ESSENTIAL IN CASE OF CONTACT. Get immediate medical attention.

SKIN CONTACT :

Immediately flush with plenty of water for at least 15 minutes. Use a mild soap if available. For a large splash, flood body under a shower. Get immediate medical attention. Contaminated clothing, shoes, and leather goods must be discarded or cleaned before re-use.

INGESTION :

Get immediate medical attention. DO NOT INDUCE VOMITING. If conscious, washout mouth and give water to drink.

INHALATION :

Remove to fresh air, treat symptomatically. Get immediate medical attention.

NOTE TO PHYSICIAN :

Probable mucosal damage may contraindicate the use of gastric lavage. Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

5. FIRE FIGHTING MEASURES

FLASH POINT : 195 °F / 91 °C

LOWER EXPLOSION LIMIT : 2.5 V%



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UPPER EXPLOSION LIMIT : 13.1 V%

EXTINGUISHING MEDIA :

Dry powder, Carbon dioxide, Foam, Other extinguishing agent suitable for Class B fires, For large fires, use water spray or fog, thoroughly drenching the burning material.

Keep containers cool by spraying with water.

FIRE AND EXPLOSION HAZARD :

Combustible Liquid; may form combustible mixtures at or above the flash point. May evolve oxides of carbon (CO_x) under fire conditions. May evolve oxides of nitrogen (NO_x) under fire conditions. Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, or expose containers to flame or other sources of ignition.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING :

In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS :

Restrict access to area as appropriate until clean-up operations are complete. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Stop or reduce any leaks if it is safe to do so. Keep people away from and upwind of spill/leak. Ventilate spill area if possible. Remove sources of ignition. Ensure clean-up is conducted by trained personnel only. Do not touch spilled material. Have emergency equipment (for fires, spills, leaks, etc.) readily available.

METHODS FOR CLEANING UP :

SMALL SPILLS: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area. **LARGE SPILLS:** Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Clean contaminated surfaces with water or aqueous cleaning agents. Clean up promptly by scoop or vacuum. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS :

Prevent material from entering sewers or waterways.

7. HANDLING AND STORAGE

HANDLING :

Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. Do not breathe vapors/gases/dust. Keep the containers closed when not in use. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Ensure all containers are labeled. Do not use, store, spill or pour near heat, sparks or open flame. Do not mix with acids.

STORAGE CONDITIONS :

Store in suitable labeled containers. Store the containers tightly closed. Store away from heat and sources of ignition. Have appropriate fire extinguishers available in and near the storage area. Connections must be grounded to avoid electrical charges. Store separately from oxidizers. Store separately from acids. Amine and sulphite products should not be stored within close proximity or resulting vapors may form visible airborne particles.



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SUITABLE CONSTRUCTION MATERIAL :

PVC, Hastelloy C-276, MDPE (medium density polyethylene), Perfluoroelastomer, EPDM, PTFE, HDPE (high density polyethylene), Mild steel, Polypropylene, Polyethylene, Stainless Steel 304, Stainless Steel 316L

UNSUITABLE CONSTRUCTION MATERIAL :

Copper, Aluminum, Ethylene propylene, Plexiglass, Polytetrafluoroethylene/polypropylene copolymer, Brass, Nylon, Buna-N, Natural rubber, Polyurethane, Chlorosulfonated polyethylene rubber, Fluoroelastomer, Neoprene

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS :

Exposure guidelines have not been established for this product. Available exposure limits for the substance(s) are shown below.

Substance(s)	Category:	ppm	mg/m3	Non-Standard Unit
Monoethanolamine	ACGIH/TWA	3		
	ACGIH/STEL	6		
	OSHA Z1/PEL	3	6	

ENGINEERING MEASURES :

General ventilation is recommended. Use local exhaust ventilation if necessary to control airborne mist and vapor.

RESPIRATORY PROTECTION :

Where concentrations in air may exceed the limits given in this section or when significant mists, vapors, aerosols, or dusts are generated, an approved air purifying respirator equipped with suitable filter cartridges is recommended. Consult the respirator / cartridge manufacturer data to verify the suitability of specific devices. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

HAND PROTECTION :

When handling this product, the use of chemical gloves is recommended. The choice of work glove depends on work conditions and what chemicals are handled. Please contact the PPE manufacturer for advice on what type of glove material may be suitable. Gloves should be replaced immediately if signs of degradation are observed.

SKIN PROTECTION :

Wear chemical resistant apron, chemical splash goggles, impervious gloves and boots. A full slicker suit is recommended if gross exposure is possible.

EYE PROTECTION :

Wear a face shield with chemical splash goggles.

HYGIENE RECOMMENDATIONS :

Use good work and personal hygiene practices to avoid exposure. Eye wash station and safety shower are necessary. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing



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before reuse. Always wash thoroughly after handling chemicals. When handling this product never eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Liquid
APPEARANCE	Colorless
ODOR	Amine
SPECIFIC GRAVITY	1 @ 77 °F / 25 °C
DENSITY	8.31 lb/gal
SOLUBILITY IN WATER	Complete
pH (2.5 %)	12.6
VISCOSITY	30 cps @ 74 °F / 23.3 °C
BOILING POINT	342 °F / 172.2 °C
VAPOR PRESSURE	1 mm Hg @ 68 °F / 20 °C
VAPOR DENSITY	2.1 (Air = 1)
VOC CONTENT	99.3 % EPA Method 24

Note: These physical properties are typical values for this product and are subject to change.

10. STABILITY AND REACTIVITY

STABILITY :

Stable under normal conditions.

HAZARDOUS POLYMERIZATION :

Hazardous polymerization will not occur.

CONDITIONS TO AVOID :

Heat and sources of ignition including static discharges.

MATERIALS TO AVOID :

Contact with strong acids (e.g. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) may generate heat, splattering or boiling and toxic vapors. Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors. Avoid contact with SO₂ or acidic bisulfite products, which may react to form visible airborne amine salt particles. Certain amines in contact with nitrous acid, organic or inorganic nitrites or atmospheres with high nitrous oxide concentrations may produce N-nitrosamines, many of which are cancer-causing agents to laboratory animals.

HAZARDOUS DECOMPOSITION PRODUCTS :

Under fire conditions: Oxides of carbon, Oxides of nitrogen

11. TOXICOLOGICAL INFORMATION

The following results are for the product.



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ACUTE ORAL TOXICITY :

Species: Rat
LD50: 1,510 mg/kg
Test Descriptor: Product

ACUTE DERMAL TOXICITY :

Species: Rabbit
LD50: 1,000 mg/kg
Test Descriptor: Product

PRIMARY SKIN IRRITATION :

Species: Rabbit
Draize Score: 8.0 /8.0
Test Descriptor: Product

PRIMARY EYE IRRITATION :

Species: Rabbit
Draize Score: 110.0 /110.0
Test Descriptor: Product

SENSITIZATION :

This product is not expected to be a sensitizer.

CARCINOGENICITY :

None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH). None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).

REPRODUCTIVE EFFECTS :

No reproductive toxic effects expected.

MUTAGENICITY :

Not expected to be a mutagen.

HUMAN HAZARD CHARACTERIZATION :

Based on our hazard characterization, the potential human hazard is: High High

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL EFFECTS :

The following results are for the product.



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Acute Fish Results :

Species	Exposure	Test Type	Value	Test Descriptor
Fathead Minnow	96 hrs	LC50	125 mg/l	Product

ACUTE INVERTEBRATE RESULTS :

Species	Exposure	Test Type	Value	Test Descriptor
Daphnia magna	48 hrs	LC50	33 mg/l	Product

MOBILITY :

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	Water	Soil/Sediment
<5%	30 - 50%	50 - 70%

The portion in water is expected to float on the surface.

BIOACCUMULATION POTENTIAL

This preparation or material is not expected to bioaccumulate.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION

Based on our hazard characterization, the potential environmental hazard is: Moderate Moderate

If released into the environment, see CERCLA/SUPERFUND in Section 15.

13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

Hazardous Waste: D002

Hazardous wastes must be transported by a licensed hazardous waste transporter and disposed of or treated in a properly licensed hazardous waste treatment, storage, disposal or recycling facility. Consult local, state, and federal regulations for specific requirements.

14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are as follows.



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LAND TRANSPORT :

Proper Shipping Name :	ETHANOLAMINE
Technical Name(s) :	Monoethanolamine
UN/ID No :	UN 2491
Hazard Class - Primary :	8
Packing Group :	III
Flash Point :	91 °C / 195 °F

AIR TRANSPORT (ICAO/IATA) :

Proper Shipping Name :	ETHANOLAMINE
Technical Name(s) :	Monoethanolamine
UN/ID No :	UN 2491
Hazard Class - Primary :	8
Packing Group :	III

MARINE TRANSPORT (IMDG/IMO) :

Proper Shipping Name :	ETHANOLAMINE
Technical Name(s) :	Monoethanolamine
UN/ID No :	UN 2491
Hazard Class - Primary :	8
Packing Group :	III

15. REGULATORY INFORMATION

This section contains additional information that may have relevance to regulatory compliance. The information in this section is for reference only. It is not exhaustive, and should not be relied upon to take the place of an individualized compliance or hazard assessment. Nalco accepts no liability for the use of this information.

NATIONAL REGULATIONS, USA :

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200 :

Based on our hazard evaluation, the following substance(s) in this product is/are hazardous and the reason(s) is/are shown below.

Monoethanolamine : Corrosive, Combustible., HARMFUL

CERCLA/SUPERFUND, 40 CFR 302 :

Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (TITLE III) - SECTIONS 302, 311, 312, AND 313 :

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355) :

This product does not contain substances listed in Appendix A and B as an Extremely Hazardous Substance.



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PRODUCT

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SECTIONS 311 AND 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370) :

Our hazard evaluation has found this product to be hazardous. The product should be reported under the following indicated EPA hazard categories:

- | | |
|---|-----------------------------------|
| X | Immediate (Acute) Health Hazard |
| - | Delayed (Chronic) Health Hazard |
| X | Fire Hazard |
| - | Sudden Release of Pressure Hazard |
| - | Reactive Hazard |

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372) :

This product does not contain substances on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA) :

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 / formerly Sec. 307, 40 CFR 116.4 / formerly Sec. 311 :

Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

CLEAN AIR ACT, Sec. 112 (Hazardous Air Pollutants, as amended by 40 CFR 63), Sec. 602 (40 CFR 82, Class I and II Ozone Depleting Substances) :

Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

CALIFORNIA PROPOSITION 65 :

Substances listed under California Proposition 65 are not intentionally added or expected to be present in this product.

MICHIGAN CRITICAL MATERIALS :

Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

STATE RIGHT TO KNOW LAWS :

The following substances are disclosed for compliance with State Right to Know Laws:

Monoethanolamine

141-43-5

INTERNATIONAL CHEMICAL CONTROL LAWS :



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CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) :

The substances in this preparation are listed on the Domestic Substances List (DSL), are exempt, or have been reported in accordance with the New Substances Notification Regulations.

AUSTRALIA

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

CHINA

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

EUROPE

The substances in this preparation have been reviewed for compliance with the EINECS or ELINCS inventories.

JAPAN

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

KOREA

All substances in this product comply with the Toxic Chemical Control Law (TCCL) and are listed on the Existing Chemicals List (ECL)

NEW ZEALAND

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

PHILIPPINES

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

16. OTHER INFORMATION

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

REFERENCES

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, OH., (Ariel Insight™ CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.



SAFETY DATA SHEET

PRODUCT

NALCO® EC1044A

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (TOMES CPS™ CD-ROM Version),
Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Title 29 Code of Federal Regulations, Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA), (Ariel Insight™ CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, OH,
(TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

Ariel Insight™ (An integrated guide to industrial chemicals covered under major regulatory and advisory programs), North American Module, Western European Module, Chemical Inventories Module and the Generics Module (Ariel Insight™ CD-ROM Version), Ariel Research Corp., Bethesda, MD.

The Teratogen Information System, University of Washington, Seattle, WA (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

Prepared By : Product Safety Department
Date issued : 06/11/2012
Version Number : 1.12

AQUAMAX™ EC3011A

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : AQUAMAX™ EC3011A

Other means of identification : Not applicable.

Recommended use : PROCESS ANTIFOULANT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630) 305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC


Issuing date : 01/07/2022

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Skin irritation : Category 2
Eye irritation : Category 2A

GHS Label element

Hazard pictograms : 

Signal Word : Warning

Hazard Statements : Causes skin irritation.
Causes serious eye irritation.

Precautionary Statements : **Prevention:**
Wash skin thoroughly after handling. Wear protective gloves/ eye protection/ face protection.
Response:
IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/ attention. Take off contaminated clothing and wash before reuse.
Storage:
Protect product from freezing.

Other hazards : None known.

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AQUAMAX™ EC3011A

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Diethylethanolamine	100-37-8	5 - 10

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Get medical attention if irritation develops and persists.

If swallowed : Rinse mouth. Get medical attention if symptoms occur.

If inhaled : Get medical attention if symptoms occur.

Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.

Notes to physician : Treat symptomatically.

Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : None known.

Specific hazards during firefighting : Not flammable or combustible.

Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NO_x)

Special protective equipment for firefighters : Use personal protective equipment.

Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

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- Personal precautions, protective equipment and emergency procedures : Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Flush away traces with water.

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Avoid contact with skin and eyes. Wash hands thoroughly after handling. Use only with adequate ventilation. Protect product from freezing.
- Conditions for safe storage : Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
- Storage temperature : 0 °C to 65 °C
- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Stainless Steel 304, Stainless Steel 316L, Brass, CPVC (rigid), HDPE (high density polyethylene), LLDPE, Nylon 11, Plexiglass, Polypropylene, Teflon (PTFE), PVC, UHMWPE, EPDM, Kalrez, Perfluoroelastomer, Viton, Fluoroelastomer, Buna-N
- Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Mild steel, Neoprene

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Diethylethanolamine	100-37-8	TWA	2 ppm	ACGIH
		TWA	10 ppm 50 mg/m ³	NIOSH REL
		TWA	10 ppm 50 mg/m ³	OSHA Z1

- Engineering measures : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

- Eye protection : Safety glasses with side-shields
- Hand protection : Wear impervious chemical-resistant gloves when handling this product. The following glove types are recommended based on our review of glove manufacturer information and/or other available sources.

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Nitrile rubber
butyl-rubber
Viton

Other glove types may be used for short term, incidental contact if determined by testing to provide adequate worker protection.

Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

- Skin protection : Wear suitable protective clothing.
- Respiratory protection : Use local exhaust ventilation or other engineering controls as necessary to control airborne vapour and mist.
Where concentrations in air may exceed the limits given in this section or when significant vapours are generated, use an approved air purifying respirator fitted with a gas and vapour cartridge.
Use a particulate pre-filter where operations generate significant mists or aerosols.
Recommended gas and vapour cartridge:
Organic vapor cartridge.
In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA or supplied-air respirator should be used.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Liquid
- Colour : brown
- Odour : mild
- Flash point : does not flash
- pH : 8.8 - 9.2,(100 %), (25 °C), Method: ASTM E 70
- Odour Threshold : no data available
- Melting point/freezing point : -3 °C, ASTM D-1177
- Initial boiling point and boiling range : 100 °C
- Evaporation rate : 1.5, (BuAc = 1)
- Flammability (solid, gas) : Not applicable.
- Upper explosion limit : no data available
- Lower explosion limit : no data available
- Vapour pressure : 24 mm Hg, (25 °C),
- Relative vapour density : no data available

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Relative density	:	1.04, (25 °C), ASTM D-1298
Density	:	1.04 g/cm ³ , 8.7 lb/gal
Water solubility	:	completely soluble
Solubility in other solvents	:	no data available
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	no data available
Thermal decomposition	:	no data available
Viscosity, dynamic	:	4 mPa.s (25 °C), Method: ASTM D 2983
Viscosity, kinematic	:	no data available
Molecular weight	:	no data available
VOC	:	no data available

Section: 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	Freezing temperatures. Extremes of temperature
Incompatible materials	:	Oxidizing agents
Hazardous decomposition products	:	In case of fire, hazardous decomposition products may be produced such as: Carbon oxides nitrogen oxides (NO _x)

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes	:	Causes serious eye irritation.
Skin	:	Causes skin irritation.
Ingestion	:	Health injuries are not known or expected under normal use.
Inhalation	:	Health injuries are not known or expected under normal use.
Chronic Exposure	:	Health injuries are not known or expected under normal use.

Experience with human exposure

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Eye contact : Redness, Pain, Irritation
Skin contact : Redness, Irritation
Ingestion : No symptoms known or expected.
Inhalation : No symptoms known or expected.

Toxicity

Product

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg
Acute inhalation toxicity : Acute toxicity estimate: 62.31 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Acute dermal toxicity : Acute toxicity estimate: > 5,000 mg/kg
Skin corrosion/irritation : no data available
Serious eye damage/eye irritation : no data available
Respiratory or skin sensitization : no data available
Carcinogenicity : no data available
Reproductive effects : no data available
Germ cell mutagenicity : no data available
Teratogenicity : no data available
STOT - single exposure : no data available
STOT - repeated exposure : no data available
Aspiration toxicity : no data available

Section: 12. ECOLOGICAL INFORMATION

Toxicity

Environmental Effects : This product has no known ecotoxicological effects.

Product

Toxicity to fish : LC50 Pimephales promelas (fathead minnow): > 1,000 mg/l
Exposure time: 96 hrs
Test substance: Product
LC50 Lepomis macrochirus (Bluegill sunfish): > 1,000 mg/l
Exposure time: 96 hrs
Test substance: Product
LC50 Oncorhynchus mykiss (rainbow trout): > 1,000 mg/l
Exposure time: 96 hrs
Test substance: Product

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NOEC Pimephales promelas (fathead minnow): 1,000 mg/l
Exposure time: 96 hrs
Test substance: Product

Toxicity to daphnia and other aquatic invertebrates : LC50 Daphnia magna (Water flea): > 1,000 mg/l
Exposure time: 48 hrs
Test substance: Product

NOEC Daphnia magna (Water flea): 600 mg/l
Exposure time: 48 hrs
Test substance: Product

Components

Toxicity to algae : Diethylethanolamine
EC50 : 44 mg/l
Exposure time: 72 h

Persistence and degradability

The organic portion of this preparation is expected to be readily biodegradable.

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air : <5%
Water : 30 - 50%
Soil : 50 - 70%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

This preparation or material is not expected to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

The information presented only applies to the material as supplied. The classification or waste code may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated at the time of disposal to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Disposal methods : Where possible recycling is preferred to disposal or

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incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Air transport (IATA)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Sea transport (IMDG/IMO)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Section: 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This product does not contain a RQ substance, or this product contains a substance with a RQ, however the calculated RQ exceeds the reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

On or in compliance with the active portion of the TSCA inventory

Australia. Australian Industrial Chemicals Introduction Scheme (AICIS)

All substances in this product comply with the Australian Industrial Chemicals Introduction Scheme (AICIS)

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

Japan. ENCS - Existing and New Chemical Substances Inventory

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

Korea. Korean Existing Chemicals Inventory (KECI)

All substances in this product comply with the Chemical Control Act (CCA) and are listed on the Existing Chemicals List (ECL)

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

China Inventory of Existing Chemical Substances

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

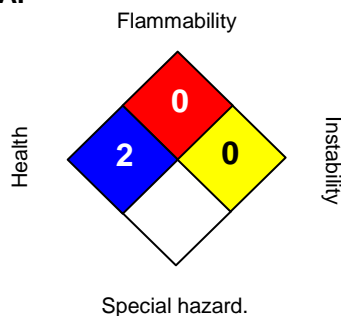
All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

Taiwan Chemical Substance Inventory

All substances in this product comply with the Taiwan Existing Chemical Substances Inventory (ECSI).

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	2
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 01/07/2022
Version Number : 1.5
Prepared By : Regulatory Affairs

SAFETY DATA SHEET

AQUAMAX™ EC3011A

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.nalco.com and request access.

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : FORTIS® EC3071A

Other means of identification : Not applicable.

Recommended use : PROCESS ANTIFOULANT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630) 305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 02/04/2020

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3

Skin irritation : Category 2

Serious eye damage : Category 1

Carcinogenicity : Category 2

Specific target organ toxicity - single exposure : Category 3 (Respiratory system, Central Nervous System)

Aspiration hazard : Category 1

GHS Label element

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes skin irritation.
Causes serious eye damage.
May cause respiratory irritation.
May cause drowsiness or dizziness.
Suspected of causing cancer.

Precautionary Statements : **Prevention:**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wear protective gloves/ protective clothing/ eye protection/ face protection.

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Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/ physician. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.

Storage:

Store in a well-ventilated place.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Xylene	1330-20-7	30 - 60
2,6-Di-tert-Butyl-4-Methylphenol	128-37-0	10 - 30
Ethylbenzene	100-41-4	10 - 30
Isobutanol	78-83-1	1 - 5

Section: 4. FIRST AID MEASURES

- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Get medical attention if irritation develops and persists.
- If swallowed : Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Aspiration hazard if swallowed - can enter lungs and cause damage. Get medical attention immediately.
- If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.
- Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

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Section: 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Foam
Carbon dioxide
Dry powder
Other extinguishing agent suitable for Class B fires
For large fires, use water spray or fog, thoroughly drenching the burning material.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.
Flash back possible over considerable distance.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, or expose containers to flame or other sources of ignition.
- Hazardous combustion products : Carbon oxides
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Remove all sources of ignition. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Do not flush into surface water or sanitary sewer system.

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Avoid contact with skin and eyes. Open drum carefully as content may be under pressure. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away from fire, sparks and

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FORTIS® EC3071A

heated surfaces. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.

Conditions for safe storage : Keep away from heat and sources of ignition. Keep in a cool, well-ventilated place. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers. Connections must be grounded to avoid electrical charges.

Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Carbon Steel C1018, Stainless Steel 304, Stainless Steel 316L, MDPE (medium density polyethylene), Perfluoroelastomer, PTFE, FEP (encapsulated), Surface-modified HDPE (high density polyethylene), Fluoroelastomer
The following compatibility data is suggested based on similar product data and/or industry experience: Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Neoprene, Nitrile, EPDM, TFE, HDPE (high density polyethylene)The following compatibility data is suggested based on similar product data and/or industry experience:

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Xylene	1330-20-7	TWA	100 ppm 435 mg/m3	OSHA Z1
		TWA	100 ppm	ACGIH
		STEL	150 ppm	ACGIH
2,6-Di-tert-Butyl-4-Methylphenol	128-37-0	TWA (Inhalable fraction and vapor)	2 mg/m3	ACGIH
		TWA	10 mg/m3	NIOSH REL
Ethylbenzene	100-41-4	TWA	20 ppm	ACGIH
		TWA	100 ppm 435 mg/m3	NIOSH REL
		STEL	125 ppm 545 mg/m3	NIOSH REL
Isobutanol	78-83-1	TWA	100 ppm 435 mg/m3	OSHA Z1
		TWA	50 ppm	ACGIH
		TWA	50 ppm 150 mg/m3	NIOSH REL
		TWA	100 ppm 300 mg/m3	OSHA Z1

Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

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Eye protection	: Safety goggles Face-shield
Hand protection	: Wear the following personal protective equipment: Viton® gloves Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Skin protection	: Wear suitable protective clothing.
Respiratory protection	: When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. An organic vapor cartridge may be used.
Hygiene measures	: Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: clear colourless to amber
Odour	: aromatic, Hydrocarbon
Flash point	: 27 °C, Method: ASTM D 93, Pensky-Martens closed cup
pH	: no data available
Odour Threshold	: no data available
Melting point/freezing point	: Pour point: -51 °C, ASTM D-97
Initial boiling point and boiling range	: 135.9 °C
Evaporation rate	: no data available
Flammability (solid, gas)	: Not applicable.
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: 14 mm Hg, (37.8 °C),
Relative vapour density	: no data available
Relative density	: 0.89, (15.6 °C),
Density	: 0.89 g/cm ³ , 7.4 lb/gal
Water solubility	: insoluble
Solubility in other solvents	: no data available

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Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	no data available
Thermal decomposition	:	no data available
Viscosity, dynamic	:	no data available
Viscosity, kinematic	:	1 mm ² /s (40 °C), estimated 0.75 mm ² /s (66 °C), estimated
Molecular weight	:	no data available
VOC	:	no data available

Section: 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Strong oxidizing agents
Hazardous decomposition products	:	In case of fire, hazardous decomposition products may be produced such as: Carbon oxides

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes	:	Causes serious eye damage.
Skin	:	Causes skin irritation.
Ingestion	:	May be fatal if swallowed and enters airways.
Inhalation	:	May cause respiratory tract irritation. May cause nose, throat, and lung irritation. Inhalation may cause central nervous system effects.
Chronic Exposure	:	Suspected of causing cancer.

Experience with human exposure

Eye contact	:	Redness, Pain, Corrosion
Skin contact	:	Redness, Irritation
Ingestion	:	Vomiting

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Inhalation : Respiratory irritation, Cough, Dizziness, Drowsiness

Toxicity

Product

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg

Acute inhalation toxicity : Acute toxicity estimate: 132.42 mg/l
Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : Acute toxicity estimate: 2,093 mg/kg

Skin corrosion/irritation : no data available

Serious eye damage/eye irritation : no data available

Respiratory or skin sensitization : no data available

Carcinogenicity

IARC **Group 2B: Possibly carcinogenic to humans**
Ethylbenzene 100-41-4

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive effects : no data available

Germ cell mutagenicity : no data available

Teratogenicity : no data available

STOT - single exposure : no data available

STOT - repeated exposure : no data available

Aspiration toxicity : no data available

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : Very toxic to aquatic life with long lasting effects.

Components

Toxicity to fish : 2,6-Di-tert-Butyl-4-Methylphenol
LC50 Danio rerio (zebra fish): > 0.57 mg/l
Exposure time: 96 h

Components

Toxicity to daphnia and other aquatic invertebrates : 2,6-Di-tert-Butyl-4-Methylphenol
EC50 Daphnia magna (Water flea): 0.48 mg/l

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Exposure time: 48 h

Ethylbenzene
EC50 Daphnia: 1.81 mg/l
Exposure time: 48 h

Components

Toxicity to algae : 2,6-Di-tert-Butyl-4-Methylphenol
EC50 Desmodesmus subspicatus (green algae): > 0.40 mg/l
Exposure time: 72 h

Components

Toxicity to fish (Chronic toxicity) : 2,6-Di-tert-Butyl-4-Methylphenol
NOEC: 0.053 mg/l
Exposure time: 30 d
Species: Oryzias latipes (Japanese medaka)

Components

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : 2,6-Di-tert-Butyl-4-Methylphenol
NOEC: 0.069 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

Persistence and degradability

The organic portion of this preparation is expected to be inherently biodegradable.

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air : 5 - 10%
Water : 30 - 50%
Soil : 50 - 70%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

Component substances have a potential to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

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If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

The presence of an RQ component (Reportable Quantity for U.S. DOT) in this product causes it to be regulated with an additional description of RQ for road, or as Environmentally hazardous for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

Land transport (DOT)

Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : Xylene, Ethylbenzene
UN/ID No. : UN 1993
Transport hazard class(es) : 3
Packing group : III
Reportable Quantity (per package) : 190 lbs
RQ Component : Xylene

Air transport (IATA)

Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : Xylene, Ethylbenzene
UN/ID No. : UN 1993
Transport hazard class(es) : 3
Packing group : III
Reportable Quantity (per package) : 190 lbs
RQ Component : Xylene

Sea transport (IMDG/IMO)

Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : Xylene, Ethylbenzene
UN/ID No. : UN 1993
Transport hazard class(es) : 3
Packing group : III

*Marine pollutant : 2,6-Di-tert-Butyl-4-Methylphenol

* Note: This product is regulated as a Marine Pollutant when shipped by Rail or Highway (in bulk quantities), and when shipped by water in all quantities.

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Section: 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Xylene	1330-20-7	100	190

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.


SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Skin corrosion or irritation
Serious eye damage or eye irritation
Carcinogenicity
Specific target organ toxicity (single or repeated exposure)
Aspiration hazard

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Xylene	1330-20-7	50 - 70 %
Ethylbenzene	100-41-4	10 - 20 %

California Prop. 65

 **WARNING:** Cancer - www.P65Warnings.ca.gov

Ethylbenzene 100-41-4

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

Australia. Industrial Chemical (Notification and Assessment) Act

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

Japan. ENCS - Existing and New Chemical Substances Inventory

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All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

Korea. Korean Existing Chemicals Inventory (KECI)

All substances in this product comply with the Chemical Control Act (CCA) and are listed on the Existing Chemicals List (ECL)

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

China Inventory of Existing Chemical Substances

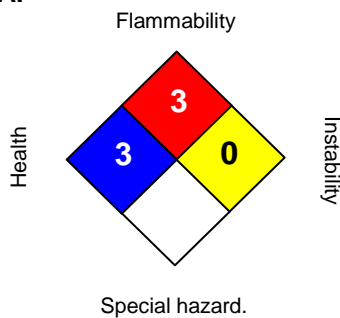
All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	3*
FLAMMABILITY	3
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 02/04/2020
Version Number : 1.4
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.nalco.com and request access.

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PRIMACT™ EC3072A PM 29912-00

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : PRIMACT™ EC3072A

Other means of identification : Not applicable.

Recommended use : PROCESS ANTIFOULANT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630) 305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 07/06/2021

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3

Skin corrosion : Category 1B

Serious eye damage : Category 1

Skin sensitization : Category 1

Carcinogenicity : Category 2

Reproductive toxicity : Category 2

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

Aspiration hazard : Category 1

GHS Label element

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause respiratory irritation.
Suspected of causing cancer.
Suspected of damaging fertility or the unborn child.

Precautionary Statements : **Prevention:**
Obtain special instructions before use. Do not handle until all safety precautions

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have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wear protective gloves/ protective clothing/ eye protection/ face protection. Contaminated work clothing should not be allowed out of the workplace. Wash skin thoroughly after handling. Ground/bond container and receiving equipment. Use explosion-proof electrical/ ventilating/ lighting/ equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Use only outdoors or in a well-ventilated area.

Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/ physician. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician. IF exposed or concerned: Get medical advice/attention. Immediately call a POISON CENTER or doctor/ physician. If skin irritation or rash occurs: Get medical advice/ attention. Take off contaminated clothing and wash before reuse. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage:

Store in a well-ventilated place. Protect product from freezing.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Heavy Aromatic Naphtha	64742-94-5	10 - 30
Butanol	71-36-3	5 - 10
Monoethanolamine	141-43-5	5 - 10
Phosphoric acid ester salt	Proprietary	1 - 5
Naphthalene	91-20-3	1 - 5
1,2,4-Trimethylbenzene	95-63-6	1 - 5
Nonylphenol	25154-52-3	0.1 - 1

Section: 4. FIRST AID MEASURES

- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
- If swallowed : Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Aspiration hazard if swallowed - can enter

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lungs and cause damage. Get medical attention immediately.

- If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.
- Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Foam
Carbon dioxide
Dry powder
Other extinguishing agent suitable for Class B fires
For large fires, use water spray or fog, thoroughly drenching the burning material.
- Unsuitable extinguishing media : None known.
- Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.
Flash back possible over considerable distance.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
- Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides
nitrogen oxides (NOx) Sulphur oxides Oxides of phosphorus
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Use water spray to cool unopened containers. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Remove all sources of ignition. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for : Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain

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containment and cleaning up spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Avoid contact with skin and eyes. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Do not ingest. Keep away from fire, sparks and heated surfaces. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Conditions for safe storage : Keep away from heat and sources of ignition. Keep in a cool, well-ventilated place. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Stainless Steel 304, Stainless Steel 316L, Carbon Steel C1018, TFE, EPDM, FEP (encapsulated), PTFE, HDPE (high density polyethylene), Fluoroelastomer, Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.
- Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Nitrile, Neoprene, MDPE (medium density polyethylene), Surface-modified HDPE (high density polyethylene)

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Heavy Aromatic Naphtha	64742-94-5	TWA	500 ppm 2,000 mg/m ³	OSHA Z1
		TWA	200 mg/m ³ (as total hydrocarbon vapor)	ACGIH
Butanol	71-36-3	TWA	20 ppm	ACGIH
		Ceiling	50 ppm 150 mg/m ³	NIOSH REL
Monoethanolamine	141-43-5	TWA	100 ppm 300 mg/m ³	OSHA Z1
		TWA	3 ppm	ACGIH
		STEL	6 ppm	ACGIH
		TWA	3 ppm 8 mg/m ³	NIOSH REL
Naphthalene	91-20-3	STEL	6 ppm 15 mg/m ³	NIOSH REL
		TWA	3 ppm 6 mg/m ³	OSHA Z1
Naphthalene	91-20-3	TWA	10 ppm	ACGIH

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		TWA	10 ppm 50 mg/m3	NIOSH REL
		STEL	15 ppm 75 mg/m3	NIOSH REL
		TWA	10 ppm 50 mg/m3	OSHA Z1
1,2,4-Trimethylbenzene	95-63-6	TWA	25 ppm 125 mg/m3	NIOSH REL
		TWA	25 ppm	ACGIH

Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety goggles
Face-shield

Hand protection : Wear impervious chemical-resistant gloves when handling this product. The following glove types are recommended based on our review of glove manufacturer information and/or other available sources.
Nitrile rubber
Viton® gloves
Other glove types may be used for short term, incidental contact if determined by testing to provide adequate worker protection.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

Respiratory protection : Use local exhaust ventilation or other engineering controls as necessary to control airborne mist and vapor.
Where concentrations in air may exceed the limits given in this section or when significant mists, vapors, aerosols are generated, an approved air purifying respirator equipped with suitable filter cartridges is recommended.
Use a particulate pre-filter where operations generate significant mists or aerosols.
Recommended gas and vapour cartridge:
Organic vapor cartridge.
Ammonia / amine cartridge.
In event of emergency or planned entry into unknown concentrations, a positive pressure, full-facepiece SCBA or supplied-air respirator should be used.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance	: Liquid
Colour	: clear
Odour	: hydrocarbon-like
Flash point	: 48 °C, Method: ASTM D 93, Pensky-Martens closed cup
pH	: no data available
Odour Threshold	: no data available
Melting point/freezing point	: Freezing Point: -3 °C
Initial boiling point and boiling range	: no data available
Evaporation rate	: no data available
Flammability (solid, gas)	: Not applicable.
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: 8.963 hPa, (20 °C),
Relative vapour density	: no data available
Relative density	: 0.9, (15 °C),
Density	: 7.48 lb/gal
Water solubility	: no data available
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition	: no data available
Viscosity, dynamic	: no data available
Viscosity, kinematic	: 11 mm ² /s (40 °C)
Molecular weight	: no data available
VOC	: no data available

Section: 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: Heat, flames and sparks.
Incompatible materials	: Strong oxidizing agents
Hazardous decomposition	: Decomposition products may include the following materials:

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products Carbon oxides
 nitrogen oxides (NOx)
 Sulphur oxides
 Oxides of phosphorus

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes : Causes serious eye damage.

Skin : Causes severe skin burns. Causes skin irritation. May cause allergic skin reaction.

Ingestion : May be fatal if swallowed and enters airways. Causes digestive tract burns.

Inhalation : May cause respiratory tract irritation. May cause nose, throat, and lung irritation.

Chronic Exposure : Suspected of damaging fertility or the unborn child. Suspected of causing cancer.

Experience with human exposure

Eye contact : Redness, Pain, Corrosion

Skin contact : Redness, Pain, Irritation, Corrosion, Allergic reactions

Ingestion : Corrosion, Vomiting, Abdominal pain

Inhalation : Respiratory irritation, Cough

Toxicity

Product

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg

Acute inhalation toxicity : Acute toxicity estimate: 22.5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : Acute toxicity estimate: > 5,000 mg/kg

Skin corrosion/irritation : no data available

Serious eye damage/eye irritation : no data available

Respiratory or skin sensitization : no data available

Carcinogenicity

IARC **Group 2B: Possibly carcinogenic to humans**
 Naphthalene 91-20-3

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OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP	Reasonably anticipated to be a human carcinogen Naphthalene 91-20-3
Reproductive effects	: no data available
Germ cell mutagenicity	: no data available
Teratogenicity	: no data available
STOT - single exposure	: no data available
STOT - repeated exposure	: no data available
Aspiration toxicity	: no data available

Section: 12. ECOLOGICAL INFORMATION

Toxicity

Environmental Effects : Toxic to aquatic life with long lasting effects.

Components

Toxicity to fish : Heavy Aromatic Naphtha
LC50 Oncorhynchus mykiss (rainbow trout): 3.5 mg/l
Exposure time: 96 h

Butanol
LC50 Pimephales promelas (fathead minnow): 1,376 mg/l
Exposure time: 96 h

1,2,4-Trimethylbenzene
LC50 Pimephales promelas (fathead minnow): 7.72 mg/l
Exposure time: 96 h

Components

Toxicity to daphnia and other aquatic invertebrates : Butanol
EC50 Daphnia magna (Water flea): 1,328 mg/l
Exposure time: 48 h

Monoethanolamine
LC50 Daphnia magna (Water flea): 65 mg/l
Exposure time: 48 h

1,2,4-Trimethylbenzene
LC50 Daphnia magna (Water flea): 3.6 mg/l
Exposure time: 48 h

Components

Toxicity to algae : Butanol
EC50 Pseudokirchneriella subcapitata (green algae): 225 mg/l
Exposure time: 96 h

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Components

Toxicity to bacteria : Butanol
4,390 mg/l

Components

Toxicity to daphnia and other : Butanol
aquatic invertebrates NOEC: 4.1 mg/l
(Chronic toxicity) Exposure time: 21 d
Species: Daphnia magna (Water flea)

Monoethanolamine
NOEC: 0.85 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

Persistence and degradability

The organic portion of this preparation is expected to be inherently biodegradable.

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air : <5%
Water : 10 - 30%
Soil : 70 - 90%

The portion in water is expected to float on the surface.

Bioaccumulative potential

Component substances have a potential to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

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Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

The presence of an RQ component (Reportable Quantity for U.S. DOT) in this product causes it to be regulated with an additional description of RQ for road, or as Environmentally hazardous for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

Land transport (DOT)

Proper shipping name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.
Technical name(s) : Butanol, 1,2,4-Trimethylbenzene, Monoethanolamine
UN/ID No. : UN 2924
Transport hazard class(es) : 3, 8
Packing group : III
Reportable Quantity (per package) : 3,230 lbs
RQ Component : Naphthalene

Air transport (IATA)

Proper shipping name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.
Technical name(s) : Butanol, 1,2,4-Trimethylbenzene, Monoethanolamine
UN/ID No. : UN 2924
Transport hazard class(es) : 3, 8
Packing group : III
Reportable Quantity (per package) : 3,230 lbs
RQ Component : Naphthalene

Sea transport (IMDG/IMO)

Proper shipping name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.
Technical name(s) : Butanol, 1,2,4-Trimethylbenzene, Monoethanolamine
UN/ID No. : UN 2924
Transport hazard class(es) : 3, 8
Packing group : III

*Marine pollutant : Naphthalene

* Note: This product is regulated as a Marine Pollutant when shipped by Rail or Highway (in bulk quantities), and when shipped by water in all quantities.

Section: 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

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EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Naphthalene	91-20-3	100	3235

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitisation
Carcinogenicity
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)
Aspiration hazard

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Butanol	71-36-3	5 - 10 %
Naphthalene	91-20-3	1 - 5 %
1,2,4-Trimethylbenzene	95-63-6	1 - 5 %

California Prop. 65

 **WARNING:** Cancer - www.P65Warnings.ca.gov

Naphthalene 91-20-3

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

On or in compliance with the active portion of the TSCA inventory

Australia. Australian Industrial Chemicals Introduction Scheme (AICIS)

All substances in this product comply with the Australian Industrial Chemicals Introduction Scheme (AICIS)

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

Japan. ENCS - Existing and New Chemical Substances Inventory

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

Korea. Korean Existing Chemicals Inventory (KECI)

All substances in this product comply with the Chemical Control Act (CCA) and are listed on the Existing Chemicals List (ECL)

SAFETY DATA SHEET

PRIMACT™ EC3072A

China Inventory of Existing Chemical Substances

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

Taiwan Chemical Substance Inventory

All substances in this product comply with the Taiwan Existing Chemical Substances Inventory (EC SI).

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

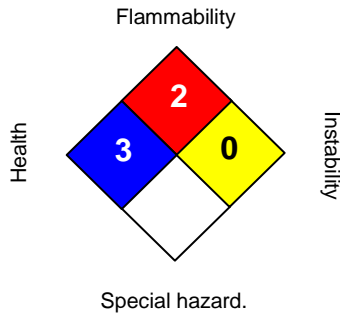
All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	3*
FLAMMABILITY	2
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 07/06/2021
Version Number : 1.4
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.nalco.com and request access.

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : COMPTRENE™ EC3205A

Other means of identification : Not applicable. PM 32914-00

Recommended use : PROCESS ANTIFOULANT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630) 305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 02/03/2020

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3

Skin irritation : Category 2

Eye irritation : Category 2B

Skin sensitization : Category 1

Carcinogenicity : Category 2

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

Aspiration hazard : Category 1

GHS Label element

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes skin and eye irritation.
May cause an allergic skin reaction.
May cause respiratory irritation.
Suspected of causing cancer.

Precautionary Statements : **Prevention:**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wear protective gloves/ protective clothing/ eye protection/ face protection.

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COMPTRENE™ EC3205A

Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/ physician. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage:

Store in a well-ventilated place.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Heavy Aromatic Naphtha	64742-94-5	60 - 100
Diethylhydroxylamine	3710-84-7	10 - 30
Naphthalene	91-20-3	5 - 10
1,2,4-Trimethylbenzene	95-63-6	5 - 10
Substituted aromatic amine	Proprietary	1 - 5

Section: 4. FIRST AID MEASURES

- In case of eye contact : Rinse with plenty of water. Get medical attention if symptoms occur.
- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
- If swallowed : Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Aspiration hazard if swallowed - can enter lungs and cause damage. Get medical attention immediately.
- If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.
- Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

SAFETY DATA SHEET

COMPTRENE™ EC3205A

- Suitable extinguishing media : Foam
Carbon dioxide
Dry powder
Other extinguishing agent suitable for Class B fires
For large fires, use water spray or fog, thoroughly drenching the burning material.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.
Flash back possible over considerable distance.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
- Hazardous combustion products : Carbon oxides nitrogen oxides (NOx)
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Remove all sources of ignition. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Do not flush into surface water or sanitary sewer system.

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Avoid contact with skin and eyes. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away from fire, sparks and heated surfaces. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Conditions for safe storage : Keep away from heat and sources of ignition. Keep in a cool, well-ventilated place. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.

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- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Aluminum, Mild steel, Carbon Steel C1018, Stainless Steel 304, Stainless Steel 316L, Hastelloy C-276, Perfluoroelastomer, FEP (encapsulated)
- Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Copper, Chlorosulfonated polyethylene rubber, Fluoroelastomer, Neoprene, Ethylene propylene, Polypropylene, MDPE (medium density polyethylene), Nitrile, Plexiglass, EPDM, TFE, Brass, Polytetrafluoroethylene/polypropylene copolymer, Nylon, PVC, Buna-N, HDPE (high density polyethylene), Natural rubber, Polyurethane, Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Heavy Aromatic Naphtha	64742-94-5	TWA	500 ppm 2,000 mg/m ³	OSHA Z1
		TWA	200 mg/m ³ (as total hydrocarbon vapor)	ACGIH
Diethylhydroxylamine	3710-84-7	TWA	2 ppm	ACGIH
Naphthalene	91-20-3	TWA	10 ppm	ACGIH
		TWA	10 ppm 50 mg/m ³	NIOSH REL
		STEL	15 ppm 75 mg/m ³	NIOSH REL
		TWA	10 ppm 50 mg/m ³	OSHA Z1
1,2,4-Trimethylbenzene	95-63-6	TWA	25 ppm 125 mg/m ³	NIOSH REL
		TWA	25 ppm	ACGIH

- Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

- Eye protection : Safety goggles
Face-shield
- Hand protection : Wear the following personal protective equipment:
Standard glove type.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Skin protection : Wear suitable protective clothing.
- Respiratory protection : When workers are facing concentrations above the exposure limit they must use

SAFETY DATA SHEET

COMPTRENE™ EC3205A

appropriate certified respirators.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid
Colour : dark amber
Odour : aromatic, Hydrocarbon, amine-like
Flash point : 50 °C, Method: ASTM D 93, Pensky-Martens closed cup
pH : Not applicable.
Odour Threshold : no data available
Melting point/freezing point : no data available
Initial boiling point and boiling range : 134 °C, Method: ASTM D 86
Evaporation rate : no data available
Flammability (solid, gas) : Not applicable.
Upper explosion limit : no data available
Lower explosion limit : no data available
Vapour pressure : < 5.2 mm Hg, (38 °C), ASTM D 5191,
Relative vapour density : no data available
Relative density : 0.9, (16 °C),
Density : 7.49 lb/gal
Water solubility : insoluble
Solubility in other solvents : no data available
Partition coefficient: n-octanol/water : no data available
Auto-ignition temperature : no data available
Thermal decomposition : no data available
Viscosity, dynamic : no data available
Viscosity, kinematic : 1.31 mm²/s (40 °C), Method: ASTM D 445
Molecular weight : no data available
VOC : no data available

Section: 10. STABILITY AND REACTIVITY

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Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: Heat, flames and sparks.
Incompatible materials	: Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.
Hazardous decomposition products	: In case of fire, hazardous decomposition products may be produced such as: Carbon oxides nitrogen oxides (NOx)

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes	: Causes eye irritation.
Skin	: Causes skin irritation. May cause allergic skin reaction.
Ingestion	: May be fatal if swallowed and enters airways.
Inhalation	: May cause respiratory tract irritation. May cause nose, throat, and lung irritation.
Chronic Exposure	: Suspected of causing cancer.

Experience with human exposure

Eye contact	: Redness, Irritation
Skin contact	: Redness, Irritation, Allergic reactions
Ingestion	: Vomiting
Inhalation	: Respiratory irritation, Cough

Toxicity

Product

Acute oral toxicity	: Acute toxicity estimate: 4,412 mg/kg
Acute inhalation toxicity	: Acute toxicity estimate: 58.34 mg/l Exposure time: 4 h Test atmosphere: vapour
Acute dermal toxicity	: Acute toxicity estimate: > 5,000 mg/kg

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Skin corrosion/irritation	:	no data available
Serious eye damage/eye irritation	:	Result: Mild eye irritation
Respiratory or skin sensitization	:	no data available
Carcinogenicity		
IARC		Group 2B: Possibly carcinogenic to humans Naphthalene 91-20-3
OSHA		No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP		Reasonably anticipated to be a human carcinogen Naphthalene 91-20-3
Reproductive effects	:	no data available
Germ cell mutagenicity	:	no data available
Teratogenicity	:	no data available
STOT - single exposure	:	no data available
STOT - repeated exposure	:	no data available
Aspiration toxicity	:	May be fatal if swallowed and enters airways.

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : Very toxic to aquatic life with long lasting effects.

Product

Toxicity to fish : LC50 Fish: 1.9 mg/l
Exposure time: 96 hrs

Toxicity to daphnia and other aquatic invertebrates : LC50 Crustacean: 1.9 mg/l
Exposure time: 48 hrs

Components

Toxicity to algae : Diethylhydroxylamine
EC50 Pseudokirchneriella subcapitata (algae): > 101 mg/l
Exposure time: 72 h

Persistence and degradability

no data available

Mobility

no data available

Bioaccumulative potential

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no data available

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

The information presented only applies to the material as supplied. The classification or waste code may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated at the time of disposal to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

The presence of an RQ component (Reportable Quantity for U.S. DOT) in this product causes it to be regulated with an additional description of RQ for road, or as Environmentally hazardous for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

Land transport (DOT)

Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : Substituted alkylamine, 1,2,4-Trimethylbenzene
UN/ID No. : UN 1993
Transport hazard class(es) : 3
Packing group : III
Reportable Quantity (per package) : 1,260 lbs
RQ Component : Naphthalene

Air transport (IATA)

Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : Substituted alkylamine, 1,2,4-Trimethylbenzene
UN/ID No. : UN 1993
Transport hazard class(es) : 3
Packing group : III
Reportable Quantity (per package) : 1,260 lbs
RQ Component : Naphthalene

Sea transport (IMDG/IMO)

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COMPTRENE™ EC3205A

Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : Substituted alkylamine, 1,2,4-Trimethylbenzene
UN/ID No. : UN 1993
Transport hazard class(es) : 3
Packing group : III

*Marine pollutant : Heavy Aromatic Naphtha, Naphthalene

* Note: This product is regulated as a Marine Pollutant when shipped by Rail or Highway (in bulk quantities), and when shipped by water in all quantities.

Section: 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Naphthalene	91-20-3	100	1263

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.


SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitisation
Carcinogenicity
Specific target organ toxicity (single or repeated exposure)
Aspiration hazard

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Naphthalene	91-20-3	5 - 10 %
1,2,4-Trimethylbenzene	95-63-6	5 - 10 %

California Prop. 65

 **WARNING:** Cancer - www.P65Warnings.ca.gov

Naphthalene 91-20-3

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

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COMPTRENE™ EC3205A

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

Australia. Industrial Chemical (Notification and Assessment) Act

This product contains substance(s) which are not in compliance with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS) and may require additional review.

Canadian Domestic Substances List (DSL)

This product contains substance(s) which are not listed on the Domestic Substances List (DSL) or the Non-Domestic Substances List (NDSL).

Japan. ENCS - Existing and New Chemical Substances Inventory

This product contains substance(s) which are not in compliance with the Law Regulating the Manufacture and Importation Of Chemical Substances and are not listed on the Existing and New Chemical Substances list (ENCS).

Korea. Korean Existing Chemicals Inventory (KECI)

This product contains substance(s) which are not in compliance with the Chemical Control Act (CCA) and may require additional review.

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

This product contains substance(s) which are not in compliance with the Republic Act 6969 (RA 6969) and may require additional review.

China Inventory of Existing Chemical Substances

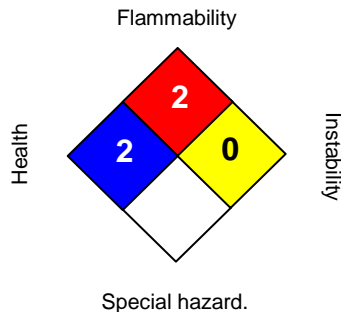
All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	2*
FLAMMABILITY	2
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 02/03/2020
Version Number : 1.3
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

SAFETY DATA SHEET

COMPTRENE™ EC3205A

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.nalco.com and request access.

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : ACTRENE® EC3267A

Other means of identification : Not applicable.

Recommended use : PROCESS ANTIFOULANT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630) 305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 02/03/2020

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3

Acute toxicity (Inhalation) : Category 4

Skin corrosion : Category 1C

Serious eye damage : Category 1

Skin sensitization : Category 1

Carcinogenicity : Category 2

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

Specific target organ toxicity - repeated exposure (Oral) : Category 2 (Liver)

Aspiration hazard : Category 1

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Harmful if inhaled.
May cause respiratory irritation.
Suspected of causing cancer.
May cause damage to organs (Liver) through prolonged or repeated exposure if

SAFETY DATA SHEET

ACTRENE® EC3267A

swallowed.

Precautionary Statements : **Prevention:**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not breathe dust/fume/gas/mist/vapours/spray. Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/ physician. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
Storage:
Store in a well-ventilated place.
Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Heavy Aromatic Naphtha	64742-94-5	30 - 60
Diethylhydroxylamine	3710-84-7	10 - 30
Substituted aromatic amine	Proprietary	10 - 30
Substituted phenol 1	Proprietary	5 - 10
Naphthalene	91-20-3	5 - 10
1,2,4-Trimethylbenzene	95-63-6	1 - 5
Substituted phenol 2	Proprietary	1 - 5

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

If swallowed : Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Aspiration hazard if swallowed - can enter lungs and cause damage. Get medical attention immediately.

If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention.

Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.

SAFETY DATA SHEET

ACTRENE® EC3267A

- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Foam
Carbon dioxide
Dry powder
Other extinguishing agent suitable for Class B fires
For large fires, use water spray or fog, thoroughly drenching the burning material.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.
Flash back possible over considerable distance.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
- Hazardous combustion products : Carbon oxides nitrogen oxides (NOx)
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Use water spray to cool unopened containers. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Remove all sources of ignition. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Do not flush into surface water or sanitary sewer system.

Section: 7. HANDLING AND STORAGE

SAFETY DATA SHEET

ACTRENE® EC3267A

- Advice on safe handling : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Do not ingest. Keep away from fire, sparks and heated surfaces. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Conditions for safe storage : Keep away from heat and sources of ignition. Keep in a cool, well-ventilated place. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: FEP (encapsulated), Aluminum, Mild steel, Carbon Steel C1018, Stainless Steel 304, Stainless Steel 316L, Hastelloy C-276, PTFE, Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use., Perfluoroelastomer
- Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Copper, Neoprene, Ethylene propylene, Polypropylene, Polyethylene, MDPE (medium density polyethylene), Nitrile, Plexiglass, EPDM, TFE, Brass, Nylon, PVC, Buna-N, HDPE (high density polyethylene), Natural rubber, Polyurethane, Polytetrafluoroethylene/polypropylene copolymer, Chlorosulfonated polyethylene rubber, Fluoroelastomer

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Heavy Aromatic Naphtha	64742-94-5	TWA	500 ppm 2,000 mg/m ³	OSHA Z1
		TWA	200 mg/m ³ (as total hydrocarbon vapor)	ACGIH
Diethylhydroxylamine	3710-84-7	TWA	2 ppm	ACGIH
Naphthalene	91-20-3	TWA	10 ppm	ACGIH
		TWA	10 ppm 50 mg/m ³	NIOSH REL
		STEL	15 ppm 75 mg/m ³	NIOSH REL
		TWA	10 ppm 50 mg/m ³	OSHA Z1
1,2,4-Trimethylbenzene	95-63-6	TWA	25 ppm 125 mg/m ³	NIOSH REL
		TWA	25 ppm	ACGIH

- Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

- Eye protection : Safety goggles
Face-shield

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- Hand protection : Wear the following personal protective equipment:
Viton® gloves
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Skin protection : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing
- Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
An organic vapor cartridge may be used.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Liquid
- Colour : Dark red
- Odour : Aromatic Hydrocarbon
- Flash point : 49 °C, Method: ASTM D 93, Pensky-Martens closed cup
- pH : Not applicable.
- Odour Threshold : no data available
- Melting point/freezing point : MELTING POINT: -40 °C, ASTM D-97
- Initial boiling point and boiling range : no data available
- Evaporation rate : no data available
- Flammability (solid, gas) : Not applicable.
- Upper explosion limit : no data available
- Lower explosion limit : no data available
- Vapour pressure : no data available
- Relative vapour density : no data available
- Relative density : 0.89 - 0.9, (15.6 °C), ASTM D-1298
- Density : 7.4 - 7.5 lb/gal
- Water solubility : insoluble
- Solubility in other solvents : no data available
- Partition coefficient: n-octanol/water : no data available

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Auto-ignition temperature	:	no data available
Thermal decomposition	:	no data available
Viscosity, dynamic	:	no data available
Viscosity, kinematic	:	1.6 mm ² /s (40 °C), Method: ASTM D 445
Molecular weight	:	no data available
VOC	:	no data available

Section: 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Oxidizing agents Certain amines in contact with nitrous acid, organic or inorganic nitrites or atmospheres with high nitrous oxide concentrations may produce N-nitrosamines, many of which are cancer-causing agents to laboratory animals.
Hazardous decomposition products	:	In case of fire, hazardous decomposition products may be produced such as: Carbon oxides nitrogen oxides (NO _x)

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes	:	Causes serious eye damage.
Skin	:	Causes severe skin burns. May cause allergic skin reaction.
Ingestion	:	May be fatal if swallowed and enters airways. Causes digestive tract burns.
Inhalation	:	May cause respiratory tract irritation. Harmful if inhaled. May cause nose, throat, and lung irritation.
Chronic Exposure	:	Suspected of causing cancer.

Experience with human exposure

Eye contact	:	Redness, Pain, Corrosion
Skin contact	:	Redness, Pain, Irritation, Corrosion, Allergic reactions
Ingestion	:	Corrosion, Vomiting, Abdominal pain

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Inhalation : Respiratory irritation, Cough

Toxicity

Product

Acute oral toxicity : Acute toxicity estimate: 2,328 mg/kg

Acute inhalation toxicity : Acute toxicity estimate: 3.04 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : Acute toxicity estimate: 2,477 mg/kg

Skin corrosion/irritation : no data available

Serious eye damage/eye irritation : no data available

Respiratory or skin sensitization : no data available

Carcinogenicity

IARC **Group 2B: Possibly carcinogenic to humans**
Naphthalene 91-20-3

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP **Reasonably anticipated to be a human carcinogen**
Naphthalene 91-20-3

Reproductive effects : no data available

Germ cell mutagenicity : no data available

Teratogenicity : no data available

STOT - single exposure : no data available

STOT - repeated exposure : May cause damage to organs through prolonged or repeated exposure.

Aspiration toxicity : no data available

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : Toxic to aquatic life.
Very toxic to aquatic life with long lasting effects.

Components

Toxicity to fish : Heavy Aromatic Naphtha
LC50 Oncorhynchus mykiss (rainbow trout): 3.5 mg/l
Exposure time: 96 h

Diethylhydroxylamine
LC50 Pimephales promelas (fathead minnow): > 134 mg/l

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Exposure time: 96 h

Substituted aromatic amine
LC50 Fish: 0.202 mg/l
Exposure time: 96 h

Components

Toxicity to daphnia and other aquatic invertebrates : Diethylhydroxylamine
EC50 *Daphnia magna* (Water flea): 8.2 mg/l
Exposure time: 48 h

Substituted phenol 2
Daphnia magna (Water flea): 0.5 mg/l
Exposure time: 48 h

Components

Toxicity to algae : Diethylhydroxylamine
EC50 *Pseudokirchneriella subcapitata* (algae): > 101 mg/l
Exposure time: 72 h

Substituted phenol 2
Desmodesmus subspicatus (green algae): 0.13 mg/l
Exposure time: 72 h

Persistence and degradability

The organic portion of this preparation is expected to be inherently biodegradable.

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	:	<5%
Water	:	10 - 30%
Soil	:	70 - 90%

The portion in water is expected to float on the surface.

Bioaccumulative potential

Component substances have a potential to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

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If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

- Hazardous Waste: : D001, D018
- Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.
- Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

The presence of an RQ component (Reportable Quantity for U.S. DOT) in this product causes it to be regulated with an additional description of RQ for road, or as Environmentally hazardous for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

Land transport (DOT)

- Proper shipping name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.
Technical name(s) : Substituted alkylamine, Substituted aromatic amine
UN/ID No. : UN 2924
Transport hazard class(es) : 3, 8
Packing group : III
Reportable Quantity (per package) : 2,000 lbs
RQ Component : NAPHTHALENE

Air transport (IATA)

- Proper shipping name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.
Technical name(s) : Substituted alkylamine, Substituted aromatic amine
UN/ID No. : UN 2924
Transport hazard class(es) : 3, 8
Packing group : III
Reportable Quantity (per package) : 2,000 lbs
RQ Component : NAPHTHALENE

Sea transport (IMDG/IMO)

- Proper shipping name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.
Technical name(s) : Substituted alkylamine, Substituted aromatic amine
UN/ID No. : UN 2924
Transport hazard class(es) : 3, 8
Packing group : III

- *Marine pollutant : Substituted aromatic amine, Substituted phenol 1

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* Note: This product is regulated as a Marine Pollutant when shipped by Rail or Highway (in bulk quantities), and when shipped by water in all quantities.

Section: 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Naphthalene	91-20-3	100	2000

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Carcinogenicity
Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitisation
Specific target organ toxicity (single or repeated exposure)
Aspiration hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Naphthalene	91-20-3	5 %
1,2,4-Trimethylbenzene	95-63-6	3.2 %

California Prop. 65

 **WARNING:** Cancer - www.P65Warnings.ca.gov

Naphthalene

91-20-3

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

China Inventory of Existing Chemical Substances

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All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

Korea. Korean Existing Chemicals Inventory (KECI)

All substances in this product comply with the Chemical Control Act (CCA) and are listed on the Existing Chemicals List (ECL)

Japan. ENCS - Existing and New Chemical Substances Inventory

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

Australia. Industrial Chemical (Notification and Assessment) Act

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

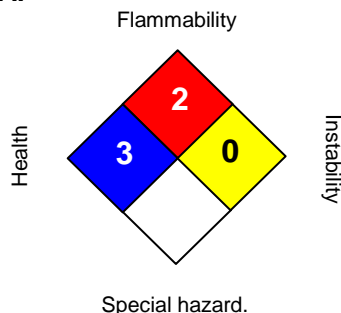
All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

Taiwan Chemical Substance Inventory

All substances in this product comply with the Taiwan Existing Chemical Substances Inventory (ECSI).

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	3*
FLAMMABILITY	2
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 02/03/2020
Version Number : 1.4
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality

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specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.nalco.com and request access.

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Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : ACTRENE® EC3269A

Other means of identification : Not applicable.

Recommended use : PROCESS ANTIFOULANT
ANTIFOULANT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Champion Company
7705 Highway 90-A
Sugar Land, Texas 77478
USA
TEL: (281) 263-7000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 03/02/2015

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3
Skin corrosion : Category 1C
Serious eye damage : Category 1
Skin sensitization : Category 1
Carcinogenicity : Category 2
Aspiration hazard : Category 1

GHS Label element

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Suspected of causing cancer.

Precautionary Statements : **Prevention:**
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ ventilating/ lighting/ equipment. Use only non-sparking tools. Take precautionary

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measures against static discharge. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wash skin thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/ protective clothing/ eye protection/ face protection. Use personal protective equipment as required.

Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/attention. Immediately call a POISON CENTER or doctor/physician. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage:

Store in a well-ventilated place. Keep cool. Store locked up.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Heavy Aromatic Naphtha	64742-94-5	60 - 100
Substituted alkylamine	Proprietary	10 - 30
Naphthalene	91-20-3	5 - 10
Substituted aromatic amine	Proprietary	5 - 10
1,2,4-Trimethylbenzene	95-63-6	1 - 5
Substituted phenol 1	Proprietary	1 - 5
Paraffinic oil	64742-65-0	1 - 5

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

If swallowed : Do NOT induce vomiting. Rinse mouth with water. Never give anything by mouth to an unconscious person. Aspiration hazard if swallowed - can enter lungs and cause damage. Get medical attention immediately.

If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.

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- Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.
Flash back possible over considerable distance.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
- Hazardous combustion products : Decomposition products may include the following materials:
Carbon oxides nitrogen oxides (NOx)
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Use water spray to cool unopened containers. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Remove all sources of ignition. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Do not flush into surface water or sanitary sewer system.

Section: 7. HANDLING AND STORAGE

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- Advice on safe handling : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Do not ingest. Keep away from fire, sparks and heated surfaces. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Conditions for safe storage : Keep away from heat and sources of ignition. Keep in a cool, well-ventilated place. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers.
- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: PTFE, FEP (encapsulated), Aluminum, Mild steel, Carbon Steel C1018, Stainless Steel 304, Stainless Steel 316L, Hastelloy C-276, Perfluoroelastomer, Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use., Surface-modified HDPE (high density polyethylene)
- Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Copper, Neoprene, Ethylene propylene, Polypropylene, Polyethylene, MDPE (medium density polyethylene), Nitrile, Plexiglass, EPDM, TFE, Brass, Nylon, PVC, Buna-N, HDPE (high density polyethylene), Natural rubber, Polyurethane, Polytetrafluoroethylene/polypropylene copolymer, Chlorosulfonated polyethylene rubber, Fluoroelastomer, Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Heavy Aromatic Naphtha	64742-94-5	TWA	500 ppm 2,000 mg/m ³	OSHA Z1
		TWA	200 mg/m ³	ACGIH
Naphthalene	91-20-3	TWA	10 ppm	ACGIH
		STEL	15 ppm	ACGIH
		TWA	10 ppm 50 mg/m ³	NIOSH REL
		STEL	15 ppm 75 mg/m ³	NIOSH REL
		TWA	10 ppm 50 mg/m ³	OSHA Z1
1,2,4-Trimethylbenzene	95-63-6	TWA	25 ppm 125 mg/m ³	NIOSH REL
Paraffinic oil	64742-65-0	TWA (Inhalable fraction)	5 mg/m ³	ACGIH
		TWA (Mist)	5 mg/m ³	NIOSH REL
		STEL (Mist)	10 mg/m ³	NIOSH REL
		TWA (Mist)	5 mg/m ³	OSHA Z1

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Engineering measures : Effective exhaust ventilation system Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety goggles
Face-shield

Hand protection : Wear the following personal protective equipment:
Standard glove type.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid
Colour : red
Odour : hydrocarbon-like
Flash point : 53.9 °C
Method: Pensky-Martens closed cup

pH : Not applicable.
Odour Threshold : no data available
Melting point/freezing point : MELTING POINT: -40 °C, ASTM D-97
Initial boiling point and boiling range : no data available
Evaporation rate : no data available
Flammability (solid, gas) : no data available
Upper explosion limit : no data available
Lower explosion limit : no data available
Vapour pressure : no data available
Relative vapour density : no data available
Relative density : 0.89 - 0.9 (15.6 °C) ASTM D-1298
Density : 7.4 - 7.5 lb/gal
Water solubility : insoluble
Solubility in other solvents : no data available
Partition coefficient: n- : no data available

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octanol/water

- Auto-ignition temperature : no data available
- Thermal decomposition temperature : no data available
- Viscosity, dynamic : no data available
- Viscosity, kinematic : 3.2 mm²/s (40 °C)
Method: ASTM D 445
- VOC : no data available

Section: 10. STABILITY AND REACTIVITY

- Chemical stability : Stable under normal conditions.
- Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.
- Conditions to avoid : Heat, flames and sparks.
- Incompatible materials : Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.
Strong acids
Certain amines in contact with nitrous acid, organic or inorganic nitrites or atmospheres with high nitrous oxide concentrations may produce N-nitrosamines, many of which are cancer-causing agents to laboratory animals.
- Hazardous decomposition products : Decomposition products may include the following materials:
Carbon oxides
nitrogen oxides (NO_x)

Section: 11. TOXICOLOGICAL INFORMATION

- Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

- Eyes : Causes serious eye damage.
- Skin : Causes severe skin burns. May cause allergic skin reaction.
- Ingestion : May be fatal if swallowed and enters airways. Causes digestive tract burns.
- Inhalation : May cause nose, throat, and lung irritation.
- Chronic Exposure : Suspected of causing cancer.

Experience with human exposure

- Eye contact : Redness, Pain, Corrosion
- Skin contact : Redness, Pain, Irritation, Corrosion, Allergic reactions
- Ingestion : Corrosion, Vomiting, Abdominal pain

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Inhalation : Respiratory irritation, Cough

Toxicity

Product

Acute oral toxicity : Acute toxicity estimate : 2,867 mg/kg

Acute inhalation toxicity : Acute toxicity estimate : > 40 mg/l
Exposure time: 4 h

Acute dermal toxicity : Acute toxicity estimate : > 5,000 mg/kg

Skin corrosion/irritation : no data available

Serious eye damage/eye irritation : no data available

Respiratory or skin sensitization : no data available

Carcinogenicity

IARC

Group 2B: Possibly carcinogenic to humans

Naphthalene 91-20-3

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

Reasonably anticipated to be a human carcinogen

Naphthalene 91-20-3

Reproductive effects : no data available

Germ cell mutagenicity : no data available

Teratogenicity : no data available

STOT - single exposure : no data available

STOT - repeated exposure : no data available

Aspiration toxicity : no data available

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : Very toxic to aquatic life with long lasting effects.

Components

Toxicity to fish : Heavy Aromatic Naphtha
LC50 : 3.5 mg/l
Exposure time: 96 h

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Substituted aromatic amine
LC50 : 0.202 mg/l
Exposure time: 96 h

Persistence and degradability

The organic portion of this preparation is expected to be inherently biodegradable.

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	:	<5%
Water	:	10 - 30%
Soil	:	70 - 90%

The portion in water is expected to float on the surface.

Bioaccumulative potential

Component substances have a potential to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

The information presented only applies to the material as supplied. The classification or waste code may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

The presence of an RQ component (Reportable Quantity for U.S. EPA and DOT) in this product causes it to be regulated with an additional description of RQ for road, or as a class 9 for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

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Proper shipping name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.
Technical name(s) : Substituted alkylamine, Substituted aromatic amine
UN/ID No. : UN 2924
Transport hazard class(es) : 3, 8
Packing group : III
Reportable Quantity (per package) : 1,370 lbs
RQ Component : NAPHTHALENE

Air transport (IATA)

The presence of an RQ component (Reportable Quantity for U.S. EPA and DOT) in this product causes it to be regulated with an additional description of RQ for road, or as a class 9 for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

Proper shipping name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.
Technical name(s) : Substituted alkylamine, Substituted aromatic amine
UN/ID No. : UN 2924
Transport hazard class(es) : 3, 8
Packing group : III
Reportable Quantity (per package) : 1,370 lbs
RQ Component : NAPHTHALENE

Sea transport (IMDG/IMO)

Proper shipping name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.
Technical name(s) : Substituted alkylamine, Substituted aromatic amine
UN/ID No. : UN 2924
Transport hazard class(es) : 3, 8
Packing group : III

*Marine pollutant : Substituted aromatic amine

*Note: This product is regulated as a Marine Pollutant when shipped by Rail, Highway (in bulk quantities), or Air (if no other hazard class applies), and when shipped by water in all quantities.

Section: 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Naphthalene	91-20-3	100	1370

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard
Chronic Health Hazard
Fire Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SAFETY DATA SHEET

ACTRENE® EC3269A

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Naphthalene	91-20-3	5 - 10 %
1,2,4-Trimethylbenzene	95-63-6	1 - 5 %

California Prop 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

Naphthalene	91-20-3
Paraffinic oil	64742-65-0

INTERNATIONAL CHEMICAL CONTROL LAWS :

TOXIC SUBSTANCES CONTROL ACT (TSCA)

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

AUSTRALIA

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

CHINA

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

EUROPE

The substances in this preparation have been reviewed for compliance with the EINECS or ELINCS inventories.

JAPAN

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

KOREA

All substances in this product comply with the Toxic Chemical Control Law (TCCL) and are listed on the Existing Chemicals List (ECL)

NEW ZEALAND

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

PHILIPPINES

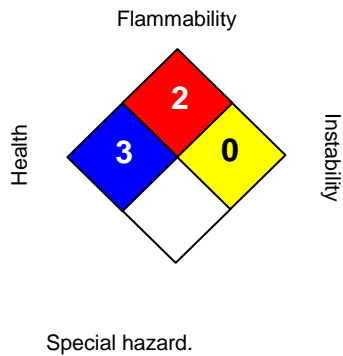
This product contains substance(s) which are not in compliance with the Republic Act 6969 (RA 6969) and may require additional review.

Section: 16. OTHER INFORMATION

SAFETY DATA SHEET

ACTRENE® EC3269A

NFPA:



HMIS III:

HEALTH	3*
FLAMMABILITY	2
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 03/02/2015
Version Number : 1.0
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

For additional copies of an MSDS visit www.nalco.com and request access.

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : NALCO® EC3332W 36337-00

Other means of identification : Not applicable.

Recommended use : ANTIFOULANT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Champion Company
7705 Highway 90-A
Sugar Land, Texas 77478
USA
TEL: (281) 263-7000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 03/06/2015

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 4
Acute toxicity (Inhalation) : Category 4
Aspiration hazard : Category 1

GHS Label element

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : Combustible liquid
May be fatal if swallowed and enters airways.
Harmful if inhaled.

Precautionary Statements : **Prevention:**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Use only outdoors or in a well-ventilated area. Wear protective gloves/ eye protection/ face protection.
Response:
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell. Do NOT induce vomiting. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
Storage:

Store in a well-ventilated place. Keep cool. Store locked up.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Concentration: (%)
Straight Run Middle Distillate	64741-44-2	30 - 60
Hydrotreated Light Distillate	64742-47-8	10 - 30
Polypropylene Glycol	25322-69-4	10 - 30
Ethoxylated Tall Oil	61791-00-2	1 - 5
Aliphatic alcohol	Proprietary	1 - 5

Section: 4. FIRST AID MEASURES

In case of eye contact	: Rinse with plenty of water. Get medical attention if symptoms occur.
In case of skin contact	: Wash off with soap and plenty of water. Get medical attention if symptoms occur.
If swallowed	: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Aspiration hazard if swallowed - can enter lungs and cause damage. Get medical attention immediately.
If inhaled	: Remove to fresh air. Treat symptomatically. Get medical attention.
Protection of first-aiders	: In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
Notes to physician	: Treat symptomatically.
Most important symptoms and effects, both acute and delayed	: See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	: High volume water jet
Specific hazards during firefighting	: Fire Hazard Keep away from heat and sources of ignition. Flash back possible over considerable distance.
Hazardous combustion products	: Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) Sulphur oxides Oxides of phosphorus
Special protective equipment for firefighters	: Use personal protective equipment.

Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Remove all sources of ignition. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Do not allow contact with soil, surface or ground water.

Methods and materials for containment and cleaning up : Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Do not flush into surface water or sanitary sewer system.

Section: 7. HANDLING AND STORAGE

Advice on safe handling : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away from fire, sparks and heated surfaces. Do not breathe dust/fume/gas/mist/vapours/spray. Wash hands thoroughly after handling. Use only with adequate ventilation.

Conditions for safe storage : Keep away from heat and sources of ignition. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers.

Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

Unsuitable material : not determined

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Hydrotreated Light Distillate	64742-47-8	TWA	500 ppm 2,000 mg/m ³	OSHA Z1
		TWA	200 mg/m ³	ACGIH
		TWA (Mist)	5 mg/m ³	OSHA Z1
		TWA (Mist)	5 mg/m ³	NIOSH REL
		STEL (Mist)	10 mg/m ³	NIOSH REL
Polypropylene Glycol	25322-69-4	TWA (Aerosol.)	10 mg/m ³	WEEL

Engineering measures : Effective exhaust ventilation system Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety glasses

Hand protection : Wear protective gloves.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Wear suitable protective clothing.

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid

Colour : off-white

Odour : hydrocarbon-like

Flash point : 93.0 °C

pH : no data available

Odour Threshold : no data available

Melting point/freezing point : FREEZING POINT: -16 °C

Initial boiling point and boiling range : no data available

Evaporation rate : no data available

Flammability (solid, gas) : no data available

Upper explosion limit : no data available

Lower explosion limit : no data available

Vapour pressure : no data available

Relative vapour density : no data available

Relative density : 0.84 (15.6 °C)

Density : 7.0 lb/gal

Water solubility : immiscible

Solubility in other solvents : no data available

Partition coefficient: n-octanol/water : no data available

Auto-ignition temperature : no data available

Thermal decomposition temperature : no data available

Viscosity, dynamic : 4.7 mPa.s (40 °C)

Viscosity, kinematic : no data available
VOC : no data available

Section: 10. STABILITY AND REACTIVITY

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.
Conditions to avoid : Heat, flames and sparks.

Incompatible materials : Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.

Hazardous decomposition products : Decomposition products may include the following materials:
Carbon oxides
nitrogen oxides (NOx)
Sulphur oxides
Oxides of phosphorus

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes : Health injuries are not known or expected under normal use.

Skin : Health injuries are not known or expected under normal use.

Ingestion : May be fatal if swallowed and enters airways.

Inhalation : Harmful if inhaled.

Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact : No symptoms known or expected.

Skin contact : No symptoms known or expected.

Ingestion : Vomiting

Inhalation : No information available.

Toxicity**Product**

Acute oral toxicity : no data available

Acute inhalation toxicity	: Acute toxicity estimate : 18.49 mg/l Exposure time: 4 h
Acute dermal toxicity	: Acute toxicity estimate : > 5,000 mg/kg
Skin corrosion/irritation	: no data available
Serious eye damage/eye irritation	: no data available
Respiratory or skin sensitization	: no data available
Carcinogenicity	
IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
Reproductive effects	: no data available
Germ cell mutagenicity	: no data available
Teratogenicity	: no data available
STOT - single exposure	: no data available
STOT - repeated exposure	: no data available
Aspiration toxicity	: no data available

Components

Acute oral toxicity	: Straight Run Middle Distillate LD50 rat > 5,000 mg/kg
	Hydrotreated Light Distillate LD50 rat > 5,000 mg/kg
	Polypropylene Glycol LD50 rat > 2,000 mg/kg
	Ethoxylated Tall Oil LD50 rat > 6,400 mg/kg
	Aliphatic alcohol LD50 rat > 5,000 mg/kg

Section: 12. ECOLOGICAL INFORMATION**Ecotoxicity**

Environmental Effects : Toxic to aquatic life with long lasting effects.

Components

Toxicity to fish : Straight Run Middle Distillate
LC50 Fish: 44 mg/l
Exposure time: 96 h

Hydrotreated Light Distillate
LC50 : > 1,000 mg/l
Exposure time: 96 h

Ethoxylated Tall Oil
LC50 : 7.8 mg/l
Exposure time: 96 h

Aliphatic alcohol
LC50 Fish: 4.9 mg/l
Exposure time: 96 h

Components

Toxicity to daphnia and other aquatic invertebrates : Hydrotreated Light Distillate
EC50 : > 1,000 mg/l
Exposure time: 72 h

Polypropylene Glycol
EC50 Daphnia: 105.8 mg/l
Exposure time: 48 h

Components

Toxicity to algae : Hydrotreated Light Distillate
EC50 : > 1,000 mg/l
Exposure time: 48 h

Components

Toxicity to bacteria : Hydrotreated Light Distillate
> 1,000 mg/l

Persistence and degradability

The organic portion of this preparation is expected to be inherently biodegradable.

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air : 10 - 30%

Water : 30 - 50%
Soil : 30 - 50%

The portion in water is expected to float on the surface.

Bioaccumulative potential

Component substances have a potential to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it is not a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

For Packages Less Than Or Equal To 119 Gallons:

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

For Packages Greater Than 119 Gallons:

Proper shipping name : COMBUSTIBLE LIQUID, N.O.S.
Technical name(s) : Aliphatic hydrocarbon
UN/ID No. : NA 1993
Hazard Class - Primary : COMBUSTIBLE LIQUID
Packing group : III

Air transport (IATA)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Sea transport (IMDG/IMO)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Section: 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know Act****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

- SARA 311/312 Hazards** : Fire Hazard
Acute Health Hazard
- SARA 302** : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
- SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :**TOXIC SUBSTANCES CONTROL ACT (TSCA)**

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

AUSTRALIA

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

CHINA

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

EUROPE

The substance(s) in this preparation are included in or exempted from the EINECS or ELINCS inventories

JAPAN

This product contains substance(s) which are not in compliance with the Law Regulating the Manufacture and Importation Of Chemical Substances and are not listed on the Existing and New Chemical Substances list (ENCS).

KOREA

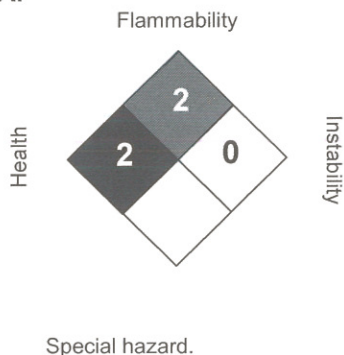
All substances in this product comply with the Toxic Chemical Control Law (TCCL) and are listed on the Existing Chemicals List (ECL)

NEW ZEALAND

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

PHILIPPINES

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

Section: 16. OTHER INFORMATION**NFPA:****HMIS III:**

HEALTH	2
FLAMMABILITY	2
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 03/06/2015
Version Number : 1.0
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

For additional copies of an MSDS visit www.nalco.com and request access.

EC5210A FUEL ANTIOXIDANT

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : EC5210A FUEL ANTIOXIDANT

Other means of identification : Not applicable.

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company :

Nalco Argentina S.R.L., -Victoria Ocampo, 360 Piso 3° - Capital Federal, Buenos Aires, Argentina, C1107AAP, (54) 11 5166-2566
 Ecolab Química Ltda, Rod. Indio Tibirica, 3201 - Bairro do Raffo, Suzano, SP, Brazil, 08655-000, (11) 4745-4700
 Nalco Industrial Services Chile Ltda., Avenida Las Esteras Norte 2341, Quilicura, Santiago, Chile
 Nalco de Colombia Ltda., Calle 18 # 35 - 280, Soledad, Atlantico, Colombia, (57) 5 - 3748887 Ext: 110
 Nalco de México S. de R.L. de C.V., Km 52.5 Carretera México-Toluca, Lerma, Edo. México, Mexico, 52000, (728) 285-0522

Emergency telephone number :

Argentina: Ciquime 0800-222-2933/ 011 4613-1100; Nalco 011-15-5409-6868.
 Brazil: ABIQUIM/PROQUÍMICA: 0800-118270;
 Colombia, Bogotá: 288-6012 (24 hours)
 Colombia, Fuera de Bogotá: 01 800 09 16012 (24 hours)
 Chile: CITUC (56-2) 2635-3800 (24 hours), Nalco (56-2) 2640-2000 / Fax (56-2) 2624-1908
 Mexico SETIQ-ANIQ: 01-800-002-1400 & 01-55-5559-1588 (24 hours)
 USA: 703-527-3887 (Chemtrec, accepts calls by collect - 24 hours)
 Uruguay: 703-527-3887 (Chemtrec, accepts calls by collect - 24 hours); CIQUIME 54-11-46112007

Issuing date : 18.01.2017

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity - oral : Category 3
 Acute toxicity - skin : Category 3
 Skin corrosion/irritation : Category 1C
 Serious eye damage/eye irritation : Category 1
 Skin sensitization : Category 1
 Chronic aquatic toxicity : Category 1

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : Toxic if swallowed.
 Toxic in contact with skin.
 Causes severe skin burns and eye damage.
 Causes serious eye damage.
 May cause an allergic skin reaction.
 Very toxic to aquatic life with long lasting effects.

SAFETY DATA SHEET

EC5210A FUEL ANTIOXIDANT

Precautionary Statements : **Prevention:**
Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Do not take internally. Do not eat, drink or smoke when using this product. Keep away from food. Wash hands before eating. Do not inhale. Use only outdoors or in a well-ventilated area. Do not breathe dust/fume/gas/mist/vapours/spray. No smoking. Wear protective gloves/ protective clothing. Contaminated work clothing should not be allowed out of the workplace. Discard contaminated clothing or wash before reuse. Eye wash station and safety shower are necessary. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Avoid release to the environment. For additional information consult MSDS Section 8.

Response:
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/ physician. Rinse mouth. If conscious, washout mouth and give water to drink. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Treat symptomatically. Call a POISON CENTER or doctor/ physician. IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. Wash with plenty of soap and water. Immediately call a POISON CENTER or doctor/ physician. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician. Collect spillage. IN CASE OF FIRE: for extinction use: Foam Carbon dioxide Dry powder Other extinguishing agent suitable for Class B fires For large fires, use water spray or fog, thoroughly drenching the burning material. Water mist may be used to cool closed containers. For additional information consult MSDS Sections 4, 5 and 6.

Storage:
Store in a well-ventilated place. Keep container tightly closed. Keep the containers closed when not in use. Avoid extremes of temperature. Store in suitable labeled containers. Store separately from acids. Store separately from oxidizers. Avoid contact with SO₂ or acidic bisulfite products, which may react to form visible airborne amine salt particles. For additional information consult MSDS Sections 7 and 10.

Disposal:
Dispose of product, waste product and product packaging should follow the Federal, State, Municipal and local current regulation. Consult the environmental official organ if necessary. The classification of waste should be determined according to Brazilian Normative 10004 "Solid waste - Classification." The transport and disposal should be performed by a properly licensed company. Do not reuse container for any purpose. DO NOT DUMP INTO SEWERS, ON THE SOIL OR INTO ANY WATER COURSE. For additional information consult MSDS Section 13.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Substance

Chemical Name	CAS-No.	Concentration: (%)
N,N'-Di-Sec-Butyl-1,4-Phenylenediamine	101-96-2	60 - 100

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

SAFETY DATA SHEET

EC5210A FUEL ANTIOXIDANT

- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
- If swallowed : Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.
- Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Not flammable or combustible.
- Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) Sulphur oxides Oxides of phosphorus
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Do not flush into surface water or sanitary sewer system.

SAFETY DATA SHEET

EC5210A FUEL ANTIOXIDANT

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Do not ingest. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Conditions for safe storage : Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Mild steel, Stainless Steel 304, Stainless Steel 316L, Aluminum, Hastelloy C-276, HDPE (high density polyethylene), PVC, PTFE, Perfluoroelastomer
- Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Copper, Brass, Natural rubber, Buna-N, Nylon, Polyethylene, Polypropylene, Ethylene propylene, EPDM, Neoprene, Plexiglass, Fluoroelastomer, Chlorosulfonated polyethylene rubber, Polytetrafluoroethylene/polypropylene copolymer

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

- Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

- Eye protection : Safety goggles
Face-shield
- Hand protection : Wear the following personal protective equipment:
Standard glove type.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Skin protection : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing
- Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Liquid
- Colour : Dark red
- Odour : Amine
- Flash point : 143 °C, Method: ASTM D 56, Tag closed cup
- pH : no data available

SAFETY DATA SHEET

EC5210A FUEL ANTIOXIDANT

Odour Threshold	: no data available
Melting point/freezing point	: POUR POINT: -17 °C
Initial boiling point and boiling range	: 128 °C, (1 mm Hg)
Evaporation rate	: no data available
Flammability (solid, gas)	: no data available
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: 1 mm Hg, (128 °C),
Relative vapour density	: no data available
Relative density	: 0,94, (15 °C),
Density	: no data available
Water solubility	: insoluble
Solubility in other solvents	: < 0,1 %
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition temperature	: no data available
Viscosity, dynamic	: no data available
Viscosity, kinematic	: no data available
Molecular weight	: no data available
VOC	: no data available

Section: 10. STABILITY AND REACTIVITY

Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: None known.
Incompatible materials	: Avoid contact with SO ₂ or acidic bisulfite products, which may react to form visible airborne amine salt particles. Contact with strong acids (e.g. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) may generate heat, splattering or boiling and toxic vapors. Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.
Hazardous decomposition products	: Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NO _x) Sulphur oxides Oxides of phosphorus

Section: 11. TOXICOLOGICAL INFORMATION

SAFETY DATA SHEET

EC5210A FUEL ANTIOXIDANT

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes : Causes serious eye damage.

Skin : Toxic in contact with skin. Causes severe skin burns. May cause allergic skin reaction.

Ingestion : Toxic if swallowed. Causes digestive tract burns.

Inhalation : May cause nose, throat, and lung irritation.

Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact : Redness, Pain, Corrosion

Skin contact : Redness, Pain, Irritation, Corrosion, Allergic reactions

Ingestion : Corrosion, Abdominal pain

Inhalation : Respiratory irritation, Cough

Toxicity

Product

Acute oral toxicity : LD50 rat: 271 mg/kg

Acute inhalation toxicity : no data available

Acute dermal toxicity : LD50 rabbit: 2.806 mg/kg

Skin corrosion/irritation : no data available

Serious eye damage/eye irritation : no data available

Respiratory or skin sensitization : no data available

Carcinogenicity : No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive effects : no data available

Germ cell mutagenicity : no data available

Teratogenicity : no data available

STOT - single exposure : no data available

STOT - repeated exposure : no data available

Aspiration toxicity : no data available

Components

Acute inhalation toxicity : N,N'-Di-Sec-Butyl-1,4-Phenylenediamine
LC50 rat: > 0,9 mg/l

Section: 12. ECOLOGICAL INFORMATION

SAFETY DATA SHEET

EC5210A FUEL ANTIOXIDANT

Ecotoxicity

Environmental Effects : Very toxic to aquatic life with long lasting effects.

Product

Toxicity to fish : LC50 Rainbow Trout: 0,13 mg/l
Exposure time: 96 hrs

LC50 Bluegill Sunfish: 0,18 mg/l
Exposure time: 96 hrs

LC50 Fathead Minnow: 0,13 mg/l
Exposure time: 96 hrs

Toxicity to daphnia and other aquatic invertebrates : LC50 Daphnia magna: 1,4 mg/l
Exposure time: 48 hrs

Toxicity to algae : no data available

Persistence and degradability

no data available

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air : <5%
Water : 10 - 30%
Soil : 70 - 90%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

This preparation or material is not expected to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

Disposal methods : Dispose of product, waste product and product packaging should follow the Federal, State, Municipal and local current regulation. Consult the environmental official organ if necessary. The classification of waste should be determined according to Brazilian Normative 10004 "Solid waste - Classification." The transport and disposal should be performed by a properly licensed company. Do not reuse

SAFETY DATA SHEET

EC5210A FUEL ANTIOXIDANT

container for any purpose. DO NOT DUMP INTO SEWERS,
ON THE SOIL OR INTO ANY WATER COURSE.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (ANTT)

Proper shipping name : CORROSIVE LIQUID, TOXIC, N.O.S
Technical name(s) : N,N-DI-SEC-BUTYL-P-PHENYLENEDIAMINE
UN/ID No. : 2922
Transport hazard class(es) : 8, 6.1
Risk Number : 86
Packing group : III

Air transport (IATA)

Proper shipping name : CORROSIVE LIQUID, TOXIC, N.O.S
Technical name(s) : N,N-DI-SEC-BUTYL-P-PHENYLENEDIAMINE
UN/ID No. : UN 2922
Transport hazard class(es) : 8, 6.1
Packing group : III

Sea transport (IMDG/IMO)

Proper shipping name : CORROSIVE LIQUID, TOXIC, N.O.S
Technical name(s) : N,N-DI-SEC-BUTYL-P-PHENYLENEDIAMINE
UN/ID No. : UN 2922
Transport hazard class(es) : 8, 6.1
Packing group : III
Marine pollutant :

Section: 15. REGULATORY INFORMATION

NATIONAL REGULATIONS, BRAZIL

Registrations and Certifications

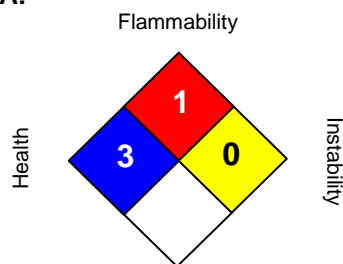
Brazil: Our FISPQ complies with the Brazilian Rule ABNT NBR 14725.

Section: 16. OTHER INFORMATION

SAFETY DATA SHEET

EC5210A FUEL ANTIOXIDANT

NFPA:



Special hazard.

HMIS III:

HEALTH	3*
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 18.01.2017
Version Number : 1.0
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

ATTACHMENT T-7
 Technical Report 1.0
 Item 10b
 Off-site/Third Party Wastes

List of Wastes/Characterization	Volume (gpm) Est. Avg.	Compatibility
1. On-site – INVISTA Longview (captured facility)¹ <ul style="list-style-type: none"> • Domestic wastewater • Process wastewaters • Storm Water 	2 96 Varies	Compatible with Eastman Wastewaters
2. On-site - Eastman Credit Union (captured facility)² <ul style="list-style-type: none"> • Domestic wastewater • Storm Water 	<1 Varies	Compatible with Eastman Wastewaters
3. On-site - Air Liquide Corporation (captured facility)³ <ul style="list-style-type: none"> • Cooling tower blowdown wastewater • Boiler Blowdown wastewater • Domestic wastewater • Storm Water 	100 28 <1 Varies	Compatible with Eastman Wastewaters
4. On-site – Synthomer Adhesive Technologies LLC⁴ (captured facility) <ul style="list-style-type: none"> • Process wastewater • Domestic wastewater • Storm Water 	~1 <1 Varies	Compatible with Eastman Wastewaters
5. On-site - Westlake Longview Corporation⁵ (captured facility) <ul style="list-style-type: none"> • Process wastewater • Domestic wastewater • Storm Water 	175 6 Varies	Compatible with Eastman Wastewaters
6. Off-site - Tyler Terminal – Eastman⁶ Chemical Company, owner <ul style="list-style-type: none"> • Oily water with salts wastewater 	No contributions since 2016	Compatible with Eastman Wastewaters
7. Off-site – Eastman Chemical Company, owner⁷ - Miscellaneous wastewaters from other Eastman Chemical Company off-site operations <ul style="list-style-type: none"> • Process wastewater (organic/inorganic) • Domestic wastewater • Storm Water 	Varies Varies Varies	Compatible with Eastman Wastewaters

Items 1-5, above, are physically located on Eastman Chemical Company (Eastman) owned property. Items 6-7, above, are physically located off-site.

ATTACHMENT T-7
Technical Report 1.0
Item 10b
Off-site/Third Party Wastes

Footnotes:

1. This facility was previously owned by Eastman and then sold to Huntsman Corporation. The facility was sold to Flint Hills Resources, L.P. on August 1, 2007 and is operated by Eastman personnel. Flint Hills Resources, L.P. became Flint Hills Resources Polymers, LLC in November 2010. The facility is now named INVISTA Longview.
2. An Eastman Credit Union facility has been located at this facility since 1979. However, a new banking facility was built at another location on Eastman's property.
3. Air-Liquide Corporation produces synthesis gas (i.e., carbon monoxide, hydrogen and oxygen) for Eastman operational needs. Eastman no longer produces synthesis gas at our closed Synthesis Gas plant.
4. This facility was previously owned by Eastman and sold to Synthomer Adhesives Technologies in 2022.
5. Westlake Longview Corporation, a subsidiary of Westlake Chemical Corporation (Westlake), purchased Eastman facilities on December 1, 2006. Polyethylene Plants 1, 2 & 3 and Epolene Plants 1, 2 & 7 were previously owned by Eastman Ethylene Polymers Company, a subsidiary of Eastman Chemical Company. This plant is operated by Eastman personnel.
6. The Tyler Terminal is a wholly owned subsidiary of Eastman Chemical Company and periodically transports, by truck, oily water with the potential for salts to be in the oily water mixture. Eastman's other process wastewaters have sodium and chloride. These volumes are manageable in Eastman's wastewater system.
7. Eastman may manage organic and inorganic wastewater from other off-site Eastman Chemical Company owned facilities. These wastewaters would have to be compatible with the existing wastewater plant operations and consideration given as to our representations to Texas Commission on Environmental Quality.

Names and Mailing Addresses of Generators Physically Located on Eastman Property:

INVISTA Longview
118 Huntsman Way
Longview, TX 75602

Eastman Credit Union
P.O. Box 7444
Longview, Texas 75607

Air Liquide Corporation
P.O. Box 7817
Longview, Texas 75607

Synthomer Adhesive Technologies, LLC
25435 Harvard Rd

ATTACHMENT T-7
Technical Report 1.0
Item 10b
Off-site/Third Party Wastes

Beachwood, OH 44122

Westlake Longview Corporation

P.O. Box 8388

Longview, Texas 75607

Tyler Terminal (Owner - Eastman Chemical Company)

P.O. Box 2022

Tyler, Texas 75710

Physical Location Address: 2146 NNE Loop 323, Tyler, Texas 75708

Attachment T-8 Contract Laboratory Contact Information
Worksheet 2.0, Item 1.C

a&b Labs
10100 East Freeway Suit 100
Houston, TX 77029
Tel: 713-453-6060

1,2,4,5-Tetrachlorobenzene	Fluorene
1,2,4-Trichlorobenzene	Hexachlorobenzene
1,2-Diphenylhydrazine (as Azobenzene)	Hexachlorobutadiene
1,4 Naphthoquinone	Hexachlorocyclopentadiene
2,4,6-Trichlorophenol	Hexachloroethane
2,4-Dichlorophenol	Indeno(1,2,3-cd)pyrene
2,4-Dimethylphenol	Isophorone
2,4-Dinitrophenol	m- & p-Cresol
2,4-Dinitrotoluene	Naphthalene
2,6-Dinitrotoluene	Nitrobenzene
2-Chloronaphthalene	N-Nitrosodiethylamine
2-Chlorophenol	N-Nitrosodimethylamine
2-Nitrophenol	N-Nitroso-di-n-butylamine
3,3'-Dichlorobenzidine	N-Nitrosodi-n-propylamine
3,4-Benzofluoranthene	N-Nitrosodiphenylamine
4,6-Dinitro-o-cresol	o-Cresol
4-Bromophenyl phenyl ether	Oil and grease
4-Chlorophenyl phenyl ether	p-Chloro-m-cresol
4-Nitrophenol	p-Cresol
Acenaphthene	Pentachlorobenzene
Acenaphthylene	Pentachlorophenol
Anthracene	Phenanthrene
Benzidine	Phenol
Benzo(a)anthracene	Pyrene
Benzo(a)pyrene	Pyridine
Benzo(g,h,i)perylene	2,4,5-Trichlorophenol
Benzo(k)fluoranthene	Ethyl Ether
Benzyl alcohol	Dibenzo(a,h)anthracene
Bis(2-chloroethoxy)methane	Diethyl phthalate
Bis(2-chloroethyl)ether	Dimethyl phthalate
Bis(2-chloroisopropyl)ether	Di-n-Butyl phthalate
Bis(2-ethylhexyl)phthalate	Di-n-octyl phthalate
Butylbenzyl phthalate	Fluoranthene
Chrysene	

SPL
 2600 Dudley Rd
 Kilgore, TX 75662
 903-984-0551

1,1,1-Trichloroethane	Dissolved oxygen	1,2-Trans-dichloroethylene	PCB 1254
1,1,1,2-Tetrachloroethane	<i>E. coli</i> (cfu or MPN/100 mL)	2-Chloroethylvinyl ether	PCB 126
1,1,2-Trichloroethane	Epichlorohydrin	Acrolein	PCB 1260
1,1-Dichloroethene	Ethylbenzene	Aldrin	PCB 169
1,2-Dibromoethane	Ethylene Glycol	butyl acetate	PCB 77
1,2-Dichloroethane	Fluoride	Calcium	PCB 81
1,2-Dichloropropane	Hexane	Chlordane	Potassium
1,3 Butadiene	Lead, total	Chloroethane	Sodium
1,3-Dichloropropene	m-Dichlorobenzene	Cobalt, total	Palladium
4-Methyl 2-Pentanone	Mercury, total	Color (PCU)	Toxaphene
Acetone	Methyl ethyl ketone	Dieldrin	Vanadium
Acetonitrile	Methyl tert-butyl ether (MTBE)	Endosulfan I (alpha)	Zirconium
Acrylonitrile	Nickel, total	Endosulfan II (beta)	4,4'-Isopropylidenediphenol (bisphenol A)
Aluminum, total	Nitrate-Nitrogen Total	Endosulfan sulfate	4,4'-DDD
Ammonia nitrogen	Nitrogen, Total Organic (as N)	Endrin	4,4'-DDE
Antimony, total	Nonylphenol	Endrin aldehyde	4,4'-DDT
Arsenic, total	o-Dichlorobenzene	Ethyl acetate	Abestos
Barium, total	p-Dichlorobenzene	Heptachlor	Dissolved Silicon
Benzene	pH (standard units)*	Heptachlor epoxide	Ethylene glycol monoethyl ether
Beryllium, total	Phosphorus	Heptane	1,2,3,4,6,7,8-HpCDD
Biochemical Oxygen Demand (BOD5)	Selenium, total	Hexachlorocyclohexane (alpha)	1,2,3,7,8-PeCDD
BOD Carbonaceous	Silver, total	Hexachlorocyclohexane (beta)	1,2,3,7,8-PeCDF
Bromodichloromethane	Styrene	Hexachlorocyclohexane (delta)	2,3,4,7,8-HpCDFs
Bromoform	Sulfate	Hexachlorocyclohexane (gamma)	2,3,4,7,8-PeCDF
Cadmium, total	Temperature (°F)*	Iron, total	2,3,7,8-HxCDDs
Carbon disulfide	Tetrachloroethene	Lithium	2,3,7,8-HxCDFs
Carbon tetrachloride	Thallium, total	Nitrate-Nitrite (as N)	2,3,7,8-TCDD
Chemical oxygen demand	Toluene	Molybdenum, total	2,3,7,8-TCDF
Chloride	Total Alkalinity (as CaCO ₃)	Methyl chloride	Acetaldehyde
Chlorobenzene	Total dissolved solids	Methyl bromide	Cesium
Chlorodibromomethane	Total organic carbon	Methanol	Iodine
Chloroform	Total residual chlorine	Magnesium, total	isobutanol
Chromium, hexavalent	Total suspended solids	Manganese, total	Isopropyl alcohol
Chromium, total	Trichloroethene	PCB 1016	Surfactants
Chromium, trivalent	TTHM (Total Trihalomethanes)	PCB 1221	Tert-butanol
Copper, total	Vinyl chloride	PCB 1232	n-butanol
Cyanide, available	Xylenes	PCB 1242	OCDD
Dichloromethane	Zinc, total	PCB 1248	OCDF
			o-phosphate

Eastman Chemical Company
Attachment T-9
Outfalls 001 & 005 Volumes and Percents
Worksheet 1.0, Item 3

Outfalls 001 & 005	Volume MGD	% of Total Flow
Process Wastewaters		
<i>Specific Process Wastewater:</i>		
OCPSF:		
Subpart D	0.31	
Subpart F	1.04	
Subpart G	0.45	
Subpart H	<u>0.02</u>	
Subtotal	1.82	0.82
Cooling Water Returns	63.09	28.52
40 CFR 415, Subpart AW	0.001	0.0003
Other Wastewaters		
Once through cooling waters*** (Maximum ~259 MGD)	155.00	70.07
Low Contamination Potential/ Msc. Process Wastewaters	0.05	0.02
Boiler Blowdowns	0.07	0.03
Utility	1.19	0.54
Total	221.22	100.00

* Flow into reservoir system, but not necessarily discharging to outfalls.

** Also includes metals, process area contaminated rainwater and stormwater & reservoir water supply

*** Estimated circulation rate in Ferguson/Tanyard Reservoirs, not a discharge rate at Outfall 001

**Eastman Chemical Company
Attachment T-10
Outfall 002 Volume & Percent
Worksheet 1.0, Item 3**

Outfall 002	Volume MGD	% of Total Flow
Process Wastewaters		
<i>Specific Process Wastewater:</i>		
Nickel Bearing WW	0.02	0.28
Copper Bearing WW	0.43	6.78
Zinc Bearing WW	0.002	0.03
RKI Incinerator Blowdown	0.12	1.84
FBI Incinerator Blowdown	0.14	2.20
Lagoon 8*	0.24	3.80
Process WW**	3.73	58.25
Subtotal	4.68	73.18
Non-Process Wastewater		
Cooling Tower Blowdown	0.96	14.93
Deionizer Regenerate WW	0.34	5.27
Domestic Wastewater	0.20	3.08
Boiler Blowdowns	0.23	3.54
Subtotal	1.72	26.82
Total	6.40	100.00

*Flow can vary based on ASP needs or needed flow from lagoon.

** Includes Trace Metals

Trace Metals are also present in process wastewater, rainwater and stormwater

Attachment T-11
Worksheet 1.0
OCPSF Manufacturing Data/Appendix A
Section 2.b.

Subcategory	Metal	Process	Metal Bearing Waste Stream Flow, gallons/minute Current
F-Commodity Organic Chemicals	Copper	Acetaldehyde/Oxidation of ethylene with cupric chloride Catalyst (Wacker)	250*
G-Bulk Organic Chemicals	Nickel	n-butanol/Hydrogenation of n butyraldehyde, OXO process	3
G-Bulk Organic Chemicals	Nickel	2-Ethylhexanol/from n-butyraldehyde by Aldol condensation and hydrogenation	3.5
G-Bulk Organic Chemicals	Nickel	Isobutanol/Hydrogenation of isobutyraldehyde, OXO process	2
D-Thermoplastic Resins	Nickel	Petroleum hydrocarbon resins, hydrogenated/hydrogenation of petroleum hydrocarbon resin products	6
H-Specialty Organic Chemicals	Nickel	Neopentyl glycol (2,2-Dimethyl-1,3 propanediol)/Aldol condensation of formaldehyde and isobutyraldehyde and hydrogenation	2
H-Specialty Organic Chemicals	Zinc	Ethyl acetate/Redox reaction (Tschenko) of acetaldehyde	3
<i>* This flow normally contains no copper, but the potential exists for copper to occasionally be present at low parts per million levels.</i>			

Eastman Chemical Company
Attachment 6
Technical Report 1.0, Item 5.b.
Cooling Towers, Boilers, Once Through Waters, Etc.

Product & Product I.D. Number	Product Use ¹	Msc. Information Use (biocide, fungicide, corrosion inhibitor, etc.)	MSDS/SDS		Concentration, mg/l, etc. ⁴	MSDS/SDS Provided	List all CAS number(s) per MSDS	Product Toxicity Data * (mg/L)	Eventual Discharge Location ⁵
			Frequency of Use ²	Classification ³					
Cooling Towers									
Performax DC5506 Cooling Water Treatment	Corrosion Inhibitor	Corrosion Inhibitor	Continuous	No data available	70	y	Trade Secret	96 h LC50 - Oncorhynchus mykiss (rainbow trout), static test: 4060 mg/l, 96 h LC50 - Pimephales promelas (fathead minnow), static test: 4,670 mg/l, 48 h LC50 (Daphnia magna (Water flea)): 1,770 mg/l	002
Millsperse MS7600	Corrosion Inhibitor	Corrosion Inhibitor, polyphosphate	Continuous	No data available	54	y		96 h LC50 - Oncorhynchus mykiss (rainbow trout), static test: 4,631 mg/l, 96 h LC50 - Pimephales promelas (fathead minnow), static test: 3,780 mg/l, 48 h LC50 (Daphnia magna (water flea)) 2316 mg/l, LC50 (Daphnia pulex (water flea)): 1768 mg/l	002
Performax CC6200	Corrosion Inhibitor	Corrosion Inhibitor, admiralty	Continuous	persistent	20	y	64665-57-2	98 h LC50 (Pimephales promelas (fathead minnow)): 159.3 mg/l, 48 h EC50 (Water flea (Ceriodaphnia dubia)): 164.9 mg/l	002
Performax MX2000	Dispersant	High Temp Dispersant	Continuous	No data available	20	y		48 h EC50 (Water flea (Ceriodaphnia dubia)): 3121 mg/l	002
Biosperse CN5500	Biocide	Microbiocide	Intermittent	non-persistent	30	y	111-30-8	LD50 (Rat, male and female): 100 mg/kg, LC50 (Rat): 0.14 mg/l, LD50 (Rabbit): > 2,000 mg/kg	002
Spectrum XD3899	Microbiocide Agent	Microbiocide agent	Intermittent	N/A		y	12124-97-9	96 h LC50 (Lepomis macrochirus (Bluegill sunfish)): > 1,000 mg/l, 96 h LC50 (Oncorhynchus mykiss (rainbow trout)): > 1,000 mg/l, 48 h EC50 (Daphnia magna (Water flea)): > 1,000 mg/l	002
Ameritol HT-1009	Deposit Control Agent		Continuous	No data available	1.5	y	Trade secret	No Data available	002
Ameritol HT-3510	Deposit Control Agent		Continuous	non-persistent	1.5	y	1310-73-2	Gambusia affinis static LC50 = 125 Daphnia Components, 48 hr EC50 = 34.59-47.13	002
Drewphos CPT	Deposit Control Agent		Continuous			y	7601-54-9	Not classified	002
Enviroplus 325	Corrosion Inhibitor		Continuous	non-persistent	5	y	254504001 - (5502, 5754, 5422, 5114, 5281, 8009)	Rainbow, acute and prolonged, static 96 hr LC50 = 137 Fathead, acute and prolonged, static 96 hr LC50 = 616 Cerio acute, static 48 hr LC50 = 177	002
ChemTreat Quadspere CL4830	Corrosion Inhibitor	Cooling Water Treatment	Continuous	non-persistent	5	y	40372-66-5 7320-34-5 1310-58-3 64665-57-2 7778-53-2	Cerio, 48hr, LC50 = 947, 7-day NOEC = 63, 7-day LOEC = 125, 7-day IC25 = 83, D. magna 48hr static LC50 = 3,300 Fathead 96hr LC50 = 1649	002
Boilers (e.g., waste heat & quench, steam drums, etc.)									
Drewphos 2000	Deposition Control	Boiler Water Treatment	Continuous	non-persistent	10	y	1310-73-2, 254504001-5309	Rainbow 96 hr, LC50 = 444 Bluegill 96hr LC50 = 1508 Fathead 96 hr LC50 = 390 Daphnia 48 hr LC50 = 330	001
Drewphos 2600	Deposition Control	Boiler Water Treatment	Continuous	non-persistent	10	y	1310-73-2	Rainbow 96 hr, acute and prolonged static LC50 = 1770 Fathead 96hr, acute and prolonged, static LC50 = 2680	001
Drewphos 3000	Deposition Control	Boiler Water Treatment	Continuous	non-persistent	15	y	1310-73-2,	D. magna 48 hr acute LC50 = 8250 Fathead 96 hr acute LC50 = 8840 Rainbow trout 96 hr acute LC50 = 16,500	001
Amersite CHZ	Corrosion Inhibitor	Corrosion Inhibitor	Continuous	non-persistent	10	y	497-18-7	Rainbow trout 96 hr acute and prolonged, static LC50 = 1,053 Fathead 96 hr acute and prolonged, static LC50 = 149 Cerio 48 hr acute, static LC50 = 110	001
Amersite 2	Corrosion Inhibitor	Corrosion Inhibitor	Continuous	non-persistent	35	y	7681-57-4	Rainbow trout 96 hr acute and prolonged LC50 = 369 Daphnia 48hr acute = 833.9	001
Amersite 11	Corrosion Inhibitor	Corrosion Inhibitor Bid 64 area uses <5 gal. month. Utilities uses continuously	Continuous	non-persistent	20	y	7757-83-7, 1310-73-2, 254504001-5244	Cerio 48 hr static LC50 = 4060 Fathead 48hr static LC50 = 10,800 Fathead 96hr static LC50 = 8400	001
Amersite 61W	Corrosion Inhibitor		Continuous	non-persistent	10	y	254504004-5423	Rainbow trout 96 hr static LC50 > 100,000 Fathead 96 hr static LC50 = 66,000 Daphnia 48hr static LC50 = 6,900	001
Drewgard 2808	Deposition Control	Boiler Water Treatment	Continuous	non-persistent	20	y	7632-00-0, 1310-73-2 254504001-5754	Rainbow 96hr, static LC50 = 1770 Fathead 96hr, static LC50 = 1250	001
Drewgard 315	Deposition Control	Boiler Water Treatment	Continuous	non-persistent	25	y	10102-40-6 64665-57-2 1310-73-2	Gambusia 96 hr static LC50 = 125000 Daphnia 48hr EC50 = 34.59 - 47.13	001

Eastman Chemical Company
Attachment 6
Technical Report 1.0, Item 5.b.
Cooling Towers, Boilers, Once Through Waters, Etc.

Product & Product I.D. Number	Product Use ¹	Msc. Information Use (biocide, fungicide, corrosion inhibitor, etc.)	MSDS/SDS		Concentration, mg/L, etc. ⁴	MSDS/SDS Provided	List all CAS number(s) per MSDS	Product Toxicity Data * (mg/L)	Eventual Discharge Location ⁵
			Frequency of Use ²	Classification ³					
BT5010	Boiler Water Treatment	Boiler Water Treatment	Continuous	non-persistent	100 - 200 ppm	y	1310-73-2	no testing on this product	002
ChemTreat BL153	Deposition Control	Steam Line Treatment	Continuous	non-persistent	10		1336-21-6	Cerio 48hr LC50, 131 Fathead 96 hr LC50, 8.2	002
ChemTreat BL1260	Deposition Control	Boiler Water Treatment	Continuous	non-persistent	5		497-18-7	Cerio 48hr LC50, 159.3 Fathead 96hr LC50, 158.4	002
ChemTreat BL1344	Deposition Control	Boiler Water Treatment	Continuous	non-persistent	5		14860-53-8	Cerio 48hr LC50, 1149	002
Once-Through Water Treatment									
Chlorine Gas	Biocide	Biocide	Continuous	non-persistent	1	y	7782-50-5	D. magna 46 hr acute LC50 = 0.017 Bluegill 96 hr acute LC50 = 0.44 Channel catfish 96 hr acute LC50 = 0.07 Yellow perch 1 hr acute LC50 = 0.88	001
Sodium Hypochlorite 7 - 15%, bleach Petra, Olin and VWR vendors	Biocide	Biocide	Continuous	non-persistent	12	y	7681-52-9	no data	001
Other water treatment chemicals (closed loop, etc.) to Outfall 001 or Outfall 002									
Env. Services Wastewater Treatment									
Zalta MF5264	Flocculant	Flocculant, Dewatering and Clarifiers at ASP	Continuous	non-persistent	30	y	Trade Secret	Daphnia, 48 hrs, acute, EC50>10-100 Mysidopsis bahia 96 hrs, EC50=3.06	002
Amerfloc 490	Flocculant	Flocculant, Dewatering and Clarifiers at ASP	Continuous	non-persistent	100	y	not hazardous*	Danio rerio, acute 96 hr LC50 >10	002
Burst WF7300	Foam Control Agent	Antifoam	Continuous	non-persistent	100	y	not hazardous*	Dephnia magna 48 hrs, acute EC50 >10 Pimephales promelas, 96 h, 3563 Oncorhynchus mykiss, 96 h, >1000 mg/L	002
Ammonium Hydroxide	pH adjustment	WWTP for inlet ammonia, PM 2043	Continuous	non-persistent	20	y	1336-21-6	Fathead 24 hr, acute LC50 = 17 Goldfish 24 hr, acute LC50 = 17 Mosquitofish, 24 hr, acute, LC50 = 18 Catfish 24 hr, acute, LC50 = 2.36 Minnow, 24hr, acute LC50 = 23.02 Daphnia, 25 hr, acute LC50 = 60 Cerio 48 hr, acute, LC50 > 0 Daphnia, 50 hr, acute LC50 = 32 Daphnia, 100 hr, acute LC50 = 20	002
Chlorine	pH adjustment	WWTP, process pH adjustments	Continuous	non-persistent	99	y	7782-505	Oncorhynchus mykiss, 96hr, acute, LC50 = 14 Daphnia, 48hr, acute LC50 = 0.11	002
Sulfuric Acid	Influent pH adjustment	WWTP inlet use	Continuous	non-persistent	30	y	7664-93-9	Bluegill, 48 hr acute, LC50 = 49 Flounder 48 hr acute, LC50 = 100-330	002
Phosphoric Acid Soln 35%	Influent Nutrient Control	WWTP inlet use	Continuous	non-persistent	35	y	7664-38-2	Mosquitofish 96 hr, LC50 = 138	002
Acti-Min Kaolin	Prevent Sludge Cohesion		Continuous	non-persistent	100 lb/hr		1332-58-7 14808-60-7 13463-6-7	Not hazardous	002
Carmeuse - Quicklime	Prevent Sludge Cohesion		Continuous	non-persistent	50 lb/hr	y	1305-788 1309-48-4 14808-60-7	Due to high pH of product there may be some impact on aquatic life if exposed	002
Cellite (diatomaceous earth)	Filters ash		Continuous	non-persistent	NA		68855-54-9 14464-46-1 14808-60-7	Not hazardous	002
EC-1107A	Corrosion Inhibitor		Continuous	non-persistent	10 - 50 ppm		141-43-5 5332-73-0	LC 50 Pimephales promelas (fathead minnow) 96 hr: 1046 mg/l; LC50 Ceriodaphnia dubia 48 hr: 141 mg/l	002
Cat-Floc 8103 Plus	Water Treatment	Deemulsifier	Continuous	non-persistent	40 - 100 ppm	y	not hazardous	LC50 Rainbow Trout 96 hrs: 0.85 mg/l LC50 Inland Silverside 96 hrs: >5000 mg/l LC50 Zebra Danio 96 hrs: 10-100 mg/l LC50 Fathead Minnow 96 hrs: 3.29 mg/l LC50 Daphnia magna 48 hrs: 2.06 mg/l LC 50 Ceriodaphnia dubia 48 hrs: 2.5 mg/l LC 50 Ceriodaphnia dubia 48 hrs: 2.5 mg/l LC50 Daphnia magna 48 hrs (water with DOC): 10-100 mg/l LOEC Ceriodaphnia dubia 7 days: 2.5 mg/l EC50 Ceriodaphnia dubia 7 days: 1.33 mg/l EC25/IC25 Ceriodaphnia dubia 7 days: 0.96 mg/l NOEC Ceriodaphnia dubia 7 days: 1.25 mg/l	002
EC3461A	Antifoulant	Caustic additive	Continuous	non-persistent	50 - 150 ppm	y	107-15-3	no testing on this product	002

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Product & Product I.D. Number	Product Use ¹	Msc. Information Use (biocide, fungicide, corrosion inhibitor, etc.)	MSDS/SDS		Concentration, mg/L, etc. ⁴	MSDS/SDS Provided	List all CAS number(s) per MSDS	Product Toxicity Data * (mg/L)	Eventual Discharge Location ⁵
			Frequency of Use ²	Classification ³					
COMPTRENE® EC3144B	Antifoulant		Continuous	non-persistent	30 - 100 ppm	y	64742-94-5 1330-20-7 112-34-5 91-20-3 100-41-4 95-63-6	no testing on this product	002
EC3332W	Antifoulant		Continuous	non-persistent	20 - 50 ppm	y	64741-44-2 64742-47-8 25322-69-4 61791-00-2	LC50 (Fish) 96 hr: 4.9 to > 1000 mg/l EC50 (Daphnia & Other Aquatic Invertebrates) 48 hr & 72 hr: 105.8 mg/l - > 1000 mg/l EC50 (Algae) 48 hr: > 1000 mg/l Toxicity to Bacteria: > 1000 mg/l	002
EC3011A	Antifoulant		Continuous	non-persistent	5 - 10 ppm	y	100-37-8	LC50 Rainbow Trout 96 hr: > 1000 mg/l LC50 Bluegill Sunfish 96 hr: >1000 mg/l LC50 Fathead Minnow 96 hr: >1000 mg/l LC50 Daphnia Magna 48 hr: >1000 mg/l	002
EC3072A	Antifoulant		Continuous	non-persistent	20 - 50 ppm	y	64742-94-5 141-43-5 91-20-3 71-36-3 95-63-6	no testing on this product	002
EC1044A	Corrosion Inhibitor		Continuous	non-persistent	5 - 20 ppm	y	141-43-5	LC50 Fathead Minnow 96 hr: 125 mg/l; LC50 Daphnia magna 48 hr: 33 mg/l	002
EC5210A	Fuel Antioxidant		Continuous	non-persistent	5 - 20 ppm	y	101-96-2	LC50 Rainbow Trout 96 hr: 0.13 mg/l LC50 Bluegill Sunfish 96 hr: 0.18 mg/l LC50 Fathead Minnow 96 hr: 0.13 mg/l LC50 Daphnia magna 48 hr: 1.4 mg/l	002
Sodium Hydroxide	pH adjustment	Boiler Water Treatment	2x/year	N/A	As needed	Y	1310-73-2	LC50 = 45.4 mg/L (96 hr, Oncorhynchus mykiss) 40.4 mg/L EC50 Ceriodaphnia sp. 48h	002
EC3267A	Antioxidant/antipolymerant	DA-404, 409, 405	intermittent	non-persistent	As needed	y	64742-94-5 3710-84-7 91-20-3 95-63-6	LC50 Oncorhynchus mykiss (rainbow trout): 3.5 mg/l Exposure time: 96 h Diethylhydroxylamine LC50 Pimephales promelas (fathead minnow): > 134 mg/l LC50 Fish: 0.202 mg/l Exposure time: 96 h EC50 Daphnia magna (Water flea): 8.2 mg/l Exposure time: 48 h Daphnia magna (Water flea): 0.5 mg/l Exposure time: 48 h EC50 Pseudokirchneriella subcapitata (algae): > 101 mg/l Exposure time: 72 h Desmodesmus subspicatus (green algae): 0.13 mg/l Exposure time: 72 h	002
EC3269A	Antifoulant	DA-202	intermittent	non-persistent	As needed	y	64742-94-5 91-20-3 95-63-6 647-65-0	LC50 : 3.5 mg/l Exposure time: 96 h LC50 : 0.202 mg/l Exposure time: 96 h	002
EC3205A	Dispersant/antifoulant	GB-201	intermittent	No Data Available	As needed	y	64742-94-5 3710-84-7 95-63-6 91-20-3	LC50 Fish: 1.9 mg/l Exposure time: 96 hr LC50 Crustacean: 1.9 mg/l Exposure time: 48 hrs	002
EC3071A	Pygas stabilizer	Additive only used when sending C4's to tank farm	intermittent	non-persistent	As needed	y	1330-20-7 128-37-0 100-41-4 78-83-1	LC50 Danio rerio (zebra fish): >0.57 mg/l Exposure time: 96 h EC50 Daphnia: 1.81 mg/l Exposure time: 48 h EC50 Daphnia magna (Water flea): 0.48 mg/l Exposure time 48 h	002

* Product toxicity data specific to fish and aquatic invertebrate organisms

¹ biocide, fungicide, corrosion inhibitor, etc.

² 2hrs/day once ever two weeks, every two weeks, daily, etc.

³ non-persistent, persistent, bioaccumulative

⁴ Concentration of whole product in waste stream or concentration of active ingredient in waste stream

⁵ Reservoirs = 001, Outfall 002 = wastewater treatment plant or lagoon system

Abbreviations Used in Toxicity Section Above

concentrations in mg/L

growth = grow

reproduction = repro

survival = surv

Ceriodaphnia dubia = Cerio


Daphnia Magna = D. Magna

Fathead minnow = fathead

mortality = mort

Daphnia Pulex = D. Pulex

Pimephales promelas = P. Promelas

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Performax™ DC5506 COOLING WATER TREATMENT
™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Cooling water treatment


<p>Details of the supplier of the safety data sheet Solenis LLC 2475 Pinnacle Drive Wilmington, DE 19803 United States of America (USA)</p> <p>EHSProductSafetyTeam@solenis.com</p>	<p>Emergency telephone number 1-844-SOLENIS (844-765-3647)</p> <p>Product Information Contact your local Solenis representative</p>
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Corrosive to metals : Category 1


GHS label elements

Hazard pictograms : 

Signal word : Warning

Hazard statements : H290 May be corrosive to metals.

Precautionary statements : **Prevention:**
P234 Keep only in original container.
Response:
P390 Absorb spillage to prevent material damage.
Storage:
P406 Store in corrosive resistant container with a resistant inner

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liner.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture


Components

Chemical name	CAS-No.	Classification	Concentration (%)
PHOSPHONIC ACID DERIVATIVE	Trade Secret	Met. Corr. 1; H290 Acute Tox. 4; H302 Eye Dam. 1; H318	>= 5 - < 10
ORGANIC ACID	Trade Secret	Met. Corr. 1; H290 Eye Irrit. 2A; H319	>= 5 - < 10

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
- In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
If eye irritation persists, consult a specialist.
- If swallowed : Obtain medical attention.
Do NOT induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms : Signs and symptoms of exposure to this material through

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and effects, both acute and delayed

breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Excessive levels of phosphorus can cause low blood calcium, with tetany and convulsions.

Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
Oxides of phosphorus

Specific extinguishing methods : Product is compatible with standard fire-fighting agents.

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.


Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

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SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.
Container hazardous when empty.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Electrical installations / working materials must comply with the technological safety standards.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters


Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
ORGANIC ACID	Trade Secret	TWA (aerosol)	10 mg/m ³	US WEEL

- Engineering measures** : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

- Hand protection
Material : nitrile rubber


- Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

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- Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.
- Skin and body protection : Wear as appropriate:
Impervious clothing
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
- Hygiene measures : Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Colour : light yellow
- Odour : No data available
- Odour Threshold : No data available
- pH : 2.5
Concentration: 1 %
- Melting point/freezing point : No data available
- Boiling point/boiling range : > 212 °F / 100 °C
- Flash point : Not applicable
- Evaporation rate : No data available
- Flammability (solid, gas) : No data available
- Self-ignition : No data available
- Upper explosion limit / Upper flammability limit : No data available
- Lower explosion limit / Lower flammability limit : No data available
- Vapour pressure : 23.3333333 hPa (68 °F / 20 °C)


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Calculated Vapor Pressure

Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	1.22 g/cm ³ (77 °F / 25 °C)
Solubility(ies)		
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Oxidizing properties	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	Product will not undergo hazardous polymerization.
Conditions to avoid	:	temperature extremes Freezing temperatures.
Incompatible materials	:	Alkali metals Alkaline earth metals Oxidizing agents steel strong alkalis
Hazardous decomposition products	:	Carbon monoxide Carbon dioxide (CO ₂) Oxides of phosphorus

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SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Components:

PHOSPHONIC ACID DERIVATIVE:

Acute oral toxicity : LD50 (Rat): 1,878 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 6,000 mg/kg

ORGANIC ACID:

Acute oral toxicity : LD50 (Rat): > 6,500 mg/kg

Acute inhalation toxicity : LC 50 (Rat): > 1,979 mg/m³
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: No adverse effect has been observed in acute inhalation toxicity tests.

Acute dermal toxicity : LD50 (Rat): > 4,000 mg/kg
Assessment: No adverse effect has been observed in acute dermal toxicity tests.
Remarks: Based on similar product.

Skin corrosion/irritation

Not classified based on available information.

Components:

PHOSPHONIC ACID DERIVATIVE:

Result : Slightly irritating to skin

ORGANIC ACID:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Not irritating to skin


Serious eye damage/eye irritation

Not classified based on available information.

Product:

Result : Mildly irritating to eyes

Remarks : Unlikely to cause eye irritation or injury.

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Components:

PHOSPHONIC ACID DERIVATIVE:

Result : Corrosive to eyes

ORGANIC ACID:

Result : Irritating to eyes

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Components:

ORGANIC ACID:

Genotoxicity in vitro : Test Type: Ames test
 Test system: Salmonella typhimurium
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 471
 Result: negative

Test Type: In vitro mammalian cell gene mutation test
 Test system: Chinese hamster lung cells
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 476
 Result: negative
 GLP: yes


Test Type: Chromosome aberration test in vitro
 Test system: Chinese hamster lung cells
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 473
 Result: negative
 GLP: yes

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 4,060 mg/l
Exposure time: 96 h
Test Type: static test


LC50 (Pimephales promelas (fathead minnow)): 4,670 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 1,770 mg/l
Exposure time: 48 h
Test Type: static test

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

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Components:

PHOSPHONIC ACID DERIVATIVE:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 368 mg/l
Exposure time: 96 h

LC50 (Pimephales promelas (fathead minnow)): 868 mg/l
Exposure time: 96 h

ORGANIC ACID:

Toxicity to fish : (Danio rerio (zebra fish)): > 1,042 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
GLP: yes


Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,071 mg/l
Exposure time: 48 h
Test Type: semi-static test
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : (Desmodesmus subspicatus (green algae)): 140 mg/l
End point: EC 50
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

Toxicity to fish (Chronic toxicity) : NOEC (Danio rerio (zebra fish)): > 1,042 mg/l
Exposure time: 14 d
Test Type: semi-static test
Method: OECD Test Guideline 204
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia (water flea)): 104 mg/l
End point: Reproduction Test
Exposure time: 21 d
Test Type: semi-static test
Method: OECD Test Guideline 211
GLP: yes

Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l
Exposure time: 3 h
Test Type: Static
Method: OECD Test Guideline 209
GLP: yes

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Persistence and degradability

Product:

Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days < 200 mg/l

Chemical Oxygen Demand (COD) : 410,500 mg/l
Method: Chemical oxygen demand

Components:

ORGANIC ACID:

Biodegradability : Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

Biodegradation: 17 %
Exposure time: 28 d
Method: OECD Test Guideline 302B

Bioaccumulative potential

Components:

ORGANIC ACID:

Partition coefficient: n-octanol/water : log Pow: -1.36 (77 °F / 25 °C)

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available


SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.

Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.

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Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN number : UN 3265
 Proper shipping name : Corrosive liquid, acidic, organic, n.o.s. (PHOSPHONIC ACID DERIVATIVE)
 Class : 8
 Packing group : III
 Packing instruction (cargo aircraft) : 856
 Packing instruction (passenger aircraft) : 852

IMDG-Code

UN number : UN 3265
 Proper shipping name : CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (PHOSPHONIC ACID DERIVATIVE)
 Class : 8
 Packing group : III
 EmS Code : F-A, S-B
 Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.


National Regulations

49 CFR

UN number : UN 3265
 Proper shipping name : Corrosive liquid, acidic, organic, n.o.s. (PHOSPHONIC ACID DERIVATIVE)
 Class : 8
 Packing group : III
 ERG Code : 153
 Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Corrosive to metals

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

TCSI	: On the inventory, or in compliance with the inventory
TSCA	: All substances listed as active on the TSCA inventory
AIIC	: On the inventory, or in compliance with the inventory
DSL	: This product contains one or more components that are not on the Canadian DSL and have annual quantity limits.
ENCS	: Not in compliance with the inventory
KECI	: Not in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory

TSCA list


No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

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Full text of H-Statements


H290 : May be corrosive to metals.
H302 : Harmful if swallowed.
H318 : Causes serious eye damage.
H319 : Causes serious eye irritation.

Full text of other abbreviations

Acute Tox. : Acute toxicity
Eye Dam. : Serious eye damage
Eye Irrit. : Eye irritation
Met. Corr. : Corrosive to metals
US WEEL : USA. Workplace Environmental Exposure Levels (WEEL)
US WEEL / TWA : 8-hr TWA

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

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Key literature references and sources of data


SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Millspers[™] MS7600 CORROSION INHIBITOR
[™] Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Industrial chemical

Details of the supplier of the safety data sheet Solenis LLC 2475 Pinnacle Drive Wilmington, DE 19803 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

GHS label elements

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS


Substance / Mixture : Mixture

Components

No hazardous ingredients

SECTION 4. FIRST AID MEASURES

General advice : No hazards which require special first aid measures.

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- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
- In case of eye contact : Remove contact lenses.
Protect unharmed eye.
- If swallowed : Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : No symptoms known or expected.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO₂)
Dry chemical
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Oxides of phosphorus
Sodium oxides

Oxides of phosphorus
Sodium oxides
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Standard procedure for chemical fires.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

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- Personal precautions, protective equipment and emergency procedures : Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Smoking, eating and drinking should be prohibited in the application area. For personal protection see section 8.
- Conditions for safe storage : Electrical installations / working materials must comply with the technological safety standards.
- Materials to avoid : No materials to be especially mentioned.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION


Components with workplace control parameters

Contains no substances with occupational exposure limit values.

- Engineering measures** : General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

- Respiratory protection : No personal respiratory protective equipment normally required.
- Hand protection
Material : nitrile rubber
- Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.
- Skin and body protection : Wear as appropriate:

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Safety shoes
Wear resistant gloves (consult your safety equipment supplier).

Hygiene measures : General industrial hygiene practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : clear, colourless

Odour : No data available

Odour Threshold : No data available

pH : 5.6

Melting point/freezing point : No data available

Boiling point/boiling range : 212 °F / 100 °C
(1,013.333333 hPa)
Calculated Phase Transition Liquid/Gas

Flash point : does not flash

Evaporation rate : > 1
Ethyl Ether

Flammability (solid, gas) : No data available

Self-ignition : No data available

Upper explosion limit / Upper flammability limit : No data available


Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : 23.3333333 hPa (68 °F / 20 °C)
Calculated Vapor Pressure

Relative vapour density : > 1
AIR=1

Relative density : No data available

Density : 1.300 g/cm³ (77.00 °F / 25.00 °C)

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Solubility(ies)
 Water solubility : No data available

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Decomposition temperature : No data available

Viscosity
 Viscosity, dynamic : < 100 cps (77 °F / 25 °C)
 Viscosity, kinematic : No data available

Oxidizing properties : No data available

Particle size : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

Conditions to avoid : excessive heat
Exposure to moisture

Incompatible materials : Strong oxidizing agents

Hazardous decomposition products : Oxides of phosphorus
Sodium oxides

Hazardous decomposition products : Oxides of phosphorus
Sodium oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity


Not classified based on available information.

Skin corrosion/irritation

Not classified based on available information.

Serious eye damage/eye irritation

Not classified based on available information.

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Product:

Remarks : Unlikely to cause eye irritation or injury.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.


Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

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SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 4,631 mg/l
Exposure time: 96 h
Test Type: static test
- LC50 (Pimephales promelas (fathead minnow)): 3,780 mg/l
Exposure time: 96 h
Test Type: static test
- Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 2,316 mg/l
Exposure time: 48 h
Test Type: static test
- LC50 (Daphnia pulex (Water flea)): 1,768 mg/l
Exposure time: 48 h
Test Type: static test

Ecotoxicology Assessment

- Acute aquatic toxicity : Not classified based on available information.
- Chronic aquatic toxicity : Not classified based on available information.

Persistence and degradability

Product:

- Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days
7.5 mg/l
- Chemical Oxygen Demand (COD) : 8.0 mg/l
Method: Chemical oxygen demand

Bioaccumulative potential

No data available


Mobility in soil

No data available

Other adverse effects

Product:

- Additional ecological information : No data available

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SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

Not regulated as a dangerous good

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity


This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

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California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.


No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

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Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet


Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports


The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any

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other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Performax™ CC6200 CORROSION INHIBITOR
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Industrial chemical

Details of the supplier of the safety data sheet Solenis LLC 2475 Pinnacle Drive Wilmington, DE 19803 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)


Acute toxicity (Oral) : Category 4
Skin corrosion : Category 1
Serious eye damage : Category 1
Reproductive toxicity : Category 2

GHS label elements

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H361d Suspected of damaging the unborn child.

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Precautionary Statements :

Prevention:

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

- P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
- P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
- P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
- P308 + P313 IF exposed or concerned: Get medical advice/ attention.
- P363 Wash contaminated clothing before reuse.

Storage:

- P405 Store locked up.

Disposal:

- P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.


SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (%)
2-methyl benzyl triazole	64665-57-2	Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318 Repr. 2; H361d	>= 50 - < 60

Actual concentration is withheld as a trade secret


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SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Consult a physician.
Show this material safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : Move to fresh air.
If breathed in, move person into fresh air.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : If on skin, rinse well with water.
Wash contaminated clothing before re-use.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : Get medical attention immediately.
Do NOT induce vomiting.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : No symptoms known or expected.
Harmful if swallowed.
Causes serious eye damage.
Causes severe burns.
Harmful if swallowed.
Causes serious eye damage.
Suspected of damaging the unborn child.
Causes severe burns.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Unsuitable extinguishing media : High volume water jet

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- Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : nitrogen oxides (NOx)
Carbon monoxide
Carbon dioxide (CO2)
hydrogen cyanide in reducing atmospheres
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Ensure adequate ventilation.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapors/dust.
Do not smoke.
Container hazardous when empty.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated

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place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment


Respiratory protection : A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.
Maintain eye wash station in immediate work area.

Skin and body protection : Wear as appropriate:
Impervious clothing
Chemical resistant apron
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).

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Discard gloves that show tears, pinholes, or signs of wear.

Hygiene measures : Wash hands before breaks and at the end of workday.
When using do not eat or drink.
Ensure that eyewash stations and safety showers are close to the workstation location.
When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : clear, amber, red brown

Odor : No data available

Odor Threshold : No data available

pH : 11.5 - 14

Melting point/freezing point : 7 °F / -14 °C

Boiling point/boiling range : ca. 212 °F / 100 °C

Flash point : > 199.99 °F / > 93.33 °C

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Self-ignition : > 932 °F / > 500 °C

Upper explosion limit / Upper flammability limit : No data available


Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : 0.04 hPa (68 °F / 20 °C)

Relative vapor density : > 1
AIR=1

Relative density : 1.187

Density : 1.188 g/cm³

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Solubility(ies)
 Water solubility : completely miscible
 Solubility in other solvents : No data available
 Partition coefficient: n-octanol/water : No data available
 Decomposition temperature : No data available
 Viscosity
 Viscosity, dynamic : No data available
 Viscosity, kinematic : No data available
 Oxidizing properties : No data available
 Particle characteristics
 Particle size : No data available
 Particle Size Distribution : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.
 Chemical stability : Stable under recommended storage conditions.
 Possibility of hazardous reactions : Product will not undergo hazardous polymerization.
 Conditions to avoid : No data available
 Incompatible materials : strong mineral acids
 Strong oxidizing agents
 Hazardous decomposition products : Hydrogen cyanide (hydrocyanic acid)
 Nitrogen oxides (NOx)
 Carbon monoxide
 Carbon dioxide (CO2)


SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if swallowed.

Components:

2-methyl benzyl triazole:

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Acute oral toxicity : LD50 (Rat, female): 735 mg/kg

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Assessment: Not classified as acutely toxic by dermal absorption under GHS.

Skin corrosion/irritation

Causes severe burns.

Product:

Result : Corrosive to skin

Remarks : Causes severe skin burns and eye damage.

Components:

2-methyl benzyl triazole:

Result : Causes burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Result : Corrosive to eyes

Remarks : May cause irreversible eye damage.

Components:

2-methyl benzyl triazole:

Result : Corrosive to eyes

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Product:

Result : Did not cause sensitization on laboratory animals.


Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Suspected of damaging the unborn child.

Components:

2-methyl benzyl triazole:

Reproductive toxicity - Assessment : Some evidence of adverse effects on development, based on animal experiments.

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available


SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 159.3 mg/l
Exposure time: 98 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Water flea (Ceriodaphnia dubia)): 164.9 mg/l
Exposure time: 48 h
Test Type: static test

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Ecotoxicology Assessment

- Acute aquatic toxicity : Not classified based on available information.
- Chronic aquatic toxicity : Chronic aquatic toxicity Category 2; Toxic to aquatic life with long lasting effects.

Components:

2-methyl benzyl triazole:

- Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): > 173 mg/l
Exposure time: 96 h
- LC50 (Oncorhynchus mykiss (rainbow trout)): ca. 25 mg/l
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 280 mg/l
Exposure time: 48 h
- Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 26.2 mg/l
Exposure time: 72 h
Test Type: Growth inhibition
- EbC50 (Pseudokirchneriella subcapitata (green algae)): 32 mg/l
Exposure time: 96 h
Test Type: Growth inhibition
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10 (Daphnia magna (Water flea)): 0.4 mg/l
Exposure time: 21 d
Test Type: semi-static test
Method: OECD Test Guideline 211
Remarks: Information given is based on data obtained from similar substances.

Persistence and degradability


Product:

- Biodegradability : Remarks: Not readily biodegradable.

Components:

2-methyl benzyl triazole:

- Biodegradability : Result: Not readily biodegradable.
Method: OECD Test Guideline 301F

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Bioaccumulative potential

Components:

2-methyl benzyl triazole:

Partition coefficient: n-octanol/water : log Pow: 0.658

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods


- Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.
- Dispose of in accordance with all applicable local, state and federal regulations.
- Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

- UN number : UN 3267
- Proper shipping name : Corrosive liquid, basic, organic, n.o.s. (TRIAZOLE DERIVATIVE)
- Class : 8
- Packing group : II
- Packing instruction (cargo aircraft) : 855
- Packing instruction (passenger aircraft) : 851

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IMDG-Code

UN number : UN 3267
 Proper shipping name : CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (TRIAZOLE DERIVATIVE)
 Class : 8
 Packing group : II
 EmS Code : F-A, S-B
 Marine pollutant : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR

UN number : UN 3267
 Proper shipping name : Corrosive liquid, basic, organic, n.o.s. (TRIAZOLE DERIVATIVE)
 Class : 8
 Packing group : II
 ERG Code : 153
 Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity


This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Acute toxicity (any route of exposure)
 Reproductive toxicity
 Skin corrosion or irritation
 Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

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The ingredients of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory
- NZIOC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

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Full text of H-Statements

- H302 : Harmful if swallowed.
- H314 : Causes severe skin burns and eye damage.
- H318 : Causes serious eye damage.
- H361d : Suspected of damaging the unborn child.

Full text of other abbreviations

- Acute Tox. : Acute toxicity
- Eye Dam. : Serious eye damage
- Repr. : Reproductive toxicity
- Skin Corr. : Skin corrosion

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN -

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Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Material Safety Data Sheet

Key literature references and sources of data


SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Performax™ MX2000 COOLING WATER TREATMENT
™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries

Recommended use of the chemical and restrictions on use

Details of the supplier of the safety data sheet Solenis LLC 2475 Pinnacle Drive Wilmington, DE 19803 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

GHS label elements

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS


Substance / Mixture : Mixture

Components

No hazardous ingredients

SECTION 4. FIRST AID MEASURES

General advice : No hazards which require special first aid measures.

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- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
- In case of eye contact : Remove contact lenses.
Protect unharmed eye.
- If swallowed : Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : No symptoms known or expected.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : No hazardous combustion products are known
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Standard procedure for chemical fires.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and : Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

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- emergency procedures : Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
- Conditions for safe storage : Electrical installations / working materials must comply with the technological safety standards.
- Materials to avoid : No materials to be especially mentioned.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION


Components with workplace control parameters

Contains no substances with occupational exposure limit values.

- Engineering measures** : General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment


- Respiratory protection : No personal respiratory protective equipment normally required.
- Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.
- Skin and body protection : Wear as appropriate:
Safety shoes
Wear resistant gloves (consult your safety equipment supplier).

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Hygiene measures : General industrial hygiene practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: colourless, light yellow
Odour	: mild
Odour Threshold	: No data available
pH	: ca. 2.5
Melting point/freezing point	: 32 °F / -0.00 °C
Boiling point/boiling range	: > 212 °F / 100 °C (1013 hPa)
Flash point	: does not flash
Evaporation rate	: < 1 n-Butyl Acetate
Flammability (solid, gas)	: No data available
Self-ignition	: No data available
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Vapour pressure	: 17.00 mmHg (68.00 °F / 20.00 °C)
Relative vapour density	: < 1 AIR=1
Relative density	: 1.2 (77.00 °F / 25.00 °C)
Density	: 1.2 g/cm ³ (77.0 °F / 25.0 °C)
Solubility(ies)	
Water solubility	: completely soluble
Solubility in other solvents	: No data available

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Partition coefficient: n-octanol/water : No data available

Decomposition temperature : No data available

Viscosity
Viscosity, dynamic : 100 - 300 mPa.s

Viscosity, kinematic : No data available

Oxidizing properties : No data available

Molecular weight : 4,500 g/mol

Particle size : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

Incompatible materials : Strong oxidizing agents

Hazardous decomposition products : Carbon monoxide
Carbon dioxide (CO₂)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Skin corrosion/irritation

Not classified based on available information.

Serious eye damage/eye irritation

Not classified based on available information.


Product:

Remarks : Unlikely to cause eye irritation or injury.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

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Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity


Product:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 3,121 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
GLP: no
Remarks: see user defined free text

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

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Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.


National Regulations

49 CFR

Not regulated as a dangerous good

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.


The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : Not in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory
- NZIOC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

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SECTION 16. OTHER INFORMATION

Further information

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Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative


Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data

SOLENIS Internal data


SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Biosperse™ CN5500 MICROBIOCIDE
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Biocide

Details of the supplier of the safety data sheet Solenis LLC 2475 Pinnacle Drive Wilmington, DE 19803 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity (Oral) : Category 3
Acute toxicity (Inhalation) : Category 2
Skin corrosion : Category 1B
Serious eye damage : Category 1
Respiratory sensitisation : Category 1
Skin sensitisation : Category 1
Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

GHS label elements

Hazard pictograms : 

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Signal word : Danger

Hazard statements : H301 Toxic if swallowed.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H330 Fatal if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.

Precautionary statements : **Prevention:**
P260 Do not breathe mist or vapours.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284 Wear respiratory protection.


Response:
P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/ doctor.
P363 Wash contaminated clothing before reuse.

Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture


Components

Chemical name	CAS-No.	Classification	Concentration (%)
GLUTARALDEHYDE	111-30-8	Acute Tox. 3; H301 Acute Tox. 2; H330 Skin Corr. 1B; H314 Eye Dam. 1; H318 Resp. Sens. 1; H334 Skin Sens. 1A; H317 STOT SE 3; H335	>= 50 - < 60

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Symptoms of poisoning may appear several hours later.
Do not leave the victim unattended.
- If inhaled : Move to fresh air.
Call a physician or poison control centre immediately.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.
- In case of skin contact : Remove contaminated clothing. If irritation develops, get medical attention.
If on skin, rinse well with water.
Wash contaminated clothing before re-use.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : Get medical attention immediately.
Do NOT induce vomiting.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and : Toxic if swallowed.
May cause an allergic skin reaction.

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delayed Causes serious eye damage.
Fatal if inhaled.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause respiratory irritation.
Causes severe burns.
No symptoms known or expected.


Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.
Use personal protective equipment.
Ensure adequate ventilation.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

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Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Advice on safe handling : Avoid formation of aerosol.
Provide sufficient air exchange and/or exhaust in work rooms.
Do not breathe vapours/dust.
Do not smoke.
Container hazardous when empty.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Prevent unauthorized access.
Electrical installations / working materials must comply with the technological safety standards.


Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
GLUTARALDEHYDE	111-30-8	C	0.2 ppm 0.8 mg/m ³	NIOSH REL
		C	0.2 ppm 0.8 mg/m ³	OSHA P0
		C	0.05 ppm	ACGIH

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or

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apparent adverse effects.

Personal protective equipment

Respiratory protection : A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

In the case of vapour formation use a respirator with an approved filter.

Hand protection

Material : Nitrile rubber

Remarks

: Nitrile rubber butyl-rubber
The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection

: Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.
Maintain eye wash station in immediate work area.


Skin and body protection

: Wear as appropriate:
Impervious clothing
Chemical resistant apron
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.

Hygiene measures

: Avoid contact with skin, eyes and clothing.
Wash hands before breaks and immediately after handling the product.
When using do not eat or drink.
Ensure that eyewash stations and safety showers are close to the workstation location.
When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance : Aqueous solution

Colour : yellow, colourless

Odour : characteristic, fruity, pungent

Odour Threshold : No data available

pH : 3.1 - 4.5

Melting point/freezing point : -0.40 - 3 °F / -18 - -16 °C

Boiling point/boiling range : 213.3 °F / 100.7 °C

Flash point : does not flash

Evaporation rate : 1.0
n-Butyl Acetate

Flammability (solid, gas) : No data available

Self-ignition : >
437 °F / 225 °C

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : 0.2 hPa (68 °F / 20 °C)
Method: OECD Test Guideline 104

Relative vapour density : 1.1
(Air = 1.0)

Relative density : 1.129 (68 °F / 20 °C)


Density : ca. 1.129 g/cm³ (68 °F / 20 °C)

Solubility(ies)
Water solubility : completely soluble

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : log Pow: -0.333

Decomposition temperature : No data available

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Viscosity
 Viscosity, dynamic : 15.4 mPa.s (68 °F / 20 °C)
 Method: Brookfield

 Viscosity, kinematic : 20.3 mm²/s (68 °F / 20 °C)

 Oxidizing properties : No data available

 Particle size : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

 Chemical stability : Stable under recommended storage conditions.

 Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

 Conditions to avoid : excessive heat

 Incompatible materials : aluminum
 Amines
 Ammonia
 Carbon steel
 Copper
 Iron
 Mild steel
 Strong acids
 strong alkalis
 Strong oxidizing agents

 Hazardous decomposition products : Carbon monoxide
 Carbon dioxide (CO₂)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity


Toxic if swallowed.
 Fatal if inhaled.

Components:

GLUTARALDEHYDE:

Acute oral toxicity : LD₅₀ (Rat, male and female): 100 mg/kg
 Method: OECD Test Guideline 401

 Acute inhalation toxicity : LC₅₀ (Rat): 0.14 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist

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Method: OECD Test Guideline 403

Assessment: Corrosive to the respiratory tract.

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

Skin corrosion/irritation

Causes severe burns.

Product:

Remarks : May cause skin irritation in susceptible persons.
Causes severe skin burns and eye damage.

Components:

GLUTARALDEHYDE:

Result : Corrosive after 3 minutes to 1 hour of exposure

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Result : Corrosive to eyes

Remarks : May cause irreversible eye damage.

Components:

GLUTARALDEHYDE:

Result : Corrosive to eyes

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Product:


Remarks : May cause allergic skin reaction.

Components:

GLUTARALDEHYDE:

Result : May cause sensitisation by inhalation.

Result : The product is a skin sensitiser, sub-category 1A.

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Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

May cause respiratory irritation.

Components:

GLUTARALDEHYDE:

Assessment : May cause respiratory irritation.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:


Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 24 mg/l

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Exposure time: 96 h
Method: OECD Test Guideline 203

LC50 (Pimephales promelas (fathead minnow)): 10.8 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

LC50 (Lepomis macrochirus (Bluegill sunfish)): 18.8 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

LC50 (Fish): > 10 - 100 mg/l
Exposure time: 96 h
Remarks: Information taken from reference works and the literature.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Invertebrates (Invertebrates)): > 10 - 100 mg/l
Exposure time: 48 h
Remarks: Information taken from reference works and the literature.

Toxicity to algae/aquatic plants : IC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (Bacteria): > 34 mg/l
: IC50 (activated sludge): > 100 mg/l
Method: OECD Test Guideline 209

Ecotoxicology Assessment

Acute aquatic toxicity : Acute aquatic toxicity Category 3; Harmful to aquatic life.

Chronic aquatic toxicity : Chronic aquatic toxicity Category 2; Toxic to aquatic life with long lasting effects.


Components:

GLUTARALDEHYDE:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 13 mg/l
Exposure time: 96 h
Test Type: static test

LC50 (Oncorhynchus mykiss (rainbow trout)): 10 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 14.87 mg/l
Exposure time: 48 h
Test Type: static test

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Toxicity to algae/aquatic plants : NOEC (Desmodesmus subspicatus (green algae)): 0.025 mg/l
End point: Growth inhibition
Exposure time: 72 h
Test Type: static test

EC50 (Desmodesmus subspicatus (green algae)): 0.6 mg/l
End point: Biomass
Exposure time: 72 h
Test Type: static test

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 1.6 mg/l
Exposure time: 97 d
Test Type: flow-through test
Method: OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 5 mg/l
Exposure time: 21 d
Test Type: semi-static test

Persistence and degradability

Product:

Biodegradability : Remarks: Readily biodegradable

Components:

GLUTARALDEHYDE:

Biodegradability : Inoculum: activated sludge
Result: Readily biodegradable.
Biodegradation: 90 - 100 %
Exposure time: 28 d
Method: OECD Test Guideline 301A

Bioaccumulative potential

Components:


GLUTARALDEHYDE:

Partition coefficient: n-octanol/water : log Pow: -0.36 (73 °F / 23 °C)

Mobility in soil

Product:

Distribution among environmental compartments : Medium: Soil
Koc: ca. 120 - 500
Remarks: Highly mobile in soils

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Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR


UN number : UN 2922
Proper shipping name : Corrosive liquid, toxic, n.o.s. (GLUTARALDEHYDE)
Class : 8
Subsidiary risk : 6.1
Packing group : II
Packing instruction (cargo aircraft) : 855
Packing instruction (passenger aircraft) : 851

IMDG-Code

UN number : UN 2922
Proper shipping name : CORROSIVE LIQUID, TOXIC, N.O.S. (GLUTARALDEHYDE)
Class : 8
Subsidiary risk : 6.1
Packing group : II
EmS Code : F-A, S-B
Marine pollutant : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

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National Regulations

49 CFR

UN number	:	UN 2922
Proper shipping name	:	Corrosive liquids, toxic, n.o.s. (GLUTARALDEHYDE)
Class	:	8
Subsidiary risk	:	6.1
Packing group	:	II
ERG Code	:	154
Marine pollutant	:	no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards	:	Acute toxicity (any route of exposure) Respiratory or skin sensitization Skin corrosion or irritation Serious eye damage or eye irritation Specific target organ toxicity (single or repeated exposure)
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SARA 313	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
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California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	Exempt
DSL	:	Exempt
ENCS	:	On the inventory, or in compliance with the inventory

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KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

NZIOC : On the inventory, or in compliance with the inventory

TSCA list

Exempt- This product is exempt from Significant New Use Rule requirements. See information under Biocides for product registration information.”

Exempt-This product is exempt from TSCA 12(b) requirements. See information under Biocides for product registration information.”

Biocides

EPA Reg. # 74655-31

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Danger, Corrosive., Causes irreversible eye damage., Causes skin burns., Harmful if inhaled., May be fatal if swallowed., Harmful if absorbed through skin., Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals., Causes asthmatic signs and symptoms in hyper-reactive individuals., Do not get in eyes, on skin or on clothing., Avoid breathing vapor., Do not swallow.

SECTION 16. OTHER INFORMATION

Further information

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Full text of H-Statements

H301 : Toxic if swallowed.

H314 : Causes severe skin burns and eye damage.

H317 : May cause an allergic skin reaction.


H318 : Causes serious eye damage.

H330 : Fatal if inhaled.

H334 : May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 : May cause respiratory irritation.


Full text of other abbreviations

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Acute Tox.	:	Acute toxicity
Eye Dam.	:	Serious eye damage
Resp. Sens.	:	Respiratory sensitisation
Skin Corr.	:	Skin corrosion
Skin Sens.	:	Skin sensitisation
STOT SE	:	Specific target organ toxicity - single exposure
ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
ACGIH / C	:	Ceiling limit
NIOSH REL / C	:	Ceiling value not be exceeded at any time.
OSHA P0 / C	:	Ceiling limit

AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative


Sources of key data used to compile the Safety Data Sheet
Key literature references and sources of data
SOLENIS Internal data
SOLENIS internal data including own and sponsored test reports

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The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

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Global Chemical Inventory Compliance

The components of this product are reported in the following inventories:

TSCA	On TSCA Inventory
DSL	All components of this product are on the Canadian DSL
AICS	On the inventory, or in compliance with the inventory
ENCS	On the inventory, or in compliance with the inventory
KECI	On the inventory, or in compliance with the inventory
PICCS	On the inventory, or in compliance with the inventory
IECSC	On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

California Proposition 65

Please refer to section 15 of the US Safety Data Sheet (SDS) of this product regarding California Proposition 65(Prop 65). If the US SDS is not available, please contact your local Solenis representative for more information.

Food and Drug Regulations


The compliance status under the individual food additive regulations for the production of paper and paperboard intended to come into contact with food, and any limitations, are listed below.

If compliant, the amount added shall not exceed the addition level required to obtain the intended technical effect. Any 'Specific Migration Limits (SML(s))' and/or 'maximum permitted quantity of the substance in the finished material or article (QM(s))' as provided apply to the final finished article and not to the chemical product as supplied.

Please note, it is the producer's responsibility to conduct their own evaluation of the final finished article in order to confirm its suitability for the intended end use(s), and that it meets all prevailing legislation regulating its application.

US Food and Drug Administration

Citation	Authorization	Limit	Remark
21 CFR 176.170 (Fatty and aqueous food contact) 21 CFR 176.180 (Paper & Paperboard in Contact with Dry Food) 21 CFR 176.300 (Slimicides)	Complies	FCN000730 and FCN000959: a) As a component of a slimicide used in the production of paper and paperboard. For use at levels not to exceed 0.2 gallons per metric ton (= 0,92 kg/ton) of dry weight fiber. b) As an antimicrobial agent for finished coating formulations for paper and for additives to the finished coating	

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		formulations including starch slurries, sizing solutions, pigments, fillers and binders used in the manufacture of paper and paperboard. For use at levels not to exceed 0,0085 gallons/metric ton (= 0,039 kg/ton) of coating formulation., FCN000384: The other component of this antimicrobial system is sodium hypochlorite.	
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Bundesinstitut für Risikobewertung (BfR). Papier und pappen für den Lebensmittelkontakt

Citation	Authorization	Limit	Remark
BfR XXXVI Recommendation. General packaging papers BfR XXXVI/1 Recommendation. Hot and cold filter papers. BfR XXXVI/2 Recommendation. Bakery papers.	Complies	Reaction product with sodium hypochlorite listed at max. 0,02 % as Cl ₂ on dry fiber.	
Hinweise zur Beurteilung von Hygienepapieren	Can be used in compliance with this Guideline	Reaction product with sodium hypochlorite listed at max. 0,02 % as Cl ₂ on dry fiber.	

Europe - FRAMEWORK REGULATION (EC) No 1935/2004 on materials and articles intended to come into contact with food

Citation	Authorization	Limit	Remark
Regulation (EC) No 1935/2004	Complies		Regulation EC No. 1935/2004 lists in Annex 1 groups of materials and articles which may be "covered by specific measures". Paper and board is on this list, but no specifics are available yet on how EC/1935/2004 is to be applied for paper and board. Until this becomes clear, we consider products complying with the specific requirements of e.g. FDA or BfR as complying also with the general requirements in Article 3 of this Regulation.

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Council of Europe resolution AP (2002) 1 on paper and board materials and articles intended to come into contact with foodstuffs.

Citation	Authorization	Limit	Remark
Council of Europe Inventory List of Substances intended for use in the manufacture of food contact paper and board. Council of Europe Guidelines for Paper Kitchen towels and Napkins	Complies	No limit prescribed	

Italia. Allegati al D.M 21.3.1973 - La normativa sui materiali e oggetti a contatto con gli alimenti

Citation	Authorization	Limit	Remark
Allegato II Sezione 4 - Carte e cartoni - General packaging papers	Complies	Maximum dose use: 0.63 g / kg dry fiber. As a component in products biocides in combination with sodium hypochlorite, provided that the paper and paperboard product of the active reaction, measured as Cl ₂ , not detectable limit of 0.250 mg / kg of paper.	

China - Standards for Uses of additive in Food Contact Materials and Articles

Citation	Authorization	Limit	Remark
GB9685 for paper use	Complies	<= 0.092 % trade product on paper	

US TSCA 12(b)

This material does not contain any chemicals subject to the US Toxic Substances Control Act (TSCA) 12(b) export reporting requirements.

US Volatile Organic Compounds (VOC)

VOC	Regulation/Method
0 %	EPA Method 24

Biocides

This is a registered biocidal product and as such must be used in accordance with the product's registration requirements.


Country Name	Registration number
Canada. Pesticide Management Regulatory Agency	28964
US. Federal Insecticide, Fungicide, and Rodenticide Act	8622-64-74655

Country Name	Authorization Type	Product Type	Registration number
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Regulatory Data Sheet

Spectrum™ XD3899 MICROBIOCIDAL AGENT
705496

Norway	Registered with the Norwegian Environment Agency	Product-type 12: Slimicides.	319932
Belgium	Registered with the Federal Public Service of Health, Food Chain Safety and the Environment	Product-type 12: Slimicides.	NOTIF299
Poland	Registered with the Office for Registration of Medicinal Products, Medical Devices and Biocidal Products	Product-type 12: Slimicides.	5431/13
Switzerland	Registered with the Federal Office of Public Health	Product-type 12: Slimicides.	CHZN3304
Croatia	Notified with the Croatian Institute for Toxicology and Antidoping	Product-type 12: Slimicides.	
France	Registered with the Ministry of the Environment (MEDAD)	Product-type 12: Slimicides.	26545
France	Registered with the Institut National de la Recherche et de la Sécurité (INRS)		
Spain	Notified with the Ministry of Health, Social Services and Equality (MSSSI)	Product-type 6: Preservatives for products during storage. Product-type 12: Slimicides.	
Slovenia	Registered with the Ministry of Health	Product-type 12: Slimicides.	
Austria	Notified with the Environment Agency	Product-type 12: Slimicides.	
Czech Republic	Registered with the Ministry of Health	Product-type 12: Slimicides.	
Portugal	Notified with the Directorate-General of Health (DGS) and the National Poisons Centre (CIAV)	Product-type 12: Slimicides.	
Greece	Registered with the Ministry of Agricultural Development and Food	Product-type 12: Slimicides.	120008
Italy	Registered with the National Institute of Health (ISS)	Product-type 12: Slimicides.	
Russian Fed.	Notified with the Department of the Federal service for supervision of consumer rights protection and human welfare in Moscow. Chief state sanitary physician for the city of Moscow.	Product-type 12: Slimicides.	
United Kingdom	Notified with the National Poisons Centre	Product-type 12: Slimicides.	
Bulgaria	Registered with the Ministry of Health	Product-type 12: Slimicides.	1965-2/11.01.2017 r.
Denmark	Notified with the Labour Inspectorate	Product-type 12: Slimicides.	
Turkey	Registered with the T.C. Ministry of Health, Turkish Public Health Center.	Product-type 12: Slimicides.	
Germany	Registered with the Federal Institute for Occupational Safety	Product-type 12: Slimicides.	N-15008

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	and Health (BAuA)		
Slovakia	Registered with the Ministry of Economy of the Slovak Republic	Product-type 12: Slimicides.	bio/313/D/13/1/CCHLP

Heavy metals

This product does not contain any intentionally added metals.

Test results for unintentionally added metals are shown below. This product complies with the following regulations and / or standards.

CONEG Reduction of Toxics in Packaging

The Toy Safety Standards, including ASTM F963 and European Standard EN 71-3.

Metals	Concentration
Aluminium	100 ppb
Cadmium	0.9 ppb
Copper	< 3.1 ppb
Mercury	< 0.082 ng/L
Zinc	10 ppb
antimony	< 5 ppm
Arsenic	< 5 ppm
Barium	< 10 ppm
Chromium	< 5 ppm
Lead	< 5 ppm
selenium	< 5 ppm
Silver	< 1 ppm

Phthalates

Phthalates are not intentionally added to this product. It has not been tested for phthalate impurities.

Ozone Depleting Substances

This product is not known to contain any ozone depleting substances.

Animal-Derived Content

Animal-derived substances are not intentionally added during manufacturing of this product.

Allergens

This product is not known to contain any of the following allergens (Regulation (EU) No 1169/2011): Cereals containing gluten and products thereof; Crustaceans and products thereof, Eggs and products thereof; Fish and products thereof; Peanuts and products thereof; Soybeans and products thereof; Milk and products thereof (including lactose); Nuts and products thereof; Celery and products thereof; Mustard and products thereof; Sesame seeds and products thereof; Sulphur dioxide and sulphites at concentrations of more than 10 ppm (as SO₂); Lupin and products thereof as well as Molluscs and products thereof.

In addition, this product is not known to contain any of the following allergens (Food Allergen Labeling and Consumer Protection Act of 2004): Milk, egg, fish (e.g., bass, flounder, or cod), Crustacean shellfish (e.g., crab, lobster, or shrimp), tree nuts (e.g., almonds, pecans, or walnuts), wheat, peanuts, soybeans, gluten and sesame.

However, this product has not been tested for these substances.

Latex


This product is not known to contain natural rubber latex. However, this product has not been tested for this substance.

Palm Oil and Palm Oil derivatives

These chemicals are not intentionally added during the manufacture of this product.

Preservatives

Preservatives are not intentionally added during manufacturing of this product.

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Alkylphenol Ethoxylates

Alkylphenol ethoxylates and/or other alkylphenol derivatives are not intentionally added during the manufacture of this material.

Alkyl phenol derivatives are defined as substances that upon degradation produce alkyl phenols.

Genetically Modified Organisms (GMO's)

Genetically modified organisms (GMO's) are not intentionally added during the manufacture of this product.

Mineral oil

These chemicals are not intentionally added during the manufacture of this product.

(Definition: Minerals oils as registered with the European Chemical Agency ECHA under REACH)

Endocrine disruptors

These chemicals are not intentionally added during the manufacture of this product.

Carcinogenic, Mutagenic, Reprotoxic (CMR) substances

These chemicals are not intentionally added during the manufacture of this product.

(Definition: CMR substances as being defined by EU regulations No. 1272/2008 (as amended))

Dioxin and Dioxin Precursors

This product contains less than 2 ppt of the following substance:, Tetrachlorodibenzo-p-dioxin (TCDD), Not yet evaluated for Dioxin Precursors.

Complexing agents

These chemicals are not intentionally added during the manufacture of this product.

Aromatic hydrocarbons

These chemicals are not intentionally added during the manufacture of this product.

Halogenated Compounds

The following chemicals are intentionally added during the manufacture of this product:

Inorganic bromine compound

Polybrominatedbiphenyls [PBB] and Polybrominated diphenyl esters [PBDE]

Pentachlorophenol [PCPs], Polychlorinatedbiphenyls [PCBs], Polybrominatedbiphenyls [PBBs], Polybrominated diphenyl esters [PBDEs], Polyhalogenated Dibenzofuran and Polyhalogenated Dibenzodioxin have not intentionally been added during the manufacture of this product.

Brominated Flame Retardants

These chemicals are not intentionally added during the manufacture of this product.

Fluorine containing compounds

These chemicals are not intentionally added during the manufacture of this product.

PFOS / PFOA (Perfluorooctane Sulfonate and Perfluorooctanic Acid)

This product is not known to or expected to contain either Perfluorooctane sulfonic acid (PFOS) and/or Perfluorooctanoic acid (PFOA). However, this product has not been tested for these substances.


Nitrogen containing compounds

The following chemicals are intentionally added during the manufacture of this product:

Ammonium bromide

Phosphorus containing compounds

These chemicals are not intentionally added during the manufacture of this product.

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Organotin Compounds

These chemicals are not intentionally added during the manufacture of this product.

Triclosan, hexachlorocyclohexane isomers (HCH's) & short chained chlorinated paraffins (SCCP's)


These chemicals are not intentionally added during the manufacture of this product.

Bisphenol(s)

No bisphenols (i.e. A, AF, B, C, E, F, G, M, P, PH, S, TMC, Z) have been intentionally added during the manufacture of this product.

Disclaimer

This information is guidance and is given in good faith, with reasonable care, but without warranty. Since skill of application and site conditions are beyond our control, the Customer is responsible for determining whether products and the information in this document are appropriate for the Customer's use. The Customer is responsible for ensuring that the Customer's workplace and disposal practices are in compliance with applicable laws and other governmental enactments. This information is based on the present state of our knowledge and is subject to continuous updates. **NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.**

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Amertrol™ HT3010 deposit inhibitor ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 808045		Version: 1.6

SECTION 1. IDENTIFICATION

Product identifier

Trade name : Amertrol™ HT3010
deposit inhibitor
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Industrial chemical

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) RegulatoryRequestsNA@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

GHS label elements

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).


Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components

Chemical name	CAS-No.	Classification	Concentration (%)
ORGANIC ACID	Trade Secret	Flam. Liq. 4; H227 Acute Tox. 4; H302 Acute Tox. 4; H332 Acute Tox. 3; H311 Skin Corr. 1A; H314 Eye Dam. 1; H318 STOT SE 3; H335	>= 0.1 - < 0.5

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Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

- General advice : No hazards which require special first aid measures.
- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
- In case of eye contact : Remove contact lenses.
Protect unharmed eye.
- If swallowed : Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : No symptoms known or expected.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Standard procedure for chemical fires.
- Special protective equipment : In the event of fire, wear self-contained breathing apparatus.

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for firefighters

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE


- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Smoking, eating and drinking should be prohibited in the application area. For personal protection see section 8.
- Conditions for safe storage : Electrical installations / working materials must comply with the technological safety standards.
- Materials to avoid : No materials to be especially mentioned.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
ORGANIC ACID	Trade Secret	TWA	20 ppm	ACGIH
		TWA	20 ppm 70 mg/m3	NIOSH REL
		TWA	20 ppm 70 mg/m3	OSHA P0

- Engineering measures** : General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.


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Personal protective equipment

- Respiratory protection : No personal respiratory protective equipment normally required.
- Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.
- Skin and body protection : Wear resistant gloves (consult your safety equipment supplier).
Wear as appropriate:
Safety shoes
- Hygiene measures : General industrial hygiene practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Colour : coloured
- Odour : No data available
- Odour Threshold : No data available
- pH : 5.5 - 10.0
- Melting point/freezing point : 32 °F / 0 °C
- Boiling point/boiling range : 208 - 217 °F / 98 - 103 °C
- Flash point : does not flash
- Evaporation rate : No data available
- Flammability (solid, gas) : No data available
- Self-ignition : No data available
- Upper explosion limit / Upper flammability limit : No data available
- Lower explosion limit / Lower flammability limit : No data available
- Vapour pressure : 28 hPa (77 °F / 25 °C)
- Relative vapour density : No data available

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Relative density : No data available

Density : 1.17 - 1.23 g/cm³ (72 °F / 22 °C)

Solubility(ies)

Water solubility : completely miscible

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : 100 - 300 mPa.s (72 °F / 22 °C)

Viscosity, kinematic : No data available

Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

Incompatible materials : Strong oxidizing agents

Hazardous decomposition products : Carbon monoxide
Carbon dioxide (CO₂)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity


Not classified based on available information.

Components:

ORGANIC ACID:

Acute oral toxicity : LD 50 (Rat, male): 1,320 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC 50 (Rat): 4.7 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

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Acute dermal toxicity : LD 50 (Rabbit): 500 - 1,000 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Components:

ORGANIC ACID:

Method : OECD Test Guideline 404
 Result : Corrosive after 3 minutes or less of exposure

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Remarks : Unlikely to cause eye irritation or injury.

Components:

ORGANIC ACID:

Result : Corrosive to eyes

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

ORGANIC ACID:

Test Type : Buehler Test
 Species : Guinea pig
 Method : OECD Test Guideline 406

Germ cell mutagenicity


Not classified based on available information.

Components:

ORGANIC ACID:

Genotoxicity in vitro : Test Type: Ames test
 Method: OECD Test Guideline 471
 Result: negative

Genotoxicity in vivo : Test Type: Mammalian bone marrow sister chromatid exchange
 Species: Rat
 Cell type: Bone marrow

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Method: OECD Test Guideline 475
Result: negative

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

Components:

ORGANIC ACID:

Effects on fertility : Species: Rat
Application Route: Oral
Fertility: NOAEL Mating/Fertility: 400 mg/kg body weight
Symptoms: No effects on fertility, No effects on reproduction parameters
Method: OECD Test Guideline 416

Effects on foetal development : Species: Rabbit
Application Route: Oral
Developmental Toxicity: NOAEL F1: 450 mg/kg body weight
Symptoms: No specific developmental abnormalities
Method: OECD Test Guideline 414

STOT - single exposure

Not classified based on available information.

Components:

ORGANIC ACID:


Exposure routes : Inhalation
Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

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Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

- Toxicity to fish : LC50 (Fathead minnow (*Pimephales promelas*)): > 1,000 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): > 1,000 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : EC50 (calculated) (*Desmodesmus subspicatus*): ca. > 100 mg/l
End point: EC 50
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on similar product.

Ecotoxicology Assessment

- Acute aquatic toxicity : Not classified based on available information.
- Chronic aquatic toxicity : Not classified based on available information.

Components:

ORGANIC ACID:

- Toxicity to fish : LC50 (*Oncorhynchus mykiss* (rainbow trout)): 85 mg/l
Exposure time: 96 h
Test Type: flow-through test
- Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna*): > 130 mg/l
Exposure time: 48 h
Test Type: flow-through test
- Toxicity to algae/aquatic plants : EC50 (*Pseudokirchneriella subcapitata* (green algae)): 20 mg/l
End point: Biomass
Exposure time: 72 h
Test Type: flow-through test
Method: OECD Test Guideline 201
- Toxicity to fish (Chronic) : NOEC (*Danio rerio* (zebra fish)): > 10 mg/l

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toxicity)

Exposure time: 35 d
 Test Type: flow-through test
 Method: OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Water flea (Daphnia magna)): 53 mg/l
 Exposure time: 21 d
 Test Type: flow-through test
 Method: OECD Test Guideline 211

Persistence and degradability**Product:**

Stability in water : Remarks: Hydrolyses slowly.

Components:**ORGANIC ACID:**

Biodegradability : Inoculum: activated sludge
 Result: Readily biodegradable.
 Biodegradation: 87 %
 Exposure time: 28 d

Bioaccumulative potential**Product:**

Bioaccumulation : Remarks: No bioaccumulation is to be expected (log Pow <= 3).

Components:**ORGANIC ACID:**

Bioaccumulation : Bioconcentration factor (BCF): 1.0
 Remarks: Bioaccumulation is unlikely.


Partition coefficient: n-octanol/water : log Pow: 0.93

Mobility in soil

No data available

Other adverse effects**Product:**

Additional ecological information : No data available

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SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

Not regulated as a dangerous good

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
FORMALDEHYDE	50-00-0	100	166666


SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
FORMALDEHYDE	50-00-0	100	166666

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

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SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AICS : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

Revision Date : 06/25/2020

Full text of H-Statements

- H227 : Combustible liquid.
- H302 : Harmful if swallowed.
- H311 : Toxic in contact with skin.
- H314 : Causes severe skin burns and eye damage.
- H318 : Causes serious eye damage.
- H332 : Harmful if inhaled.
- H335 : May cause respiratory irritation.

Full text of other abbreviations

- Acute Tox. : Acute toxicity
- Eye Dam. : Serious eye damage

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Flam. Liq.	: Flammable liquids
Skin Corr.	: Skin corrosion
STOT SE	: Specific target organ toxicity - single exposure
ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	: USA. NIOSH Recommended Exposure Limits
OSHA P0	: USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
ACGIH / TWA	: 8-hour, time-weighted average
NIOSH REL / TWA	: Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
OSHA P0 / TWA	: 8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative


Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data

SOLENIS Internal data


SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Amertrol™ HT1009 deposit inhibitor
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Details of the supplier of the safety data sheet Solenis LLC 2475 Pinnacle Drive Wilmington, DE 19803 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

GHS label elements

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

Other hazards

None known.


SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (%)
PHOSPHATE ACID	Trade Secret	Met. Corr. 1; H290 Skin Corr. 1B; H314 Eye Dam. 1; H318	>= 5 - < 10

Actual concentration is withheld as a trade secret


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SECTION 4. FIRST AID MEASURES

- General advice : No hazards which require special first aid measures.
- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
- In case of eye contact : Remove contact lenses.
Protect unharmed eye.
- If swallowed : Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Pulmonary edema may be delayed.
Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Cough
lung edema (fluid buildup in the lung tissue)
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO₂)
Dry chemical
- Specific hazards during firefighting : If product is heated above its flash point it will produce vapors sufficient to support combustion. Vapors are heavier than air and may travel along the ground and be ignited by heat, pilot lights, other flames and ignition sources at locations near the point of release.
Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Oxides of phosphorus
Carbon monoxide
Carbon dioxide (CO₂)

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- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Standard procedure for chemical fires.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.


SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
- Conditions for safe storage : Electrical installations / working materials must comply with the technological safety standards.
- Materials to avoid : No materials to be especially mentioned.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
PHOSPHATE ACID	Trade Secret	TWA	1 mg/m3	ACGIH
		STEL	3 mg/m3	ACGIH

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		TWA	1 mg/m3	NIOSH REL
		ST	3 mg/m3	NIOSH REL
		TWA	1 mg/m3	OSHA Z-1
		TWA	1 mg/m3	OSHA P0
		STEL	3 mg/m3	OSHA P0

Engineering measures : General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.

Skin and body protection : Wear as appropriate:
Safety shoes
Wear resistant gloves (consult your safety equipment supplier).

Hygiene measures : General industrial hygiene practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : colourless

Odour : No data available


Odour Threshold : No data available

pH : 2.74

Melting point/freezing point : No data available

Boiling point/boiling range : No data available


Flash point : > 212 °F / > 100 °C

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Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Self-ignition	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	1.059 g/cm ³ (73 °F / 23 °C)
Solubility(ies)		
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	2.0 mPa.s (73 °F / 23 °C)
Viscosity, kinematic	:	No data available
Oxidizing properties	:	No data available
Metal corrosion rate	:	Not corrosive to metals

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	Product will not undergo hazardous polymerization.
Conditions to avoid	:	excessive heat Exposure to moisture

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Incompatible materials : Fluorine
Metals
nitromethane
strong alkalis
Strong oxidizing agents
strong reducing agents
Sulphides
sulphites

Hazardous decomposition products : Oxides of phosphorus
Carbon monoxide
Carbon dioxide (CO₂)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Components:

PHOSPHATE ACID:

Acute oral toxicity : LD50 (Rat): ca. 2,600 mg/kg

Acute inhalation toxicity : Remarks: Corrosive to respiratory system.

Acute dermal toxicity : LD50 (Rabbit): 2,740 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Components:

PHOSPHATE ACID:

Result : Causes burns.

Serious eye damage/eye irritation

Not classified based on available information.


Product:

Remarks : Unlikely to cause eye irritation or injury.

Components:

PHOSPHATE ACID:

Result : Corrosive to eyes

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Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:


Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

Persistence and degradability

No data available

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Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

Not regulated as a dangerous good

Special precautions for user


The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ	Calculated product RQ
------------	---------	--------------	-----------------------

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		(lbs)	(lbs)
PHOSPHATE ACID	Trade Secret	5000	95767

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : All components are listed on the inventory, regulatory obligations/restrictions apply
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory

TSCA list


No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

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Full text of H-Statements

H290 : May be corrosive to metals.
H314 : Causes severe skin burns and eye damage.
H318 : Causes serious eye damage.

Full text of other abbreviations

Eye Dam. : Serious eye damage
Met. Corr. : Corrosive to metals
Skin Corr. : Skin corrosion
ACGIH : USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL : USA. NIOSH Recommended Exposure Limits
OSHA P0 : USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA : 8-hour, time-weighted average
ACGIH / STEL : Short-term exposure limit
NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST : STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA P0 / TWA : 8-hour time weighted average
OSHA P0 / STEL : Short-term exposure limit
OSHA Z-1 / TWA : 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-

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Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data


SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

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29 CFR 1910.1200 (OSHA HazCom 2012)

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Trade name : Drewphos™ CPT

™ Trademark, Solenis or its subsidiaries or affiliates,
 registered in various countries

Recommended use of the chemical and restrictions on use

<p>Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America</p> <p>RegulatoryRequestsNA@solenis.com</p>	<p>Emergency telephone number 1-844-SOLENIS (844-765-3647) / 606-329-5705</p> <p>Product Information 1-844-SOLENIS (844-765-3647)</p>
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SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Skin corrosion : Category 1

Serious eye damage : Category 1

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : Causes severe skin burns and eye damage.
 Causes serious eye damage.

Precautionary Statements : **Prevention:**
 Wash skin thoroughly after handling.

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Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

Wash contaminated clothing before reuse.

Storage:

Store locked up.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

Chemical Name	CAS-No.	Classification	Concentration (%)
TRISODIUM PHOSPHATE	7601-54-9	Skin Irrit. 2; H315 Eye Irrit. 2A; H319 STOT SE 3; H335	>= 10.00 - < 15.00

Trade Secret Composition - conceal concentration

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
 Consult a physician.
 Show this safety data sheet to the doctor in attendance.

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Do not leave the victim unattended.

- If inhaled : Move to fresh air.
 If breathed in, move person into fresh air.
 Keep patient warm and at rest.
 If unconscious place in recovery position and seek medical advice.
 If symptoms persist, call a physician.

- In case of skin contact : If on skin, rinse well with water.
 Wash contaminated clothing before re-use.

- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 Continue rinsing eyes during transport to hospital.
 Remove contact lenses.
 Protect unharmed eye.

- If swallowed : Get medical attention immediately.
 Do NOT induce vomiting.
 Rinse mouth with water.
 Do not give milk or alcoholic beverages.
 Never give anything by mouth to an unconscious person.
 If symptoms persist, call a physician.

- Most important symptoms and effects, both acute and delayed : Excessive levels of phosphorus can cause low blood calcium, with tetany and convulsions.
 Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
 stomach or intestinal upset (nausea, vomiting, diarrhea)
 irritation (nose, throat, airways)
 Cough
 lung edema (fluid buildup in the lung tissue)
 Difficulty in breathing
 Causes serious eye damage.
 Causes severe burns.

- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
 Water spray
 Foam

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Carbon dioxide (CO2)
 Dry chemical

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Oxides of phosphorus
 Sodium oxides

Specific extinguishing methods :

Product is compatible with standard fire-fighting agents.

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
 Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Environmental precautions : Prevent product from entering drains.
 Prevent further leakage or spillage if safe to do so.
 If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

Other information : Comply with all applicable federal, state, and local regulations.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Do not breathe vapours/dust.
 When diluting, always add the product to water. Never add water to the product.
 Container hazardous when empty.

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Avoid contact with skin and eyes.
 Smoking, eating and drinking should be prohibited in the application area.
 For personal protection see section 8.
 Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
 Observe label precautions.
 Electrical installations / working materials must comply with the technological safety standards.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
TRISODIUM PHOSPHATE	7601-54-9	STEL	5 mg/m3	WEEL

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.

Skin and body protection : Wear resistant gloves (consult your safety equipment supplier).
 Wear as appropriate:
 impervious clothing
 Chemical resistant apron
 Safety shoes
 Choose body protection according to the amount and concentration of the dangerous substance at the work place.
 Discard gloves that show tears, pinholes, or signs of wear.

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Hygiene measures : Wash hands before breaks and at the end of workday.
 When using do not eat or drink.
 Ensure that eyewash stations and safety showers are close to
 the workstation location.
 When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : liquid

Odour : No data available

Odour Threshold : No data available

pH : > 13

Melting point/freezing point : 32 °F / 0 °C

Boiling point/boiling range : 212 °F / 100 °C
 (1,013.333333 hPa)
 Calculated Phase Transition Liquid/Gas

Flash point : Not applicable

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapour pressure : 23.3333333 hPa (20 °C)
 Calculated Vapor Pressure

Relative vapour density : No data available

Relative density : 1.06

Density : 1.06 g/cm³

Solubility(ies)

 Water solubility : No data available

 Solubility in other solvents : No data available

Partition coefficient: n- : No data available

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octanol/water

Thermal decomposition : No data available

Viscosity

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

 Conditions to avoid : excessive heat
 Exposure to moisture

 Incompatible materials : Avoid contact with:
 aluminum
 Amines
 Ammonia
 magnesium
 Organic materials
 Reducing agents
 strong mineral acids
 This product should not be used in conjunction with trimethylol propane or trimethylol propane-derived products. There is a possibility that bicyclic phosphates or phosphites can be produced as a result of the thermal decomposition of this product in combination with trimethylol propane, trimethylol propane-derived products or their corresponding trimethylol propane alkane homologs. Bicyclic phosphates and phosphites are a class of materials with acute neurotoxic properties which produce characteristic convulsive seizures in test animals.

 Hazardous decomposition products : Chlorine
 Oxides of phosphorus
 Sodium oxides

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SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation
Skin contact
Eye Contact
Ingestion

Acute toxicity

Not classified based on available information.

Components:**TRISODIUM PHOSPHATE:**

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 420

Acute inhalation toxicity : LD 50 (Rat): > 0.83 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: Not classified as acutely toxic by inhalation under GHS.
Remarks: Information given is based on data obtained from similar substances.

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: Not classified as acutely toxic by dermal absorption under GHS.
Remarks: Information given is based on data obtained from similar substances.

Skin corrosion/irritation

Causes severe burns.

Product:

Remarks: Causes severe skin burns and eye damage.

Components:**TRISODIUM PHOSPHATE:**

Result: Irritating to skin

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks: May cause irreversible eye damage.

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Components:

TRISODIUM PHOSPHATE:

Result: Irritating to eyes

Respiratory or skin sensitisation

Skin sensitisation: Not classified based on available information.

Respiratory sensitisation: Not classified based on available information.

Components:

TRISODIUM PHOSPHATE:

Test Type: Local lymph node assay

Species: Mouse

Assessment: Did not cause sensitisation on laboratory animals.

Method: OECD Test Guideline 429

Germ cell mutagenicity

Not classified based on available information.

Components:

TRISODIUM PHOSPHATE:

Genotoxicity in vitro : Test Type: Ames test
 Test species: Salmonella typhimurium
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 471
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

Components:

TRISODIUM PHOSPHATE:

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks: No data available

Carcinogenicity:

IARC No component of this product present at levels greater than or

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equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

TRISODIUM PHOSPHATE:

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
 Exposure time: 96 h
 Test Type: semi-static test
 Method: OECD Test Guideline 203
 Remarks: Information given is based on data obtained from similar substances.

- Toxicity to daphnia and other aquatic invertebrates : EC50 (Water flea (Daphnia magna)): > 100 mg/l
 Exposure time: 48 h
 Test Type: static test
 Method: OECD Test Guideline 202
 Remarks: Information given is based on data obtained from similar substances.

- Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
 End point: Growth inhibition
 Exposure time: 72 h
 Test Type: static test
 Method: OECD Test Guideline 201
 Remarks: Information given is based on data obtained from similar substances.

- NOEC (Desmodesmus subspicatus (green algae)): > 100 mg/l
 End point: Growth inhibition
 Exposure time: 72 h
 Test Type: static test
 Method: OECD Test Guideline 201
 Remarks: Information given is based on data obtained from similar substances.

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similar substances.

Persistence and degradability

Components:

TRISODIUM PHOSPHATE:

Biodegradability : Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulative potential

Components:

No data available

Mobility in soil

Components:

No data available

Other adverse effects

No data available

Product:

Additional ecological information : No data available

Components:

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

General advice : Do not dispose of waste into sewer.
 Do not contaminate ponds, waterways or ditches with chemical or used container.
 Send to a licensed waste management company.
 Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.
 Dispose of as unused product.
 Empty containers should be taken to an approved waste handling site for recycling or disposal.
 Do not re-use empty containers.

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SECTION 14. TRANSPORT INFORMATION

International transport regulations

REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.
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U.S. DOT - ROAD

UN 1719	Caustic alkali liquids, n.o.s. (TRISODIUM PHOSPHATE)	8		III	
---------	--	---	--	-----	--

U.S. DOT - RAIL

UN 1719	Caustic alkali liquids, n.o.s. (TRISODIUM PHOSPHATE)	8		III	
---------	--	---	--	-----	--

U.S. DOT - INLAND WATERWAYS

UN 1719	Caustic alkali liquids, n.o.s. (TRISODIUM PHOSPHATE)	8		III	
---------	--	---	--	-----	--

TRANSPORT CANADA - ROAD

UN 1719	CAUSTIC ALKALI LIQUID, N.O.S. (TRISODIUM PHOSPHATE)	8		III	
---------	---	---	--	-----	--

TRANSPORT CANADA - RAIL

UN 1719	CAUSTIC ALKALI LIQUID, N.O.S. (TRISODIUM PHOSPHATE)	8		III	
---------	---	---	--	-----	--

TRANSPORT CANADA - INLAND WATERWAYS

UN 1719	CAUSTIC ALKALI LIQUID, N.O.S. (TRISODIUM PHOSPHATE)	8		III	
---------	---	---	--	-----	--

INTERNATIONAL MARITIME DANGEROUS GOODS

UN 1719	CAUSTIC ALKALI LIQUID, N.O.S. (TRISODIUM PHOSPHATE)	8		III	
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INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

UN	1719	Caustic alkali liquid, n.o.s. (TRISODIUM PHOSPHATE)	8	III
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INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

UN	1719	Caustic alkali liquid, n.o.s. (TRISODIUM PHOSPHATE)	8	III
----	------	--	---	-----

MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

UN	1719	LIQUIDOS ALCALINOS CAUSTICOS N.E.P. (TRISODIUM PHOSPHATE)	8	III
----	------	---	---	-----

*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID

Marine pollutant	no
------------------	----

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act


CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
TRISODIUM PHOSPHATE	7601-54-9	5000	50000

SARA 311/312 Hazards : Acute Health Hazard

SARA 313 Component(s)SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65 Proposition 65 warnings are not required for this product based on the results of a risk assessment.

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The components of this product are reported in the following inventories:

- TSCA : On TSCA Inventory
- DSL : All components of this product are on the Canadian DSL.
- AUSTR : On the inventory, or in compliance with the inventory
- NZIOC : On the inventory, or in compliance with the inventory
- ENCS : On the inventory, or in compliance with the inventory
- KECL : On the inventory, or in compliance with the inventory
- PHIL : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECL (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

SECTION 16. OTHER INFORMATION

Further information

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Full text of H-Statements referred to under sections 2 and 3.

- H290 May be corrosive to metals.
- H303 May be harmful if swallowed.
- H314 Causes severe skin burns and eye damage.

Further information

Sources of key data used to compile the Safety Data Sheet
Key literature references and sources of data
SOLENIS Internal data
SOLENIS internal data including own and sponsored test reports
The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the

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information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by the Solenis Environmental Health and Safety Department.

List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet :

ACGIH : American Conference of Industrial Hygienists
BEI : Biological Exposure Index
CAS : Chemical Abstracts Service (Division of the American Chemical Society).
CMR : Carcinogenic, Mutagenic or Toxic for Reproduction
FG : Food grade
GHS : Globally Harmonized System of Classification and Labeling of Chemicals.
H-statement : Hazard Statement
IATA : International Air Transport Association.
IATA-DGR : Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO : International Civil Aviation Organization
ICAO-TI (ICAO) : Technical Instructions by the "International Civil Aviation Organization"
IMDG : International Maritime Code for Dangerous Goods
ISO : International Organization for Standardization
logPow : octanol-water partition coefficient
LCxx : Lethal Concentration, for xx percent of test population
LDxx : Lethal Dose, for xx percent of test population.
ICxx : Inhibitory Concentration for xx of a substance
Ecxx : Effective Concentration of xx
N.O.S.: Not Otherwise Specified
OECD : Organization for Economic Co-operation and Development
OEL : Occupational Exposure Limit
P-Statement : Precautionary Statement
PBT : Persistent , Bioaccumulative and Toxic
PPE : Personal Protective Equipment
STEL : Short-term exposure limit
STOT : Specific Target Organ Toxicity
TLV : Threshold Limit Value
TWA : Time-weighted average
vPvB : Very Persistent and Very Bioaccumulative
WEL : Workplace Exposure Level

CERCLA : Comprehensive Environmental Response, Compensation, and Liability Act
DOT : Department of Transportation
FIFRA : Federal Insecticide, Fungicide, and Rodenticide Act
HMIRC : Hazardous Materials Information Review Commission
HMIS : Hazardous Materials Identification System
NFPA : National Fire Protection Association
NIOSH : National Institute for Occupational Safety and Health
OSHA : Occupational Safety and Health Administration
PMRA : Health Canada Pest Management Regulatory Agency
RTK : Right to Know
WHMIS : Workplace Hazardous Materials Information System



BWT-PDS-NA-Drewphos CPT-R3

Drewphos™ CPT boiler water treatment

Product Description

Drewphos™ CPT boiler water treatment is a liquid blend of trisodium phosphate used to maintain proper boiler water chemistry in high pressure steam generating systems. Drewphos CPT should be used primarily in systems requiring equilibrium phosphate treatment, phosphate treatment or phosphate continuum treatment programs (EPT, PT or CPT). As a liquid product, it is easy to feed and provides enhanced control as compared to dry powder phosphates. Drewphos CPT yields a specific Na:PO₄ molar ratio thus offering more precise control over the critical ratio needed to maintain proper boiler water chemistry while minimizing the potential for free caustic corrosion.

Product Application

Drewphos CPT should be fed continuously either neat or as a dilute solution directly to the boiler. This product should not be fed to the preboiler section. Demineralized water or condensate should be used when preparing dilute solutions. This product may be fed along with most other boiler water treatment chemicals.

Testing and Control

Proper dosage is regulated through orthophosphate residual and pH monitoring. The dosage and specific residual requirements are dependent upon feedwater analyses as well as boiler operating conditions. Your Solenis representative can supply specific information regarding the product control range applicable for your plant.

Packaging

This product is available in a variety of packaging sizes. Your Solenis representative will recommend the appropriate packaging for the application.

Important Information


Typical Properties: Refer to the Safety Data Sheet (SDS).

Regulatory Information: Refer to the SDS or contact your sales representative for any additional regulatory and environmental information.

Safety: Solenis maintains an SDS for all of its products. Use the health and safety information contained in the SDS to develop appropriate product handling procedures to protect your employees and customers.

Our SDS should be read and understood by all of your supervisory personnel and employees before using Solenis products in your facilities.

Features	Advantages
<ul style="list-style-type: none"> • Preblended sodium:phosphate ratio 	<ul style="list-style-type: none"> • Caustic corrosion minimized • Captive alkalinity promoted • Good for EPT, PT and CPT programs
<ul style="list-style-type: none"> • FDA acceptable testing and control 	<ul style="list-style-type: none"> • Benefits extend to FDA-regulated plant or hosts

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Enviroplus™ 325 CORROSION INHIBITOR
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)


Corrosive to metals : Category 1
Skin corrosion : Category 1
Serious eye damage : Category 1
Skin sensitisation : Category 1
Reproductive toxicity : Category 1B

GHS label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H360 May damage fertility or the unborn child.

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Precautionary statements :

Prevention:

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P234 Keep only in original container.
- P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
- P264 Wash skin thoroughly after handling.
- P272 Contaminated work clothing must not be allowed out of the workplace.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

- P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
- P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
- P308 + P313 IF exposed or concerned: Get medical advice/ attention.
- P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
- P363 Wash contaminated clothing before reuse.
- P390 Absorb spillage to prevent material damage.

Storage:

- P405 Store locked up.
- P406 Store in corrosive resistant container with a resistant inner liner.

Disposal:

- P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards


None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (%)
INORGANIC SALT	Trade Secret	Met. Corr. 1; H290 Skin Corr. 1; H314	>= 5 - < 10

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		Eye Dam. 1; H318 STOT SE 3; H335	
INORGANIC SALT	Trade Secret	Eye Irrit. 2A; H319 Repr. 1B; H360	>= 5 - < 10
TRIAZOLE DERIVATIVE	Trade Secret	Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318	>= 1.5 - < 5
ORGANIC SALT	Trade Secret	Skin Irrit. 2; H315 Eye Irrit. 2A; H319	>= 1.5 - < 5
CORROSION/SCALE INHIBITOR	Trade Secret	Skin Sens. 1; H317	>= 1 - < 1.5
THIAZOLE COMPOUND	Trade Secret	Met. Corr. 1; H290 Skin Corr. 1C; H314 Eye Dam. 1; H318 Skin Sens. 1; H317	>= 0.5 - < 1

INORGANIC SALT	Trade Secret	Met. Corr. 1; H290 Skin Corr. 1; H314 Eye Dam. 1; H318 STOT SE 3; H335	>= 5 - < 10
INORGANIC SALT	Trade Secret	Eye Irrit. 2A; H319 Repr. 1B; H360	>= 5 - < 10
TRIAZOLE DERIVATIVE	Trade Secret	Acute Tox. 4; H302 Skin Corr. 1B; H314 Eye Dam. 1; H318	>= 1.5 - < 5
ORGANIC SALT	Trade Secret	Skin Irrit. 2; H315 Eye Irrit. 2A; H319	>= 1.5 - < 5
CORROSION/SCALE INHIBITOR	Trade Secret	Skin Sens. 1; H317	>= 1 - < 1.5
THIAZOLE COMPOUND	Trade Secret	Met. Corr. 1; H290 Skin Corr. 1C; H314 Eye Dam. 1; H318 Skin Sens. 1; H317	>= 0.5 - < 1

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.

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- Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : Move to fresh air.
If breathed in, move person into fresh air.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : Remove contaminated clothing. If irritation develops, get medical attention.
If on skin, rinse well with water.
Wash contaminated clothing before re-use.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : Get medical attention immediately.
Do NOT induce vomiting.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Nose bleeding
hair loss
May cause an allergic skin reaction.
Causes serious eye damage.
May damage fertility or the unborn child.
Causes severe burns.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical

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- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon oxides
Nitrogen oxides (NOx)
potassium oxide
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Ensure adequate ventilation.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.
Do not smoke.
When diluting, always add the product to water. Never add water to the product.
Container hazardous when empty.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.

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Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION


Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
INORGANIC SALT	Trade Secret	TWA	5 mg/m3	NIOSH REL
		TWA	10 mg/m3	OSHA P0
		TWA (Inhalable particulate matter)	2 mg/m3 (Borate)	ACGIH
		STEL (Inhalable particulate matter)	6 mg/m3 (Borate)	ACGIH

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Respiratory protection : A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not

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provide adequate protection.

Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.
Maintain eye wash station in immediate work area.

Skin and body protection : Wear as appropriate:
Impervious clothing
Chemical resistant apron
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.

Hygiene measures : Wash hands before breaks and at the end of workday.
When using do not eat or drink.
Ensure that eyewash stations and safety showers are close to the workstation location.
When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : dark amber

Odour :


No data available

Odour Threshold : No data available

pH : 12.5

Melting point/freezing point : 45.99 °F / 7.77 °C


Boiling point/boiling range : 212 °F / 100 °C
(1,013.333333 hPa)
Calculated Phase Transition Liquid/Gas

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- Flash point : Not applicable
- Evaporation rate : > 1
Ethyl Ether
- Flammability (solid, gas) : No data available
- Self-ignition : No data available
- Upper explosion limit / Upper flammability limit : No data available
- Lower explosion limit / Lower flammability limit : No data available
- Vapour pressure : 32 hPa (77 °F / 25 °C)
Calculated Vapor Pressure
- Relative vapour density : No data available
- Relative density : No data available
- Density : 1.24 g/cm³ (77 °F / 25 °C)
- Solubility(ies)
 - Water solubility : completely soluble
 - Solubility in other solvents : No data available
- Partition coefficient: n-octanol/water : No data available
- Decomposition temperature : No data available
- Viscosity
 - Viscosity, dynamic : No data available
 - Viscosity, kinematic : No data available
- Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

- Reactivity : No decomposition if stored and applied as directed.
- Chemical stability : Stable under recommended storage conditions.
- Possibility of hazardous reactions : Product will not undergo hazardous polymerization.
- Conditions to avoid : temperature extremes
Freezing temperatures.

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Incompatible materials : Alkali metals
 Alkaline earth metals
 metal hydrides
 metal salts
 Strong acids
 Strong oxidizing agents
 strong reducing agents

Hazardous decomposition products : Carbon oxides
 Nitrogen oxides (NOx)
 potassium oxide
 Oxides of phosphorus

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Components:

INORGANIC SALT:

Acute oral toxicity : LD50 (Rat, female): > 5,000 mg/kg
 Method: OPPTS 870.1100
 Assessment: No adverse effect has been observed in acute oral toxicity tests.


Acute inhalation toxicity : LC50 (Rat, male and female): > 2.06 mg/l
 Exposure time: 4 h
 Test atmosphere: vapour
 Method: OPPTS 870.1300
 GLP: yes
 Assessment: No adverse effect has been observed in acute inhalation toxicity tests.

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
 Method: OECD Test Guideline 402
 GLP: yes
 Assessment: No adverse effect has been observed in acute dermal toxicity tests.

INORGANIC SALT:

Acute oral toxicity : LD50 (Rat): 4,500 - 5,000 mg/kg

Acute inhalation toxicity : LC 50 (Rat): > 2 mg/l
 Test atmosphere: dust/mist
 Assessment: Not classified as acutely toxic by inhalation under GHS.
 Remarks: see user defined free text

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Acute dermal toxicity : LD50 (Rabbit): > 10,000 mg/kg

TRIAZOLE DERIVATIVE:

Acute oral toxicity : LD50 (Rat, male): 930 mg/kg
 Remarks: Information given is based on data obtained from similar substances.

LD50 (Rat): 675 mg/kg
 Remarks: Information given is based on data obtained from similar substances.

LD50 (Rat, female): 735 mg/kg
 Remarks: Information given is based on data obtained from similar substances.

Acute dermal toxicity : LD (Rabbit): > 4,000 mg/kg
 Remarks: Information given is based on data obtained from similar substances.

CORROSION/SCALE INHIBITOR:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
 Assessment: No adverse effect has been observed in acute oral toxicity tests.

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
 Assessment: No adverse effect has been observed in acute dermal toxicity tests.

THIAZOLE COMPOUND:

Acute oral toxicity : LD50 (Rat): 2,100 mg/kg


Acute inhalation toxicity : LC 50 (Rat): > 6.5 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 7,940 mg/kg

INORGANIC SALT:

Acute oral toxicity : LD50 (Rat, female): > 5,000 mg/kg
 Method: OPPTS 870.1100
 Assessment: No adverse effect has been observed in acute oral toxicity tests.

Acute inhalation toxicity : LC50 (Rat, male and female): > 2.06 mg/l
 Exposure time: 4 h
 Test atmosphere: vapour
 Method: OPPTS 870.1300
 GLP: yes
 Assessment: No adverse effect has been observed in acute inhalation toxicity tests.

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Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
 Method: OECD Test Guideline 402
 GLP: yes
 Assessment: No adverse effect has been observed in acute dermal toxicity tests.

INORGANIC SALT:

Acute oral toxicity : LD50 (Rat): 4,500 - 5,000 mg/kg

Acute inhalation toxicity : LC 50 (Rat): > 2 mg/l
 Test atmosphere: dust/mist
 Assessment: Not classified as acutely toxic by inhalation under GHS.
 Remarks: see user defined free text

Acute dermal toxicity : LD50 (Rabbit): > 10,000 mg/kg

TRIAZOLE DERIVATIVE:

Acute oral toxicity : LD50 (Rat, male): 930 mg/kg
 Remarks: Information given is based on data obtained from similar substances.

LD50 (Rat): 675 mg/kg
 Remarks: Information given is based on data obtained from similar substances.

LD50 (Rat, female): 735 mg/kg
 Remarks: Information given is based on data obtained from similar substances.

Acute dermal toxicity : LD (Rabbit): > 4,000 mg/kg
 Remarks: Information given is based on data obtained from similar substances.

CORROSION/SCALE INHIBITOR:


Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
 Assessment: No adverse effect has been observed in acute oral toxicity tests.

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
 Assessment: No adverse effect has been observed in acute dermal toxicity tests.

THIAZOLE COMPOUND:

Acute oral toxicity : LD50 (Rat): 2,100 mg/kg

Acute inhalation toxicity : LC 50 (Rat): > 6.5 mg/l
 Exposure time: 4 h
 Test atmosphere: dust/mist

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Acute dermal toxicity : LD50 (Rabbit): > 7,940 mg/kg

Skin corrosion/irritation

Causes severe burns.

Product:

Remarks : May cause skin irritation in susceptible persons.
Causes severe skin burns and eye damage.

Components:

INORGANIC SALT:

Species : Rabbit
 Method : OECD Test Guideline 404
 Result : Corrosive to skin
 GLP : yes

INORGANIC SALT:

Result : Not irritating to skin

TRIAZOLE DERIVATIVE:

Species : Rabbit
 Result : Corrosive after 3 minutes to 1 hour of exposure
 Remarks : Information given is based on data obtained from similar substances.

ORGANIC SALT:

Result : Irritating to skin

CORROSION/SCALE INHIBITOR:

Result : Slightly irritating to skin

THIAZOLE COMPOUND:

Species : Rabbit
 Result : Corrosive after 1 to 4 hours of exposure

INORGANIC SALT:

Species : Rabbit
 Method : OECD Test Guideline 404
 Result : Corrosive to skin
 GLP : yes

INORGANIC SALT:

Result : Not irritating to skin

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TRIAZOLE DERIVATIVE:

Species : Rabbit
Result : Corrosive after 3 minutes to 1 hour of exposure
Remarks : Information given is based on data obtained from similar substances.

ORGANIC SALT:

Result : Irritating to skin

CORROSION/SCALE INHIBITOR:

Result : Slightly irritating to skin

THIAZOLE COMPOUND:

Species : Rabbit
Result : Corrosive after 1 to 4 hours of exposure

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks : May cause irreversible eye damage.

Components:**INORGANIC SALT:**

Species : Rabbit
Result : Corrosive to eyes

INORGANIC SALT:

Result : Irritating to eyes

TRIAZOLE DERIVATIVE:

Species : Rabbit
Remarks : Information given is based on data obtained from similar substances.

ORGANIC SALT:


Result : Irritating to eyes

CORROSION/SCALE INHIBITOR:

Result : Slightly irritating to eyes

THIAZOLE COMPOUND:

Species : Rabbit
Result : Corrosive to eyes

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INORGANIC SALT:

Species : Rabbit
Result : Corrosive to eyes

INORGANIC SALT:

Result : Irritating to eyes

TRIAZOLE DERIVATIVE:

Species : Rabbit
Remarks : Information given is based on data obtained from similar substances.

ORGANIC SALT:

Result : Irritating to eyes

CORROSION/SCALE INHIBITOR:

Result : Slightly irritating to eyes

THIAZOLE COMPOUND:

Species : Rabbit
Result : Corrosive to eyes

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Product:

Remarks : May cause allergic skin reaction.


Components:

INORGANIC SALT:

Test Type : Buehler Test
Species : Guinea pig
Method : OPPTS 870.2600
GLP : yes

TRIAZOLE DERIVATIVE:

Species : Guinea pig
Remarks : Information given is based on data obtained from similar substances.

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CORROSION/SCALE INHIBITOR:

Species : Guinea pig
Method : Maximisation Test

THIAZOLE COMPOUND:

Test Type : Maximisation Test
Species : Guinea pig
Method : OECD Test Guideline 406
Remarks : Information given is based on data obtained from similar substances.

INORGANIC SALT:

Test Type : Buehler Test
Species : Guinea pig
Method : OPPTS 870.2600
GLP : yes

TRIAZOLE DERIVATIVE:

Species : Guinea pig
Remarks : Information given is based on data obtained from similar substances.

CORROSION/SCALE INHIBITOR:

Species : Guinea pig
Method : Maximisation Test

THIAZOLE COMPOUND:

Test Type : Maximisation Test
Species : Guinea pig
Method : OECD Test Guideline 406
Remarks : Information given is based on data obtained from similar substances.

Germ cell mutagenicity


Not classified based on available information.

Components:

INORGANIC SALT:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster lung cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
Remarks: Information given is based on data obtained from similar substances.

Test Type: Chromosome aberration test in vitro

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Test system: Chinese hamster lung cells
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 473
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

Test Type: Ames test
 Test system: Escherichia coli
 Metabolic activation: without metabolic activation
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

Genotoxicity in vivo : Test Type: chromosome aberration assay
 Species: Mouse
 Method: OECD Test Guideline 475
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

TRIAZOLE DERIVATIVE:

Genotoxicity in vitro : Test Type: Ames test
 Metabolic activation: with metabolic activation
 Result: positive
 Remarks: Information given is based on data obtained from similar substances.


Test Type: in vitro assay
 Test system: mammalian cells
 Metabolic activation: without metabolic activation
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

Test Type: Chromosome aberration test in vitro
 Test system: mammalian cells
 Metabolic activation: with and without metabolic activation
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

Test Type: Ames test
 Metabolic activation: without metabolic activation
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

THIAZOLE COMPOUND:

Genotoxicity in vitro : Test Type: Ames test
 Metabolic activation: with and without metabolic activation

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Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test
 Species: Mouse
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

INORGANIC SALT:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
 Test system: Chinese hamster lung cells
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 476
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

Test Type: Chromosome aberration test in vitro
 Test system: Chinese hamster lung cells
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 473
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.


Test Type: Ames test
 Test system: Escherichia coli
 Metabolic activation: without metabolic activation
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

Genotoxicity in vivo : Test Type: chromosome aberration assay
 Species: Mouse
 Method: OECD Test Guideline 475
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

TRIAZOLE DERIVATIVE:

Genotoxicity in vitro : Test Type: Ames test
 Metabolic activation: with metabolic activation
 Result: positive
 Remarks: Information given is based on data obtained from similar substances.

Test Type: in vitro assay
 Test system: mammalian cells
 Metabolic activation: without metabolic activation
 Result: negative
 Remarks: Information given is based on data obtained from

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similar substances.

Test Type: Chromosome aberration test in vitro
 Test system: mammalian cells
 Metabolic activation: with and without metabolic activation
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

Test Type: Ames test
 Metabolic activation: without metabolic activation
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

THIAZOLE COMPOUND:

Genotoxicity in vitro : Test Type: Ames test
 Metabolic activation: with and without metabolic activation
 Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test
 Species: Mouse
 Result: negative
 Remarks: Information given is based on data obtained from similar substances.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

May damage fertility or the unborn child.

Components:

INORGANIC SALT:

Reproductive toxicity - Assessment : Clear evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments

INORGANIC SALT:

Reproductive toxicity - Assessment : Clear evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments

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STOT - single exposure

Not classified based on available information.

Components:**INORGANIC SALT:**

Exposure routes : Inhalation
 Target Organs : Respiratory Tract
 Assessment : May cause respiratory irritation.

INORGANIC SALT:

Exposure routes : Inhalation
 Target Organs : Respiratory Tract
 Assessment : May cause respiratory irritation.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information**Product:**

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Product:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 137 mg/l
 Exposure time: 96 h
 Test Type: static test


LC50 (Pimephales promelas (fathead minnow)): 616 mg/l
 Exposure time: 96 h
 Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : LC 50 (Water flea (Ceriodaphnia dubia)): 177 mg/l
 Exposure time: 48 h
 Test Type: static test

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Chronic aquatic toxicity Category 3; Harmful to aquatic life with long lasting effects.

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Components:

INORGANIC SALT:

- Toxicity to fish : LC50 (Danio rerio (zebra fish)): 210 mg/l
 Exposure time: 96 h
 Method: ISO 7346/2
 Remarks: Information given is based on data obtained from similar substances.
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1,700 mg/l
 Exposure time: 48 h
 Remarks: Mortality
 Information given is based on data obtained from similar substances.
- Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 207 mg/l
 Exposure time: 72 h
 Method: OECD Test Guideline 201
 Remarks: Information given is based on data obtained from similar substances.
- Toxicity to microorganisms : EC0 (Pseudomonas putida): 3,454 mg/l
 Exposure time: 0.5 h
 Test Type: Static
 Remarks: Information given is based on data obtained from similar substances.

INORGANIC SALT:


- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,800 mg/l
 Exposure time: 48 h
 Test Type: static test

TRIAZOLE DERIVATIVE:

- Toxicity to fish : LC50 (Danio rerio (zebra fish)): 180 mg/l
 Exposure time: 96 h
 Method: OECD Test Guideline 203
 Remarks: Based on similar product.
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 8.58 mg/l
 Exposure time: 48 h
 Remarks: Based on similar product.

ORGANIC SALT:

- Toxicity to fish : LC50: > 3,300 mg/l
 Remarks: Information given is based on data on the components and the ecotoxicology of similar products.
- Toxicity to daphnia and other aquatic invertebrates : EC50: > 3,300 mg/l
 Exposure time: 48 h
 Remarks: Information given is based on data on the

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components and the ecotoxicology of similar products.

CORROSION/SCALE INHIBITOR:

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h

- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): > 1,000 mg/l
Exposure time: 48 h

- Toxicity to algae/aquatic plants : EC50 (Aquatic plants): > 100 mg/l
Exposure time: 72 h

Ecotoxicology Assessment

- Acute aquatic toxicity : Toxic to aquatic life.

- Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

THIAZOLE COMPOUND:

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.73 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: OECD Test Guideline 203
Remarks: Information given is based on data obtained from similar substances.


LC50 (Bluegill (Lepomis macrochirus)): 3.8 mg/l
Exposure time: 96 h
Test Type: static test

- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 19 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

- Toxicity to algae/aquatic plants : IC50 (Pseudokirchneriella subcapitata (green algae)): 0.3 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 201

ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.5 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Information given is based on data obtained from similar substances.

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.066 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Information given is based on data obtained from

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similar substances.

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 0.041 mg/l
 End point: Growth rate
 Exposure time: 89 d
 Test Type: flow-through test
 Method: OECD Test Guideline 210
 Remarks: Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.08 mg/l
 End point: Reproduction Test
 Exposure time: 21 d
 Method: OECD Test Guideline 211
 Remarks: Information given is based on data obtained from similar substances.

INORGANIC SALT:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 210 mg/l
 Exposure time: 96 h
 Method: ISO 7346/2
 Remarks: Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1,700 mg/l
 Exposure time: 48 h
 Remarks: Mortality
 Information given is based on data obtained from similar substances.

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 207 mg/l
 Exposure time: 72 h
 Method: OECD Test Guideline 201
 Remarks: Information given is based on data obtained from similar substances.


Toxicity to microorganisms : EC0 (Pseudomonas putida): 3,454 mg/l
 Exposure time: 0.5 h
 Test Type: Static
 Remarks: Information given is based on data obtained from similar substances.

INORGANIC SALT:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,800 mg/l
 Exposure time: 48 h
 Test Type: static test

TRIAZOLE DERIVATIVE:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 180 mg/l
 Exposure time: 96 h

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Method: OECD Test Guideline 203
 Remarks: Based on similar product.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 8.58 mg/l
 Exposure time: 48 h
 Remarks: Based on similar product.

ORGANIC SALT:

Toxicity to fish : LC50: > 3,300 mg/l
 Remarks: Information given is based on data on the components and the ecotoxicology of similar products.

Toxicity to daphnia and other aquatic invertebrates : EC50: > 3,300 mg/l
 Exposure time: 48 h
 Remarks: Information given is based on data on the components and the ecotoxicology of similar products.

CORROSION/SCALE INHIBITOR:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
 Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): > 1,000 mg/l
 Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Aquatic plants): > 100 mg/l
 Exposure time: 72 h

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.


THIAZOLE COMPOUND:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.73 mg/l
 Exposure time: 96 h
 Test Type: flow-through test
 Method: OECD Test Guideline 203
 Remarks: Information given is based on data obtained from similar substances.

LC50 (Bluegill (Lepomis macrochirus)): 3.8 mg/l
 Exposure time: 96 h
 Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 19 mg/l
 Exposure time: 48 h
 Test Type: static test
 Method: OECD Test Guideline 202

Toxicity to algae/aquatic : IC50 (Pseudokirchneriella subcapitata (green algae)): 0.3 mg/l

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plants

Exposure time: 96 h
Method: OECD Test Guideline 201

ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.5 mg/l

Exposure time: 72 h
Method: OECD Test Guideline 201

Remarks: Information given is based on data obtained from similar substances.

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.066 mg/l

Exposure time: 72 h
Method: OECD Test Guideline 201

Remarks: Information given is based on data obtained from similar substances.

Toxicity to fish (Chronic toxicity)

: NOEC (Oncorhynchus mykiss (rainbow trout)): 0.041 mg/l

End point: Growth rate

Exposure time: 89 d

Test Type: flow-through test

Method: OECD Test Guideline 210

Remarks: Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

: NOEC (Daphnia magna (Water flea)): 0.08 mg/l

End point: Reproduction Test

Exposure time: 21 d

Method: OECD Test Guideline 211

Remarks: Information given is based on data obtained from similar substances.

Persistence and degradability

Product:

Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days
61 mg/l

Chemical Oxygen Demand (COD) : 147,341 mg/l

Components:


INORGANIC SALT:

Biodegradability : Result: The methods for determining biodegradability are not applicable to inorganic substances.

Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

ORGANIC SALT:

Biodegradability : Result: Readily biodegradable.

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Biodegradation: 86.27 %
 Exposure time: 28 d
 Remarks: Information given is based on data obtained from similar substances.

THIAZOLE COMPOUND:

Biodegradability : Result: Not readily biodegradable.
 Remarks: Information given is based on data obtained from similar substances.

INORGANIC SALT:

Biodegradability : Result: The methods for determining biodegradability are not applicable to inorganic substances.
 Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

ORGANIC SALT:

Biodegradability : Result: Readily biodegradable.
 Biodegradation: 86.27 %
 Exposure time: 28 d
 Remarks: Information given is based on data obtained from similar substances.

THIAZOLE COMPOUND:

Biodegradability : Result: Not readily biodegradable.
 Remarks: Information given is based on data obtained from similar substances.

Bioaccumulative potential

Components:


THIAZOLE COMPOUND:

Bioaccumulation : Species: Cyprinus carpio (Carp)
 Bioconcentration factor (BCF): < 8
 Exposure time: 6 Weeks
 Concentration: 0.01 mg/l
 Remarks: Information given is based on data obtained from similar substances.

Partition coefficient: n-octanol/water : log Pow: 2.42
 pH: 7

THIAZOLE COMPOUND:

Bioaccumulation : Species: Cyprinus carpio (Carp)
 Bioconcentration factor (BCF): < 8
 Exposure time: 6 Weeks
 Concentration: 0.01 mg/l

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Remarks: Information given is based on data obtained from similar substances.

Partition coefficient: n-octanol/water : log Pow: 2.42
pH: 7

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life with long lasting effects.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code


Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

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Not regulated as a dangerous good

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Corrosive to metals
Respiratory or skin sensitization
Reproductive toxicity
Skin corrosion or irritation
Serious eye damage or eye irritation


SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

- TCSI : Not in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AICS : Not in compliance with the inventory
- DSL : This product contains one or more components that are not on the Canadian DSL and have annual quantity limits.
- ENCS : Not in compliance with the inventory
- KECI : Not in compliance with the inventory
- PICCS : Not in compliance with the inventory
- IECSC : Not in compliance with the inventory
- NZIOC : On the inventory, or in compliance with the inventory

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TSCA list

The following substance(s) is/are subject to a Significant New Use Rule:
MERCURY 7439-97-6

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

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Full text of H-Statements

H290 : May be corrosive to metals.
H302 : Harmful if swallowed.
H314 : Causes severe skin burns and eye damage.
H315 : Causes skin irritation.
H317 : May cause an allergic skin reaction.
H318 : Causes serious eye damage.
H319 : Causes serious eye irritation.
H335 : May cause respiratory irritation.
H360 : May damage fertility or the unborn child.


Full text of other abbreviations

Acute Tox. : Acute toxicity
Eye Dam. : Serious eye damage
Eye Irrit. : Eye irritation
Met. Corr. : Corrosive to metals
Repr. : Reproductive toxicity
Skin Corr. : Skin corrosion
Skin Irrit. : Skin irritation
Skin Sens. : Skin sensitisation
STOT SE : Specific target organ toxicity - single exposure
ACGIH : USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL : USA. NIOSH Recommended Exposure Limits
OSHA P0 : USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)

ACGIH / TWA : 8-hour, time-weighted average
ACGIH / STEL : Short-term exposure limit
NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek

OSHA P0 / TWA : 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN -

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Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN



SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	Quadrasperse® CL4830
Product Use:	Cooling Water Treatment
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424-9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road Glen Allen, VA 23060
Telephone Number for Information:	(800)648-4579
Date of SDS:	April 9, 2018
Revision Date:	April 9, 2018
Revision Number:	DRAFT-180409011114AN

Section 2. Hazard(s) Identification



Signal Word:	DANGER
GHS Classification(s):	Skin corrosion/irritation – Category 1b Eye damage/irritation – Category 1 Acute Toxicity Oral – Category 4
Hazard Statement(s):	H314 Causes severe skin burns and eye damage. H318 Causes serious eye damage. H302 Harmful if swallowed.
Precautionary Statement(s):	
Prevention:	P260 Do not breathe dust/fume/gas/mist/vapors/spray. P264 Wash thoroughly after handling. P270 Do not eat, drink, or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/protective clothing/eye protection/face protection.



Response:

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
 P301 + 330 + 331 IF SWALLOWED: Rinse mouth.
 Do NOT induce vomiting.
 P303 + P361 + P353 IF ON SKIN (or hair):
 Remove/take off immediately all contaminated clothing.
 Rinse skin with water/shower
 P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310 Immediately call a POISON CENTER/doctor.
 P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.

System of Classification Used:

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards Not Otherwise Classified:

None.

Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt.%
Phosphoric acid	7664-38-2	5 - 10
2-Phosphono-1,2,4-butane tricarboxylic acid	37971-36-1	1 - 5
Tetrapotassium pyrophosphate	7320-34-5	3 - 7
Potassium hydroxide	1310-58-3	10 - 30
Tolyltriazole, sodium salt	64665-57-2	1 - 5

Comments

If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

Section 4. First Aid Measures

Inhalation:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
Skin:	Immediately remove/take off all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before re-use. Immediately call a poison center or doctor/physician.
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A

Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	None known.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and recover liquid when possible. Flush spill area with water spray.
Other Statements:	If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802. Reportable Quantity of the product is 1597 Gal.

Section 7. Handling and Storage

Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Store above Freeze Point.

Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits
Phosphoric acid	ACGIH TLV	3 mg/m ³ STEL
	OSHA PEL	1 mg/m ³ TWA
2-Phosphono-1,2,4-butane tricarboxylic acid	N/E	N/E
Tetrapotassium pyrophosphate	N/E	N/E
Potassium hydroxide	ACGIH TLV	2 mg/m ³ Ceiling
Tolyltriazole, sodium salt	N/E	N/E



Engineering Controls:

Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

Personal Protection

Eyes: Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.

Skin: Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.

Respiratory: If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Amber, Clear
Specific Gravity:	1.341 @ 20°C
pH:	12.8 @ 20°C, 100.0%
Freezing Point:	7°F
Flash Point:	N/D
Odor:	Mild
Melting Point:	N/A
Initial Boiling Point and Boiling Range:	212°F
Solubility in Water:	Complete
Evaporation Rate:	As Water
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	<100 CPS @ 20°C
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	11.18 LB/GA
Vapor Pressure:	N/D
% VOC:	N/D
Odor Threshold	N/D
n-octanol Partition Coefficient	N/D
Decomposition Temperature	N/D

Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Acids.
Hazardous Decomposition Products:	Oxides of nitrogen, Oxides of carbon.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

Section 11. Toxicological Information

Acute Toxicity

Chemical Name	Exposure	Type of Effect	Concentration	Species
Phosphoric acid	Dermal	LD50	2740 MG/KG	Rabbit
	Oral	LD50	1530 MG/KG	Rat
2-Phosphono-1,2,4-butane tricarboxylic acid	Oral	LD50	>6500 MG/KG	Rat
	Oral	LD50	2980 MG/KG	Rat
Tetrapotassium pyrophosphate	Oral	LD50	>7940 MG/KG	Rabbit
	Dermal	LD50	>7940 MG/KG	Rabbit
Potassium hydroxide	Oral	LD50	365 MG/KG	Rat
Tolyltriazole, sodium salt	Oral	LD50	920 MG/KG	Rat
	Dermal	LD50	>2 G/KG	Rabbit

Carcinogenicity Category

Component	Source	Code	Brief Description
Phosphoric acid	N/E	N/E	N/E
2-Phosphono-1,2,4-butane tricarboxylic acid	N/E	N/E	N/E
Tetrapotassium pyrophosphate	N/E	N/E	N/E
Potassium hydroxide	N/E	N/E	N/E
Tolyltriazole, sodium salt	N/E	N/E	N/E

Likely Routes of Exposure: N/D



Symptoms

Inhalation: N/D

Eye Contact: N/D

Skin Contact: N/D

Ingestion: N/D

Skin Corrosion/Irritation: N/D

Serious Eye Damage/Eye Irritation: N/D

Sensitization: N/D

Germ Cell Mutagenicity: N/D

Reproductive/Developmental Toxicity: N/D

Specific Target Organ Toxicity

Single Exposure: N/D

Repeated Exposure: N/D

Aspiration Hazard: N/D

Comments: None.

Section 12. Ecological Information

Ecotoxicity

Species	Duration	Type of Effect	Test Results
Ceriodaphnia dubia	48h	LC50	901 mg/l
	7d	NOEC	63 mg/l
	7d	LOEC	125 mg/l
	7d	IC25	83 mg/l
Fathead Minnow	96h	LC50	568 mg/l

Persistence and Biodegradability: N/D

Bioaccumulative Potential: N/D



Mobility In Soil: N/D

Other Adverse Effects: N/D

Comments: LOEC, NOEC, and IC25 chronic data are based on a similar product.

Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations. EPA corrosivity characteristic hazardous waste D002 when disposed of in the original product form.

Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	UN1760	CORROSIVE LIQUIDS, N.O.S.	(SODIUM TOLYLTRIAZOLE AND POTASSIUM HYDROXIDE)	8	PGIII
Over 1597 GA	RQ UN1760	CORROSIVE LIQUIDS, N.O.S.	(SODIUM TOLYLTRIAZOLE AND POTASSIUM HYDROXIDE)	8	PGIII
TDG	UN1760	CORROSIVE LIQUIDS, N.O.S.	(SODIUM TOLYLTRIAZOLE AND POTASSIUM HYDROXIDE)	8	PGIII
ICAO	UN1760	CORROSIVE LIQUIDS, N.O.S.	(SODIUM TOLYLTRIAZOLE AND POTASSIUM HYDROXIDE)	8	PGIII

Note: N/A

Section 15. Regulatory Information

Inventory Status

United States (TSCA):
Canada (DSL/NDSL):

All ingredients listed.
All ingredients listed.



Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes

Fire Hazard:	No
Reactive Hazard:	No
Release of Pressure:	No
Acute Health Hazard:	Yes
Chronic Health Hazard:	No

Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
Phosphoric acid	No	N/A	5000
2-Phosphono-1,2,4-butane tricarboxylic acid	N/A	N/A	N/A
Tetrapotassium pyrophosphate	N/A	N/A	N/A
Potassium hydroxide	N/A	N/A	1000
Tolyltriazole, sodium salt	N/A	N/A	N/A

Comments: None.

State Regulations

California Proposition 65: None known.

Special Regulations

Component	States
Phosphoric acid	MA, MN, NY, WA
2-Phosphono-1,2,4-butane tricarboxylic acid	None.
Tetrapotassium pyrophosphate	None.
Potassium hydroxide	MA, MN, NY, PA, WA
Tolyltriazole, sodium salt	None.

International Regulations

Canada

WHMIS Classification: D2B (Toxic Material)
E (Corrosive Material)

Controlled Product Regulations (CPR): This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.



Compliance Information

NSF:	N/A
Food Regulations:	N/A
KOSHER:	This product has not been evaluated for Kosher approval.
Halal:	This product has not been evaluated for Halal approval.
FIFRA:	N/A
Other:	None

Comments: None.

Section 16. Other Information

HMIS Hazard Rating

Health:	2
Flammability:	0
Physical Hazard:	0
PPE:	X

Notes: The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.

The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value




Abbreviation	Definition
TWA	Time Weight Average
UNK	Unknown

Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Revision Date: April 9, 2018

Disclaimer

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, ChemTreat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers.

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Drewphos™ 2000 BOILER WATER TREATMENT
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Corrosion inhibitor.

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion : Category 1

Serious eye damage : Category 1

GHS label elements

Hazard pictograms :




Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/
face protection.

Response:

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P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (%)
sodium hydroxide	1310-73-2	Met. Corr. 1; H290 Skin Corr. 1A; H314 Eye Dam. 1; H318	>= 1.5 - < 5


Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : Move to fresh air.
If breathed in, move person into fresh air.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : If on skin, rinse well with water.


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Wash contaminated clothing before re-use.

- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : Get medical attention immediately.
Do NOT induce vomiting.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
irritation (nose, throat, airways)
Cough
lung edema (fluid buildup in the lung tissue)
Difficulty in breathing
Causes serious eye damage.
Causes severe burns.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Oxides of phosphorus
Sodium oxides
corrosive vapors
toxic fumes
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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Special protective equipment : In the event of fire, wear self-contained breathing apparatus. for firefighters

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.


SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust. When diluting, always add the product to water. Never add water to the product. Container hazardous when empty. Avoid contact with skin and eyes. Smoking, eating and drinking should be prohibited in the application area. For personal protection see section 8. Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type	Control	Basis
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		(Form of exposure)	parameters / Permissible concentration	
sodium hydroxide	1310-73-2	C	2 mg/m3	ACGIH
		C	2 mg/m3	NIOSH REL
		TWA	2 mg/m3	OSHA Z-1
		C	2 mg/m3	OSHA P0

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Hand protection

Material : Nitrile rubber

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.


Skin and body protection : Wear as appropriate:
Impervious clothing
Chemical resistant apron
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.

Hygiene measures : Wash hands before breaks and at the end of workday.
When using do not eat or drink.
Ensure that eyewash stations and safety showers are close to the workstation location.
When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES


Appearance : Aqueous solution

Odour : No data available

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Odour Threshold : No data available
pH : 13
Melting point/freezing point : No data available
Boiling point/boiling range : 212 °F / 100 °C
(1,013.33 hPa)
Calculated Phase Transition Liquid/Gas
Flash point : No data available
Evaporation rate : No data available
Flammability (solid, gas) : No data available
Self-ignition : No data available
Upper explosion limit / Upper flammability limit : No data available
Lower explosion limit / Lower flammability limit : No data available
Vapour pressure : 23.33 hPa (68 °F / 20 °C)
Calculated Vapor Pressure
Relative vapour density : No data available
Relative density : No data available
Density : 1.060 g/cm³
Solubility(ies)
Water solubility : completely miscible
Solubility in other solvents : No data available
Partition coefficient: n-octanol/water : No data available
Decomposition temperature : No data available
Viscosity
Viscosity, dynamic : No data available
Viscosity, kinematic : No data available
Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

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- Reactivity : No decomposition if stored and applied as directed.
- Chemical stability : Stable under recommended storage conditions.
- Possibility of hazardous reactions : Product will not undergo hazardous polymerization.
- Conditions to avoid : excessive heat
Exposure to sunlight.
Exposure to moisture
- Incompatible materials : Acids
halogenated hydrocarbons
Metals
organic nitro compounds
Strong oxidizing agents
- Hazardous decomposition products : Oxides of phosphorus
Sodium oxides
corrosive vapors
toxic fumes

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Components:

sodium hydroxide:

Acute oral toxicity : LDLo (Rabbit): 500 mg/kg

Skin corrosion/irritation

Causes severe burns.

Product:

Remarks : Causes severe skin burns and eye damage.
The feeling of irritation or pain may be delayed.

Components:


sodium hydroxide:

Result : Causes severe burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

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Remarks : May cause irreversible eye damage.

Components:

sodium hydroxide:

Result : Corrosive to eyes

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.


Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

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SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

Components:

sodium hydroxide:

Toxicity to fish : LC50 (Gambusia affinis (Mosquito fish)): 125 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 34.59 - 47.13 mg/l
Exposure time: 48 h
Remarks: Intoxication

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available


SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.

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Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN number : UN 3266
 Proper shipping name : Corrosive liquid, basic, inorganic, n.o.s. (SODIUM HYDROXIDE)
 Class : 8
 Packing group : III
 Packing instruction (cargo aircraft) : 856
 Packing instruction (passenger aircraft) : 852
 Marine pollutant : no

IMDG-Code

UN number : UN 3266
 Proper shipping name : CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM HYDROXIDE)
 Class : 8
 Packing group : III
 EmS Code : F-A, S-B
 Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.


National Regulations

49 CFR

UN number : UN 3266
 Proper shipping name : Corrosive liquid, basic, inorganic, n.o.s. (SODIUM HYDROXIDE)
 Class : 8
 Packing group : III
 ERG Code : 154
 Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
sodium hydroxide	1310-73-2	1000	52479

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65


Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory

TSCA list

The following substance(s) is/are subject to a Significant New Use Rule:
MERCURY 7439-97-6

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No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

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Full text of H-Statements

H290 : May be corrosive to metals.
H314 : Causes severe skin burns and eye damage.
H318 : Causes serious eye damage.

Full text of other abbreviations

Eye Dam. : Serious eye damage
Met. Corr. : Corrosive to metals
Skin Corr. : Skin corrosion
ACGIH : USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL : USA. NIOSH Recommended Exposure Limits
OSHA P0 : USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / C : Ceiling limit
NIOSH REL / C : Ceiling value not be exceeded at any time.
OSHA P0 / C : Ceiling limit
OSHA Z-1 / TWA : 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals;

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OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data


SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Drewphos™ 2600
BOILER WATER TREATMENT
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion : Category 1

Serious eye damage : Category 1

GHS label elements

Hazard pictograms :




Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT

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induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (%)
sodium hydroxide	1310-73-2	Met. Corr. 1; H290 Skin Corr. 1A; H314 Eye Dam. 1; H318	>= 1.5 - < 5

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : Move to fresh air.
If breathed in, move person into fresh air.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.


In case of skin contact : If on skin, rinse well with water.
Wash contaminated clothing before re-use.

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- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : Get medical attention immediately.
Do NOT induce vomiting.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Cough
lung edema (fluid buildup in the lung tissue)
Difficulty in breathing
Excessive levels of phosphorus can cause low blood calcium, with tetany and convulsions.
Causes serious eye damage.
Causes severe burns.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : If product is heated above its flash point it will produce vapors sufficient to support combustion. Vapors are heavier than air and may travel along the ground and be ignited by heat, pilot lights, other flames and ignition sources at locations near the point of release.
Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
Oxides of phosphorus

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Sodium oxides
corrosive vapors
toxic fumes


- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.
When diluting, always add the product to water. Never add water to the product.
Container hazardous when empty.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

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Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
sodium hydroxide	1310-73-2	C	2 mg/m3	ACGIH
		C	2 mg/m3	NIOSH REL
		TWA	2 mg/m3	OSHA Z-1
		C	2 mg/m3	OSHA P0

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment


Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.
Maintain eye wash station in immediate work area.

Skin and body protection : Wear as appropriate:
Impervious clothing
Chemical resistant apron
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.

Hygiene measures : Wash hands before breaks and at the end of workday.
When using do not eat or drink.
Ensure that eyewash stations and safety showers are close to the workstation location.
When using do not smoke.

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : white
light yellow

Odour : No data available

Odour Threshold : No data available

pH : 12

Melting point/freezing point : 25 °F / -4 °C

Boiling point/boiling range : 212 °F / 100 °C
(1,013.33 hPa)
Calculated Phase Transition Liquid/Gas

Flash point : 200.1 °F / 93.4 °C
Calculated Flash Point

Evaporation rate : > 1
Ethyl Ether

Flammability (solid, gas) : No data available

Self-ignition : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : 32 hPa (68 °F / 20 °C)
Calculated Vapor Pressure

Relative vapour density : No data available

Relative density : No data available

Density : 1.08 - 1.18 g/cm³ (77.0 °F / 25.0 °C)

Solubility(ies)

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Water solubility	: No data available
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Decomposition temperature	: No data available
Viscosity	
Viscosity, dynamic	: No data available
Viscosity, kinematic	: No data available
Oxidizing properties	: No data available


SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No decomposition if stored and applied as directed.
Chemical stability	: Stable under recommended storage conditions.
Possibility of hazardous reactions	: Product will not undergo hazardous polymerization.
Conditions to avoid	: Exposure to sunlight. Exposure to moisture
Incompatible materials	: Acids alkalis halogenated hydrocarbons Metals nitrites organic nitro compounds Strong oxidizing agents sulphites
Hazardous decomposition products	: Oxides of phosphorus Sodium oxides Carbon monoxide Carbon dioxide (CO ₂) corrosive vapors toxic fumes

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

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Components:

sodium hydroxide:

Acute oral toxicity : LDLo (Rabbit): 500 mg/kg

Skin corrosion/irritation

Causes severe burns.

Product:

Remarks : Causes severe skin burns and eye damage.
The feeling of irritation or pain may be delayed.

Components:

sodium hydroxide:

Result : Causes severe burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks : May cause irreversible eye damage.

Components:

sodium hydroxide:

Result : Corrosive to eyes

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.


Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,770 mg/l
Exposure time: 96 h
Test Type: static test

LC50 (Pimephales promelas (fathead minnow)): 2,680 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : LC 50 (Daphnia magna (Water flea)): 2,870 mg/l
Exposure time: 48 h
Test Type: static test

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.


Chronic aquatic toxicity : Not classified based on available information.

Components:

sodium hydroxide:

Toxicity to fish : LC50 (Gambusia affinis (Mosquito fish)): 125 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 34.59 - 47.13 mg/l
Exposure time: 48 h
Remarks: Intoxication

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Persistence and degradability

Product:

Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days < 1,000 mg/l

Chemical Oxygen Demand (COD) : 74,800 mg/l
Method: Chemical oxygen demand

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN number : UN 1719
Proper shipping name : Caustic alkali liquid, n.o.s. (SODIUM HYDROXIDE)
Class : 8
Packing group : III
Packing instruction (cargo aircraft) : 856
Packing instruction : 852

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(passenger aircraft)
Marine pollutant : no

IMDG-Code

UN number : UN 1719
 Proper shipping name : CAUSTIC ALKALI LIQUID, N.O.S. (SODIUM HYDROXIDE)
 Class : 8
 Packing group : III
 EmS Code : F-A, S-B
 Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

UN number : UN 1719
 Proper shipping name : Caustic alkali liquids, n.o.s. (SODIUM HYDROXIDE)
 Class : 8
 Packing group : III
 ERG Code : 154
 Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity


Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
sodium hydroxide	1310-73-2	1000	22281

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Skin corrosion or irritation
 Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

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California Prop. 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : Not in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory
- NZIOC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

Revision Date : 08/22/2022

Full text of H-Statements

- H290 : May be corrosive to metals.
- H314 : Causes severe skin burns and eye damage.
- H318 : Causes serious eye damage.

Full text of other abbreviations

- Eye Dam. : Serious eye damage
- Met. Corr. : Corrosive to metals
- Skin Corr. : Skin corrosion
- ACGIH : USA. ACGIH Threshold Limit Values (TLV)
- NIOSH REL : USA. NIOSH Recommended Exposure Limits
- OSHA P0 : USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
- OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1

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registered in various countries
68017

	Limits for Air Contaminants
ACGIH / C	: Ceiling limit
NIOSH REL / C	: Ceiling value not be exceeded at any time.
OSHA P0 / C	: Ceiling limit
OSHA Z-1 / TWA	: 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports


The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

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other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

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		PM 29666-00

SECTION 1. IDENTIFICATION

Product identifier

Trade name : Drewphos™ 3000 deposit inhibitor
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : BOILER WATER TREATMENT

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Corrosive to metals : Category 1

Skin corrosion : Category 1

Serious eye damage : Category 1

GHS label elements


Hazard pictograms :



Signal word : Danger

Hazard statements : H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

Precautionary statements : **Prevention:**
P234 Keep only in original container.
P264 Wash skin thoroughly after handling.

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P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.

P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.

P363 Wash contaminated clothing before reuse.

P390 Absorb spillage to prevent material damage.

Storage:

P405 Store locked up.

P406 Store in corrosive resistant container with a resistant inner liner.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (%)
sodium hydroxide	1310-73-2	Met. Corr. 1; H290 Skin Corr. 1A; H314 Eye Dam. 1; H318	>= 1.5 - < 5

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : Move to fresh air.

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If breathed in, move person into fresh air.
 Keep patient warm and at rest.
 If unconscious, place in recovery position and seek medical advice.
 If symptoms persist, call a physician.

- In case of skin contact : If on skin, rinse well with water.
Wash contaminated clothing before re-use.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : Get medical attention immediately.
Do NOT induce vomiting.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Cough
lung edema (fluid buildup in the lung tissue)
Difficulty in breathing
Excessive levels of phosphorus can cause low blood calcium, with tetany and convulsions.
Causes serious eye damage.
Causes severe burns.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

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- Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
Oxides of phosphorus
Sodium oxides
corrosive vapors
toxic fumes
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.
When diluting, always add the product to water. Never add water to the product.
Container hazardous when empty.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and

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kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with
the technological safety standards.

Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
sodium hydroxide	1310-73-2	C	2 mg/m3	ACGIH
		C	2 mg/m3	NIOSH REL
		TWA	2 mg/m3	OSHA Z-1
		C	2 mg/m3	OSHA P0

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment


Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.
Maintain eye wash station in immediate work area.

Skin and body protection : Wear as appropriate:
Impervious clothing
Chemical resistant apron
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.


Hygiene measures : Wash hands before breaks and at the end of workday.

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When using do not eat or drink.
Ensure that eyewash stations and safety showers are close
to the workstation location.
When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: colourless, to, light yellow
Odour	: No data available
Odour Threshold	: No data available
pH	: ca. 12
Melting point/freezing point	: 27 °F / -3 °C
Boiling point/boiling range	: 212 °F / 100 °C (1,013.33 hPa) Calculated Phase Transition Liquid/Gas
Flash point	: No data available
Evaporation rate	: > 1 Ethyl Ether
Flammability (solid, gas)	: No data available
Self-ignition	: No data available
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Vapour pressure	: 23.33 hPa (68 °F / 20 °C) Calculated Vapor Pressure
Relative vapour density	: No data available
Relative density	: No data available
Density	: 1.04 - 1.14 g/cm ³ (68 °F / 20 °C)
Solubility(ies) Water solubility	: completely soluble

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Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Oxidizing properties : No data available

Metal corrosion rate : 8.22 mm/a

Particle size : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

Conditions to avoid : Exposure to sunlight.
Exposure to moisture


Incompatible materials : Acids
halogenated hydrocarbons
Metals
organic nitro compounds
Strong oxidizing agents

Hazardous decomposition products : Oxides of phosphorus
Sodium oxides
Carbon monoxide
Carbon dioxide (CO₂)
corrosive vapors
toxic fumes

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

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Components:

sodium hydroxide:

Acute oral toxicity : LDLo (Rabbit): 500 mg/kg

Skin corrosion/irritation

Causes severe burns.

Product:

Result : Corrosive to skin

Remarks : Causes severe skin burns and eye damage.
The feeling of irritation or pain may be delayed.

Components:

sodium hydroxide:

Result : Causes severe burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Result : Corrosive to eyes

Remarks : May cause irreversible eye damage.

Components:

sodium hydroxide:

Result : Corrosive to eyes

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity


Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

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NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 16,500 mg/l
Exposure time: 96 h
Test Type: static test
Remarks: Information given is based on data on the components and the ecotoxicology of similar products.

LC50 (Pimephales promelas (fathead minnow)): 8,840 mg/l
Exposure time: 96 h
Test Type: static test
Remarks: Information given is based on data on the components and the ecotoxicology of similar products.

Toxicity to daphnia and other aquatic invertebrates : LC 50 (Daphnia magna (Water flea)): 8,250 mg/l
Exposure time: 48 h
Test Type: static test
Remarks: Information given is based on data on the components and the ecotoxicology of similar products.

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

Components:

sodium hydroxide:

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Toxicity to fish : LC50 (Gambusia affinis (Mosquito fish)): 125 mg/l
 Exposure time: 96 h
 Method: Static
 Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 34.59 - 47.13 mg/l
 Exposure time: 48 h
 Remarks: Intoxication

Persistence and degradability

Product:

Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days < 50 mg/l

Chemical Oxygen Demand (COD) : 24.0 mg/l

Components:

sodium hydroxide:

Biodegradability : Result: The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available


SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Do not dispose of waste into sewer.
 Do not contaminate ponds, waterways or ditches with chemical or used container.
 Send to a licensed waste management company.

 Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.
 Dispose of as unused product.
 Empty containers should be taken to an approved waste

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handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN number : UN 3266
Proper shipping name : Corrosive liquid, basic, inorganic, n.o.s. (SODIUM HYDROXIDE)
Class : 8
Packing group : III
Packing instruction (cargo aircraft) : 856
Packing instruction (passenger aircraft) : 852

IMDG-Code

UN number : UN 3266
Proper shipping name : CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM HYDROXIDE)
Class : 8
Packing group : III
EmS Code : F-A, S-B
Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.


National Regulations

49 CFR

UN number : UN 3266
Proper shipping name : Corrosive liquid, basic, inorganic, n.o.s. (SODIUM HYDROXIDE)
Class : 8
Packing group : III
ERG Code : 154
Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
sodium hydroxide	1310-73-2	1000	22924

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Corrosive to metals
Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.


The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

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SECTION 16. OTHER INFORMATION

Further information

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Skin Corr. : Skin corrosion
ACGIH : USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL : USA. NIOSH Recommended Exposure Limits
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OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
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Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECL - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Amersite™ 2
 CORROSION INHIBITOR
 ™ Trademark, Solenis or its subsidiaries or affiliates,
 registered in various countries

Recommended use of the chemical and restrictions on use

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSPProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity (Oral) : Category 4

GHS label elements

Hazard pictograms :




Signal word : Warning

Hazard statements : H302 Harmful if swallowed.

Precautionary statements : **Prevention:**
 P264 Wash skin thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.

Response:
 P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.

Disposal:
 P501 Dispose of contents/ container to an approved waste

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disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture


Components

Chemical name	CAS-No.	Classification	Concentration (%)
SODIUM BISULFITE	7631-90-5	Acute Tox. 4; H302	>= 30 - < 40

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
- In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
If eye irritation persists, consult a specialist.
- If swallowed : IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Sulphur dioxide may be released if this material comes into

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contact with acids, water and/or ice. In contact with moisture, sulfur dioxide forms sulfuric acid which is corrosive to skin and mucous membranes.
Harmful if swallowed.


Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : sodium sulphide residue
Sulphur oxides
Sodium oxides
sulfur oxides
sodium monoxide
sulfur dioxide
toxic fumes
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Standard procedure for chemical fires.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

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SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.
Do not smoke.
Container hazardous when empty.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Electrical installations / working materials must comply with the technological safety standards.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION


Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
SODIUM BISULFITE	7631-90-5	TWA	5 mg/m3	ACGIH
		TWA	5 mg/m3	NIOSH REL

- Engineering measures** : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

- Respiratory protection : A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any

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other circumstances where an air-purifying respirator may not provide adequate protection.

Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.

Skin and body protection : Wear as appropriate:
 Impervious clothing
 Safety shoes
 Choose body protection according to the amount and concentration of the dangerous substance at the work place.
 Wear resistant gloves (consult your safety equipment supplier).

Hygiene measures : Wash hands before breaks and at the end of workday.
 When using do not eat or drink.
 When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : light yellow

light pink

clear

Odour : pungent


Odour Threshold : No data available

pH : 4.1

Melting point/freezing point : 212 °F / 100 °C

Boiling point/boiling range : > 212 °F / 100 °C
 (1013 hPa)


Flash point : does not flash

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Evaporation rate	:	> 1 Ethyl Ether
Flammability (solid, gas)	:	No data available
Self-ignition	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	17.5000000 mmHg
Relative vapour density	:	> 1 AIR=1
Relative density	:	1.3 (68 °F / 20 °C)
Density	:	1.3 g/cm3 (77 °F / 25 °C)
Solubility(ies)		
Water solubility	:	soluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Oxidizing properties	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	Product will not undergo hazardous polymerization.
Conditions to avoid	:	excessive heat Freezing temperatures. Heat, flames and sparks. Heat

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Exposure to air.
Exposure to moisture

Incompatible materials : Acids
Alkali metals
Alkaline earth metals
aluminum
magnesium
Oxidizing agents
Strong bases
water

Hazardous decomposition products : Sulphur oxides
Sodium oxides
sodium sulfide residue
toxic fumes

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if swallowed.

Product:

Acute inhalation toxicity : Remarks: Excessive heat or contact with acids, water and/or ice, releases sulfur dioxide gas which may be harmful or deadly if inhaled.

Components:

SODIUM BISULFITE:

Acute oral toxicity : Assessment: The component/mixture is classified as acute oral toxicity, category 4.

Acute dermal toxicity : LD50 (Rat, male and female): > 2 g/kg
Assessment: No adverse effect has been observed in acute dermal toxicity tests.

Skin corrosion/irritation

Not classified based on available information.


Components:

SODIUM BISULFITE:

Result : Not irritating to skin

Serious eye damage/eye irritation

Not classified based on available information.

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Product:

Remarks : Unlikely to cause eye irritation or injury.
Solutions may be severely irritating or cause burns.

Components:

SODIUM BISULFITE:

Result : Not irritating to eyes

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

SODIUM BISULFITE:

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.


Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data is available on the product itself.

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Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 369 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : LC 50 (Daphnia magna (Water flea)): 833.9 mg/l
Exposure time: 48 h

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

Components:

SODIUM BISULFITE:

Toxicity to fish : LC50 (Gambusia affinis (Mosquito fish)): 240 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 119 mg/l
Exposure time: 48 h
Method: Static
Remarks: Mortality

Persistence and degradability

Product:

Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days
103 mg/l


Chemical Oxygen Demand (COD) : 59,000 mg/l
Method: Chemical oxygen demand
69,300 mg/l

Bioaccumulative potential

Components:

SODIUM BISULFITE:

Partition coefficient: n-octanol/water : Remarks: No data available

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Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.

Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION


International Regulations

IATA-DGR

UN number : UN 2693
Proper shipping name : Bisulphites, aqueous solution, n.o.s. (SODIUM BISULFITE)
Class : 8
Packing group : III
Packing instruction (cargo aircraft) : 856
Packing instruction (passenger aircraft) : 852
Marine pollutant : no

IMDG-Code

UN number : UN 2693
Proper shipping name : BISULPHITES, AQUEOUS SOLUTION, N.O.S. (SODIUM BISULFITE)
Class : 8
Packing group : III
EmS Code : F-A, S-B

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Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

UN number : UN 2693
 Proper shipping name : Bisulfites, aqueous solutions, n.o.s.
 Class : 8
 Packing group : III
 ERG Code : 154
 Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
SODIUM BISULFITE	7631-90-5	5000	13833

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Acute toxicity (any route of exposure)

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

TCSI : On the inventory, or in compliance with the inventory

TSCA : All substances listed as active on the TSCA inventory

AIIC : On the inventory, or in compliance with the inventory

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DSL : All components of this product are on the Canadian DSL

ENCS : On the inventory, or in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

NZIOC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION
Further information

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Full text of H-Statements

H302 : Harmful if swallowed.

Full text of other abbreviations

Acute Tox. : Acute toxicity


ACGIH : USA. ACGIH Threshold Limit Values (TLV)

NIOSH REL : USA. NIOSH Recommended Exposure Limits

ACGIH / TWA : 8-hour, time-weighted average

NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour
workday during a 40-hour workweek

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO -

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International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data


SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Amersite™ 11 CORROSION INHIBITOR
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : BOILER WATER TREATMENT

Details of the supplier of the safety data sheet Solenis LLC 2475 Pinnacle Drive Wilmington, DE 19803 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion : Category 1

Serious eye damage : Category 1

GHS label elements

Hazard pictograms :




Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

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P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (%)
sodium hydroxide	1310-73-2	Met. Corr. 1; H290 Skin Corr. 1A; H314 Eye Dam. 1; H318	>= 1.5 - < 5


Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : Move to fresh air.
If breathed in, move person into fresh air.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : If on skin, rinse well with water.


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Wash contaminated clothing before re-use.

- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : Get medical attention immediately.
Do NOT induce vomiting.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Cough
lung edema (fluid buildup in the lung tissue)
Difficulty in breathing
Sulphur dioxide may be released if this material comes into contact with acids, water and/or ice. In contact with moisture, sulfur dioxide forms sulfuric acid which is corrosive to skin and mucous membranes.
Causes serious eye damage.
Causes severe burns.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO₂)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : sodium monoxide
sodium sulphide residue
sulfur dioxide
toxic fumes
corrosive vapors

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Sodium oxides
Carbon monoxide
Carbon dioxide (CO₂)
Hydrocarbons


- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.
When diluting, always add the product to water. Never add water to the product.
Container hazardous when empty.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

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Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
sodium hydroxide	1310-73-2	C	2 mg/m3	ACGIH
		C	2 mg/m3	NIOSH REL
		TWA	2 mg/m3	OSHA Z-1
		C	2 mg/m3	OSHA P0

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment


Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.
Maintain eye wash station in immediate work area.


Skin and body protection : Wear as appropriate:
Impervious clothing
Chemical resistant apron
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.

Hygiene measures : Wash hands before breaks and at the end of workday.
When using do not eat or drink.
Ensure that eyewash stations and safety showers are close to the workstation location.
When using do not smoke.

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	greenish-blue
Odour	:	No data available
Odour Threshold	:	No data available
pH	:	13.2
Melting point/freezing point	:	No data available
Boiling point/boiling range	:	212 °F / 100 °C (1,013.333333 hPa) Calculated Phase Transition Liquid/Gas
Flash point	:	Not applicable
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Self-ignition	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	1.142 g/cm ³ (77 °F / 25 °C)
Solubility(ies)		
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Decomposition temperature	:	No data available

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Viscosity
 Viscosity, dynamic : No data available
 Viscosity, kinematic : No data available
 Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.
 Chemical stability : Stable under recommended storage conditions.
 Possibility of hazardous reactions : Product will not undergo hazardous polymerization.
 Conditions to avoid : excessive heat
 Exposure to sunlight.
 Incompatible materials : Acids
 halogenated hydrocarbons
 Metals
 organic nitro compounds
 Strong oxidizing agents
 water
 Hazardous decomposition products : Sodium oxides
 sodium sulfide residue
 toxic fumes
 corrosive vapors
 Carbon monoxide
 Carbon dioxide (CO₂)
 Hydrocarbons

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.


Product:

Acute inhalation toxicity : Remarks: Excessive heat or contact with acids, water and/or ice, releases sulfur dioxide gas which may be harmful or deadly if inhaled.

Components:

sodium hydroxide:

Acute oral toxicity : LDLo (Rabbit): 500 mg/kg

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Skin corrosion/irritation

Causes severe burns.

Product:

Remarks : Causes severe skin burns and eye damage.
The feeling of irritation or pain may be delayed.

Components:

sodium hydroxide:

Result : Causes severe burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks : May cause irreversible eye damage.
Solutions may be severely irritating or cause burns.

Components:

sodium hydroxide:

Result : Corrosive to eyes

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.


NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

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STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 8,400 mg/l
Exposure time: 96 h
Test Type: static test

LC50 (Pimephales promelas (fathead minnow)): 10,800 mg/l
Exposure time: 48 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : LC50 (Water flea (Ceriodaphnia dubia)): 4,060 mg/l
Exposure time: 48 h
Test Type: static test

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

Components:

sodium hydroxide:


Toxicity to fish : LC50 (Gambusia affinis (Mosquito fish)): 125 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 34.59 - 47.13 mg/l
Exposure time: 48 h
Remarks: Intoxication

Persistence and degradability

Components:

sodium hydroxide:

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Biodegradability : Result: The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations


IATA-DGR

UN number : UN 3266
Proper shipping name : Corrosive liquid, basic, inorganic, n.o.s. (SODIUM HYDROXIDE)

Class : 8
Packing group : II
Packing instruction (cargo aircraft) : 855
Packing instruction (passenger aircraft) : 851

IMDG-Code

UN number : UN 3266
Proper shipping name : CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM

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Class : 8 (HYDROXIDE)
 Packing group : II
 EmS Code : F-A, S-B
 Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

UN number : UN 3266
 Proper shipping name : Corrosive liquid, basic, inorganic, n.o.s. (SODIUM HYDROXIDE)
 Class : 8
 Packing group : II
 ERG Code : 154
 Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
sodium hydroxide	1310-73-2	1000	29708

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.


SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Skin corrosion or irritation
 Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

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Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : Not in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory
- NZIOC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information


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Full text of H-Statements

- H290 : May be corrosive to metals.
- H314 : Causes severe skin burns and eye damage.
- H318 : Causes serious eye damage.

Full text of other abbreviations

- Eye Dam. : Serious eye damage
- Met. Corr. : Corrosive to metals
- Skin Corr. : Skin corrosion
- ACGIH : USA. ACGIH Threshold Limit Values (TLV)
- NIOSH REL : USA. NIOSH Recommended Exposure Limits
- OSHA P0 : USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
- OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

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ACGIH / C : Ceiling limit
 NIOSH REL / C : Ceiling value not be exceeded at any time.
 OSHA P0 / C : Ceiling limit
 OSHA Z-1 / TWA : 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet


Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports


The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any

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other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Amersite™ 61W CORROSION INHIBITOR
 ™ Trademark, Solenis or its subsidiaries or affiliates,
 registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Industrial chemical

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

GHS label elements

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS


Substance / Mixture : Mixture

Components

No hazardous ingredients

SECTION 4. FIRST AID MEASURES


General advice : No hazards which require special first aid measures.

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- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
- In case of eye contact : Remove contact lenses.
Protect unharmed eye.
- If swallowed : Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : No symptoms known or expected.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Specific hazards during firefighting : If product is heated above its flash point it will produce vapors sufficient to support combustion. Vapors are heavier than air and may travel along the ground and be ignited by heat, pilot lights, other flames and ignition sources at locations near the point of release.
Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Standard procedure for chemical fires.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

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SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Smoking, eating and drinking should be prohibited in the application area. For personal protection see section 8.
- Conditions for safe storage : Electrical installations / working materials must comply with the technological safety standards.
- Materials to avoid : No materials to be especially mentioned.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION


Components with workplace control parameters

Contains no substances with occupational exposure limit values.

- Engineering measures** : General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

- Respiratory protection : No personal respiratory protective equipment normally required.
- Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.

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Skin and body protection : Wear as appropriate:
 Safety shoes
 Wear resistant gloves (consult your safety equipment supplier).

Hygiene measures : General industrial hygiene practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : white
 light yellow

Odour : No data available

Odour Threshold : No data available

pH : 7

Melting point/freezing point : No data available

Boiling point/boiling range : 212 °F / 100 °C
 (1,013.333333 hPa)
 Calculated Phase Transition Liquid/Gas

Flash point : 260.01 °F / 126.67 °C
 Calculated Flash Point

Evaporation rate : > 1
 Ethyl Ether

Flammability (solid, gas) : No data available


Self-ignition : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : 23.3333333 hPa (68 °F / 20 °C)
 Calculated Vapor Pressure

Relative vapour density : No data available

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Relative density : No data available

Density : 1.060 g/cm³ (77.00 °F / 25.00 °C)

Solubility(ies)

Water solubility : No data available

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

Incompatible materials : reactive metals such as aluminum and magnesium
strong bases
Strong oxidizing agents

Hazardous decomposition products : Carbon monoxide
Carbon dioxide (CO₂)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity


Not classified based on available information.

Skin corrosion/irritation

Not classified based on available information.

Serious eye damage/eye irritation

Not classified based on available information.

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Product:

Remarks : Unlikely to cause eye irritation or injury.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:


Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100,000 mg/l
 Exposure time: 96 h
 Test Type: static test

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LC50 (Pimephales promelas (fathead minnow)): 66,000 mg/l
 Exposure time: 96 h
 Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : LC 50 (Daphnia magna (Water flea)): 6,900 mg/l
 Exposure time: 48 h
 Test Type: static test

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

Persistence and degradability

Product:

Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days
 44,000 mg/l

Chemical Oxygen Demand (COD) : 79,000 mg/l
 Method: Chemical oxygen demand

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.


Contaminated packaging : Empty remaining contents.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

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IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

Not regulated as a dangerous good

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards


SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : All components are listed on the inventory, regulatory obligations/restrictions apply
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory

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PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

NZIOC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.


SECTION 16. OTHER INFORMATION

Further information

Revision Date : 09/14/2022

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECl - Thailand

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Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data


SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Amersite™ CHZ CORROSION INHIBITOR
 ™ Trademark, Solenis or its subsidiaries or affiliates,
 registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Corrosion inhibitor


Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin sensitisation : Category 1

GHS label elements


Hazard pictograms : 

Signal word : Warning

Hazard statements : H317 May cause an allergic skin reaction.

Precautionary statements : **Prevention:**
 P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
 P272 Contaminated work clothing must not be allowed out of the workplace.
 P280 Wear protective gloves.

Response:
 P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

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P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P363 Wash contaminated clothing before reuse.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (%)
Carbonic dihydrazide	497-18-7	Skin Sens. 1; H317	>= 5 - < 10

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : Remove contaminated clothing. If irritation develops, get medical attention.
If on skin, rinse well with water.
First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
Wash contaminated clothing before re-use.
- In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
If eye irritation persists, consult a specialist.
- If swallowed : Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

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Most important symptoms and effects, both acute and delayed : No symptoms known or expected.
May cause an allergic skin reaction.

Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
Nitrogen oxides (NOx)

Specific extinguishing methods : Product is compatible with standard fire-fighting agents.

Further information : Standard procedure for chemical fires.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.


SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.

Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

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- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.
Do not smoke.
Container hazardous when empty.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Electrical installations / working materials must comply with the technological safety standards.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

- Engineering measures** : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.


Personal protective equipment

Hand protection

- Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

- Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.

- Skin and body protection : Wear resistant gloves (consult your safety equipment supplier).
Wear as appropriate:
Impervious clothing
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Discard gloves that show tears, pinholes, or signs of wear.

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Hygiene measures : Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : colourless

Odour : No data available

Odour Threshold : No data available

pH : 7 - 9

Melting point/freezing point : 30.0 °F / -1.1 °C

Boiling point/boiling range : > 212 °F / 100 °C

Flash point : Not applicable

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Self-ignition : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : 23.33 hPa (68 °F / 20 °C)
Calculated Vapor Pressure

Relative vapour density : No data available

Relative density : 0.97 - 1.07


Density : 0.97 - 1.07 g/cm³ (77 °F / 25 °C)

Solubility(ies)

Water solubility : No data available

Solubility in other solvents : No data available

Partition coefficient: n- : No data available

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octanol/water

Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

Conditions to avoid : Heat

Incompatible materials : Acids
Strong oxidizing agents

Hazardous decomposition products : Carbon monoxide
Carbon dioxide (CO₂)
Nitrogen oxides (NO_x)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Components:


Carbonic dihydrazide:

Acute oral toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
Method: OECD Test Guideline 420

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: No adverse effect has been observed in acute dermal toxicity tests.

Skin corrosion/irritation

Not classified based on available information.

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Product:

Remarks : May cause skin irritation in susceptible persons.

Components:**Carbonic dihydrazide:**

Result : Mildly irritating to skin

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Remarks : Unlikely to cause eye irritation or injury.

Components:**Carbonic dihydrazide:**

Result : Not irritating to eyes

Respiratory or skin sensitisation**Skin sensitisation**

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Product:

Remarks : May cause allergic skin reaction.

Components:**Carbonic dihydrazide:****Germ cell mutagenicity**

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information**Product:**

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Product:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,053 mg/l
 Exposure time: 96 h
 Test Type: static test

LC50 (Pimephales promelas (fathead minnow)): 149 mg/l
 Exposure time: 96 h
 Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Water flea (Ceriodaphnia dubia)): 110 mg/l
 Exposure time: 48 h
 Test Type: static test

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

Components:**Carbonic dihydrazide:**

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 190 mg/l
 Exposure time: 96 h

LC50 (Oncorhynchus mykiss (rainbow trout)): 360 mg/l
 Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 9.5 mg/l
 Exposure time: 48 h

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Toxicity to algae/aquatic plants : EC50 (algae): 1.5 mg/l
Exposure time: 72 h

Ecotoxicology Assessment

Chronic aquatic toxicity : Not classified based on available information.

Persistence and degradability

Product:

Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days
247 mg/l

Chemical Oxygen Demand (COD) : 18,300 mg/l
Method: Chemical oxygen demand

Components:

Carbonic dihydrazide:

Biodegradability : Result: Readily biodegradable.

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available


SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.

Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

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SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

Not regulated as a dangerous good

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
HYDRAZINE	302-01-2	1	30303

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
HYDRAZINE	302-01-2	1	30303


SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Respiratory or skin sensitization

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

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WARNING: This product can expose you to chemicals including HYDRAZINE, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

Revision Date : 09/09/2022


Full text of H-Statements

H317 : May cause an allergic skin reaction.

Full text of other abbreviations

Skin Sens. : Skin sensitisation

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory

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concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data


SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

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Drewgard™ 315 CLOSED SYSTEM TREATMENT ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 83904	PM 20931-00	Version: 3.2

SECTION 1. IDENTIFICATION

Product identifier

Trade name : Drewgard™ 315
CLOSED SYSTEM TREATMENT
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Industrial chemical

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion : Category 1

Serious eye damage : Category 1

GHS label elements


Hazard pictograms :



Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/
face protection.

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Response:

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (%)
MOLYBDENUM COMPOUND	Trade Secret	Not a hazardous substance or mixture.	>= 15 - < 20
TRIAZOLE DERIVATIVE	Trade Secret	Acute Tox. 4; H302 Skin Corr. 1; H314 Eye Dam. 1; H318	>= 1.5 - < 5
sodium hydroxide	1310-73-2	Met. Corr. 1; H290 Skin Corr. 1A; H314 Eye Dam. 1; H318	>= 1 - < 1.5

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

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Drewgard™ 315 CLOSED SYSTEM TREATMENT ™ Trademark, Solenis or its subsidiaries or affiliates, registered in various countries 83904	Version: 3.2

- If inhaled : Move to fresh air.
If breathed in, move person into fresh air.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : If on skin, rinse well with water.
Wash contaminated clothing before re-use.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : Get medical attention immediately.
Do NOT induce vomiting.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Cough
lung edema (fluid buildup in the lung tissue)
Difficulty in breathing
Causes serious eye damage.
Causes severe burns.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

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- Hazardous combustion products : hydrogen cyanide in reducing atmospheres
nitrogen oxides (NOx)
Carbon monoxide
Carbon dioxide (CO2)
corrosive vapors
Sodium oxides
toxic fumes
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.
When diluting, always add the product to water. Never add water to the product.
Container hazardous when empty.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.

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Observe label precautions.
Electrical installations / working materials must comply with
the technological safety standards.

Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION


Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
MOLYBDENUM COMPOUND	Trade Secret	TWA (total dust)	15 mg/m ³ (Molybdenum)	OSHA Z-1
		TWA	5 mg/m ³ (Molybdenum)	OSHA Z-1
		TWA (Inhalable particulate matter)	10 mg/m ³ (Molybdenum)	ACGIH
		TWA (Respirable particulate matter)	3 mg/m ³ (Molybdenum)	ACGIH
		TWA (Respirable particulate matter)	0.5 mg/m ³ (Molybdenum)	ACGIH
		TWA (Total dust)	10 mg/m ³ (Molybdenum)	OSHA P0
		TWA	5 mg/m ³ (Molybdenum)	OSHA P0
sodium hydroxide	1310-73-2	C	2 mg/m ³	ACGIH
		C	2 mg/m ³	NIOSH REL
		TWA	2 mg/m ³	OSHA Z-1
		C	2 mg/m ³	OSHA P0

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment


Hand protection

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- Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.
- Eye protection : Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.
Maintain eye wash station in immediate work area.
- Skin and body protection : Wear as appropriate:
Impervious clothing
Chemical resistant apron
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.
- Hygiene measures : Wash hands before breaks and at the end of workday.
When using do not eat or drink.
Ensure that eyewash stations and safety showers are close to the workstation location.
When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Colour : light brown
- Odour : No data available
- Odour Threshold : No data available
- pH : > 12.5
- Melting point/freezing point : 25 °F / -4 °C
- Boiling point/boiling range : 212 °F / 100 °C
(1,013.33 hPa)
Calculated Phase Transition Liquid/Gas
- Flash point : No data available
- Evaporation rate : > 1
Ethyl Ether
- Flammability (solid, gas) : No data available

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- Self-ignition : No data available
- Upper explosion limit / Upper flammability limit : No data available
- Lower explosion limit / Lower flammability limit : No data available
- Vapour pressure : 23.33 hPa (759.99 °F / 404.44 °C)
Calculated Vapor Pressure
- Relative vapour density : > 1
AIR=1
- Relative density : 1.142 (77 °F / 25 °C)
- Density : 1.133 - 1.155 g/cm3 (77 °F / 25 °C)
- Solubility(ies)
 - Water solubility : completely soluble
 - Solubility in other solvents : No data available
- Partition coefficient: n-octanol/water : No data available
- Decomposition temperature : No data available
- Viscosity
 - Viscosity, dynamic : No data available
 - Viscosity, kinematic : No data available
- Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

- Reactivity : No decomposition if stored and applied as directed.
- Chemical stability : Stable under recommended storage conditions.
- Possibility of hazardous reactions : Product will not undergo hazardous polymerization.
- Conditions to avoid : Exposure to sunlight.
Exposure to air or moisture over prolonged periods.
- Incompatible materials : Acids
halogenated hydrocarbons
Metals
organic nitro compounds

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Strong oxidizing agents

Hazardous decomposition products : molybdenum fumes
 Hydrogen cyanide (hydrocyanic acid)
 Nitrogen oxides (NOx)
 Carbon monoxide
 Carbon dioxide (CO2)
 corrosive vapors
 Sodium oxides
 toxic fumes

SECTION 11. TOXICOLOGICAL INFORMATION
Acute toxicity

Not classified based on available information.

Components:
TRIAZOLE DERIVATIVE:

Acute oral toxicity : LD50 (Rat, female): 735 mg/kg

 Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
 Assessment: Not classified as acutely toxic by dermal absorption under GHS.

sodium hydroxide:

Acute oral toxicity : LDLo (Rabbit): 500 mg/kg

Skin corrosion/irritation

Causes severe burns.

Product:

Result : Corrosive to skin

 Remarks : Causes severe skin burns and eye damage.
 The feeling of irritation or pain may be delayed.

Components:
MOLYBDENUM COMPOUND:


Result : Possibly irritating to skin

TRIAZOLE DERIVATIVE:

Result : Corrosive to skin

sodium hydroxide:

Result : Causes severe burns.

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Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Result : Corrosive to eyes

Remarks : May cause irreversible eye damage.

Components:

MOLYBDENUM COMPOUND:

Result : Possibly irritating to eyes

TRIAZOLE DERIVATIVE:

Result : Corrosive to eyes

sodium hydroxide:

Result : Corrosive to eyes

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity


Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

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Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 707 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : LC 50 (Daphnia magna (Water flea)): 7,070 mg/l
Exposure time: 48 h
Test Type: static test
Remarks: Information given is based on data on the components and the ecotoxicology of similar products.

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

Components:

TRIAZOLE DERIVATIVE:


Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): > 173 mg/l
Exposure time: 96 h

LC50 (Oncorhynchus mykiss (rainbow trout)): ca. 25 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 280 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 26.2 mg/l
Exposure time: 72 h
Test Type: Growth inhibition

EbC50 (Pseudokirchneriella subcapitata (green algae)): 32 mg/l
Exposure time: 96 h
Test Type: Growth inhibition

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Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10 (Daphnia magna (Water flea)): 0.4 mg/l
 Exposure time: 21 d
 Test Type: semi-static test
 Method: OECD Test Guideline 211
 Remarks: Information given is based on data obtained from similar substances.

sodium hydroxide:

Toxicity to fish : LC50 (Gambusia affinis (Mosquito fish)): 125 mg/l
 Exposure time: 96 h
 Method: Static
 Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 34.59 - 47.13 mg/l
 Exposure time: 48 h
 Remarks: Intoxication

Persistence and degradability

Product:

Biodegradability : Remarks: Not readily biodegradable.
 Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days
 56,000 mg/l
 Chemical Oxygen Demand (COD) : 61,000 mg/l
 Method: Chemical oxygen demand

Components:

TRIAZOLE DERIVATIVE:

Biodegradability : Result: Not readily biodegradable.
 Method: OECD Test Guideline 301F

Bioaccumulative potential

Components:

TRIAZOLE DERIVATIVE:

Partition coefficient: n-octanol/water : log Pow: 0.658


Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available

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SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

- Waste from residues : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.
- Dispose of in accordance with all applicable local, state and federal regulations.
- Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

- UN number : UN 1719
Proper shipping name : Caustic alkali liquid, n.o.s. (SODIUM HYDROXIDE)
Class : 8
Packing group : III
Packing instruction (cargo aircraft) : 856
Packing instruction (passenger aircraft) : 852
Marine pollutant : no

IMDG-Code

- UN number : UN 1719
Proper shipping name : CAUSTIC ALKALI LIQUID, N.O.S. (SODIUM HYDROXIDE)
Class : 8
Packing group : III
EmS Code : F-A, S-B
Marine pollutant : no


Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

- UN number : UN 1719
Proper shipping name : Caustic alkali liquids, n.o.s. (SODIUM HYDROXIDE)

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Class : 8
Packing group : III
ERG Code : 154
Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
sodium hydroxide	1310-73-2	1000	97665

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory

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- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory
- NZIOC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

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Full text of H-Statements

- H290 : May be corrosive to metals.
- H302 : Harmful if swallowed.
- H314 : Causes severe skin burns and eye damage.
- H318 : Causes serious eye damage.

Full text of other abbreviations

- Acute Tox. : Acute toxicity
- Eye Dam. : Serious eye damage
- Met. Corr. : Corrosive to metals
- Skin Corr. : Skin corrosion
- ACGIH : USA. ACGIH Threshold Limit Values (TLV)
- NIOSH REL : USA. NIOSH Recommended Exposure Limits
- OSHA P0 : USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
- OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
- ACGIH / TWA : 8-hour, time-weighted average
- ACGIH / C : Ceiling limit
- NIOSH REL / C : Ceiling value not be exceeded at any time.
- OSHA P0 / TWA : 8-hour time weighted average
- OSHA P0 / C : Ceiling limit
- OSHA Z-1 / TWA : 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide;

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GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data


SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Drewgard™ 2808
CLOSED SYSTEM TREATMENT
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Water treatment chemical

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)


Oxidizing liquids : Category 2
Acute toxicity (Oral) : Category 4
Skin irritation : Category 2
Eye irritation : Category 2A
Reproductive toxicity : Category 1B

GHS label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : H272 May intensify fire; oxidizer.
H302 Harmful if swallowed.

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H315 Causes skin irritation.
H319 Causes serious eye irritation.
H360 May damage fertility or the unborn child.

Precautionary statements :

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat.
P220 Keep/ Store away from clothing/ combustible materials.
P221 Take any precaution to avoid mixing with combustibles.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards


None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (%)
SODIUM NITRITE	7632-00-0	Ox. Sol. 2; H272 Acute Tox. 3; H301	>= 15 - < 20


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		Eye Irrit. 2A; H319	
INORGANIC SALT	Trade Secret	Eye Irrit. 2A; H319 Repr. 1B; H360	>= 5 - < 10
ALKALINE	Trade Secret	Met. Corr. 1; H290 Skin Corr. 1A; H314 Eye Dam. 1; H318	>= 1 - < 1.5
Sodium nitrate	7631-99-4	Ox. Sol. 3; H272 Eye Irrit. 2A; H319	>= 0.1 - < 0.5

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : Remove contaminated clothing. If irritation develops, get medical attention.
If on skin, rinse well with water.
Wash contaminated clothing before re-use.
If on clothes, remove clothes.
- In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Protect unharmed eye.
- If swallowed : Obtain medical attention.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Nose bleeding
Cough
hair loss
Shortness of breath
lung edema (fluid buildup in the lung tissue)
Difficulty in breathing

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Overexposure to this product (or a component) may cause methemoglobinemia, which in sufficient concentration causes cyanosis. Severe cyanosis may require intravenous injection of methylene blue. Methylene blue is contraindicated if the patient has confirmed or suspected glucose-6-phosphate dehydrogenase deficiency.
Harmful if swallowed.
Causes skin irritation.
Causes serious eye irritation.
May damage fertility or the unborn child.


Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Carbon dioxide (CO2)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.
Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
nitrogen compounds
Nitrogen oxides (NOx)
corrosive vapors
Sodium oxides
toxic fumes
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Use a water spray to cool fully closed containers.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, : Use personal protective equipment.

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- protective equipment and emergency procedures : Ensure adequate ventilation.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Keep away from combustible material.
- Advice on safe handling : Do not breathe vapours/dust.
Do not smoke.
When diluting, always add the product to water. Never add water to the product.
Container hazardous when empty.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of	Control parameters /	Basis
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		exposure)	Permissible concentration	
INORGANIC SALT	Trade Secret	TWA	5 mg/m3	NIOSH REL
		TWA	10 mg/m3	OSHA P0
		TWA (Inhalable particulate matter)	2 mg/m3 (Borate)	ACGIH
		STEL (Inhalable particulate matter)	6 mg/m3 (Borate)	ACGIH
ALKALINE	Trade Secret	C	2 mg/m3	ACGIH
		C	2 mg/m3	NIOSH REL
		TWA	2 mg/m3	OSHA Z-1
		C	2 mg/m3	OSHA P0

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment


Respiratory protection : A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

In the case of vapour formation use a respirator with an approved filter.

Hand protection
Material : Nitrile rubber

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.

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Skin and body protection : Wear as appropriate:
Impervious clothing
Safety shoes
Flame-resistant clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.

Hygiene measures : Wash hands before breaks and at the end of workday.
When using do not eat or drink.
When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : light yellow

Odour : No data available

Odour Threshold : No data available

pH : 12

Melting point/freezing point : 8 °F / -13 °C

Boiling point/boiling range : 212 °F / 100 °C

Flash point : does not flash

Evaporation rate : > 1
Ethyl Ether


Flammability (solid, gas) : No data available

Self-ignition : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : 17.5 mmHg

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Relative vapour density : No data available

Relative density : 1.2 (77 °F / 25 °C)

Density : 1.200 g/cm3 (77 °F / 25 °C)

Solubility(ies)

Water solubility : completely soluble

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.


Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Product will not undergo hazardous polymerization.

Conditions to avoid : Do not allow evaporation to dryness.
Heat, flames and sparks.
Exposure to sunlight.
Exposure to moisture

Heat, flames and sparks.

Incompatible materials : Acids
activated carbon
Alkali metals
ammonium salts
Amines
Ammonia
Combustible material
Cyanides
halogenated hydrocarbons
Metals
metal hydrides
metal salts
organic nitro compounds

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Hazardous decomposition products	: oxidizable substances Powdered metals Reducing agents Strong oxidizing agents Carbon monoxide Carbon dioxide (CO2) nitrogen compounds Nitrogen oxides (NOx) corrosive vapors Sodium oxides toxic fumes
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SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if swallowed.

Components:

SODIUM NITRITE:

Acute oral toxicity	:	LD50 (Rat): 180 mg/kg
Acute inhalation toxicity	:	LC 50 (Rat): 5.5 mg/l Exposure time: 4 h Test atmosphere: dust/mist

INORGANIC SALT:

Acute oral toxicity	:	LD50 (Rat): 4,500 - 5,000 mg/kg
Acute inhalation toxicity	:	LC 50 (Rat): > 2 mg/l Test atmosphere: dust/mist Assessment: Not classified as acutely toxic by inhalation under GHS. Remarks: see user defined free text
Acute dermal toxicity	:	LD50 (Rabbit): > 10,000 mg/kg

ALKALINE:

Acute oral toxicity	:	LDLo (Rabbit): 500 mg/kg
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Sodium nitrate:

Acute oral toxicity	:	LD50 (Rat): ca. 3,430 mg/kg Method: OECD Test Guideline 401
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Skin corrosion/irritation

Causes skin irritation.

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Product:

Result : Severely irritating to skin

Remarks : May cause skin irritation and/or dermatitis.
 The feeling of irritation or pain may be delayed.

Components:**SODIUM NITRITE:**

Result : Not irritating to skin

INORGANIC SALT:

Result : Not irritating to skin

ALKALINE:

Result : Causes severe burns.

Sodium nitrate:

Species : Rabbit
 Method : OECD Test Guideline 404
 Result : Not irritating to skin
 Remarks : Information given is based on data obtained from similar
 substances.

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Result : Severely irritating to eyes

Remarks : Vapours may cause irritation to the eyes, respiratory system
 and the skin.
 Causes serious eye irritation.

Components:**SODIUM NITRITE:**


Result : Irritating to eyes

INORGANIC SALT:

Result : Irritating to eyes

ALKALINE:

Result : Corrosive to eyes

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Sodium nitrate:

Species : Rabbit
 Result : Irritating to eyes
 Method : OECD Test Guideline 405

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC Group 2A: Probably carcinogenic to humans
 sodium nitrite 7632-00-0
 (nitrite (ingested) under conditions that result in endogenous nitrosation)
 Group 2A: Probably carcinogenic to humans
 Sodium nitrate 7631-99-4
 (nitrate (ingested) under conditions that result in endogenous nitrosation)

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

May damage fertility or the unborn child.

Components:

INORGANIC SALT:

Reproductive toxicity - Assessment : Clear evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure


Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

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Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,770 mg/l
Exposure time: 96 h
Test Type: static test

LC50 (Pimephales promelas (fathead minnow)): 1,250 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 221 mg/l
Exposure time: 48 h
Test Type: static test

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

Components:

SODIUM NITRITE:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.54 - 26.3 mg/l
Exposure time: 96 h
Test Type: flow-through test


Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 15.4 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
Exposure time: 72 h
Test Type: Growth inhibition
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : NOEC (Ictalurus catus (catfish)): 6.16 mg/l
Exposure time: 31 d
Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Aquatic invertebrates): 9.86 mg/l
Exposure time: 80 d
Test Type: static test

Toxicity to microorganisms : EC10 (activated sludge): 210 mg/l

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Exposure time: 3 h
Test Type: Static
Method: OECD Test Guideline 209

INORGANIC SALT:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,800 mg/l
Exposure time: 48 h
Test Type: static test

ALKALINE:

Toxicity to fish : LC50 (Gambusia affinis (Mosquito fish)): 125 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 34.59 - 47.13 mg/l
Exposure time: 48 h
Remarks: Intoxication

Sodium nitrate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,355 - 2,063 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : LC 50 (Daphnia magna (Water flea)): 3,581 mg/l
Exposure time: 48 h
Method: Static
Remarks: Mortality

Persistence and degradability

Product:


Biochemical Oxygen Demand (BOD) : Biochemical oxygen demand within 5 days < 100 mg/l

Chemical Oxygen Demand (COD) : 58,800 mg/l

Components:

SODIUM NITRITE:

Biodegradability : Result: The methods for determining biodegradability are not applicable to inorganic substances.

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Bioaccumulative potential

Components:

SODIUM NITRITE:

Partition coefficient: n-octanol/water : log Pow: -3.700 (77 °F / 25 °C)

Mobility in soil

Components:

SODIUM NITRITE:

Stability in soil : Remarks: Not expected to adsorb on soil.

Other adverse effects

Product:

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN number : UN 3139
Proper shipping name : Oxidizing liquid, n.o.s. (SODIUM NITRITE)
Class : 5.1
Packing group : III
Packing instruction (cargo) : 555

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aircraft)
Packing instruction : 551
(passenger aircraft)
Marine pollutant : no

IMDG-Code

UN number : UN 3139
Proper shipping name : OXIDIZING LIQUID, N.O.S. (SODIUM NITRITE)
Class : 5.1
Packing group : III
EmS Code : F-A, S-Q
Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

UN number : UN 3139
Proper shipping name : Oxidizing liquid, n.o.s. (SODIUM NITRITE)
Class : 5.1
Packing group : III
ERG Code : 140
Marine pollutant : no

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
SODIUM NITRITE	7632-00-0	100	526


SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Oxidiser (liquid, solid or gas)
Acute toxicity (any route of exposure)
Reproductive toxicity

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Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

SODIUM 7632-00-0 >= 10 - < 20 %
NITRITE

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIRC : All components are listed on the inventory, regulatory obligations/restrictions apply
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory

TSCA list

The following substance(s) is/are subject to a Significant New Use Rule:
SODIUM NITRITE 7632-00-0

The following substance(s) is/are subject to TSCA 12(b) export notification requirements:
SODIUM NITRITE 7632-00-0

SECTION 16. OTHER INFORMATION

Further information

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Full text of H-Statements

H272 : May intensify fire; oxidizer.
 H290 : May be corrosive to metals.
 H301 : Toxic if swallowed.
 H314 : Causes severe skin burns and eye damage.
 H318 : Causes serious eye damage.
 H319 : Causes serious eye irritation.
 H360 : May damage fertility or the unborn child.

Full text of other abbreviations

Acute Tox. : Acute toxicity
 Eye Dam. : Serious eye damage
 Eye Irrit. : Eye irritation
 Met. Corr. : Corrosive to metals
 Ox. Sol. : Oxidizing solids
 Repr. : Reproductive toxicity
 Skin Corr. : Skin corrosion
 ACGIH : USA. ACGIH Threshold Limit Values (TLV)
 NIOSH REL : USA. NIOSH Recommended Exposure Limits
 OSHA P0 : USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
 OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
 ACGIH / TWA : 8-hour, time-weighted average
 ACGIH / STEL : Short-term exposure limit
 ACGIH / C : Ceiling limit
 NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
 NIOSH REL / C : Ceiling value not be exceeded at any time.
 OSHA P0 / TWA : 8-hour time weighted average
 OSHA P0 / C : Ceiling limit
 OSHA Z-1 / TWA : 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect

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Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECL - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

NALCO® BT-5010 BOILER WATER TREATMENT

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : NALCO® BT-5010 BOILER WATER TREATMENT

Other means of identification : Not applicable.

Recommended use : BOILER WATER TREATMENT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630) 305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 12/09/2020

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Skin corrosion : Category 1B
Serious eye damage : Category 1

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : Causes severe skin burns and eye damage.

Precautionary Statements : **Prevention:**
Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair):
Take off immediately all contaminated clothing. Rinse skin with water/shower. IF
INHALED: Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER/doctor. IF IN EYES: Rinse cautiously with
water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

SAFETY DATA SHEET

NALCO® BT-5010 BOILER WATER TREATMENT

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Sodium Hydroxide	1310-73-2	1 - 5

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

If swallowed : Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.

Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.

Notes to physician : Treat symptomatically.

Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : None known.

Specific hazards during firefighting : Not flammable or combustible.

Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides
Oxides of phosphorus

Special protective equipment for firefighters : Use personal protective equipment.

Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

SAFETY DATA SHEET

NALCO® BT-5010 BOILER WATER TREATMENT

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Flush away traces with water.

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Do not ingest. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Conditions for safe storage : Do not store near acids. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.
- Unsuitable material : not determined

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Sodium Hydroxide	1310-73-2	Ceiling	2 mg/m ³	ACGIH
		Ceiling	2 mg/m ³	NIOSH REL
		TWA	2 mg/m ³	OSHA Z1

- Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

- Eye protection : Safety goggles
Face-shield
- Hand protection : Wear the following personal protective equipment:
Standard glove type.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

SAFETY DATA SHEET

NALCO® BT-5010 BOILER WATER TREATMENT

- Skin protection : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing
- Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Liquid
- Colour : Light yellow
Hazy
- Odour : odourless
- Flash point : > 93.3 °C
- pH : 13.4,(100 %), Method: ASTM E 70
- Odour Threshold : no data available
- Melting point/freezing point : Freezing Point: 0 °C, ASTM D-1177
- Initial boiling point and boiling range : no data available
- Evaporation rate : no data available
- Flammability (solid, gas) : Not applicable.
- Upper explosion limit : no data available
- Lower explosion limit : no data available
- Vapour pressure : no data available
- Relative vapour density : no data available
- Relative density : 1.04 - 1.08, (25 °C),
- Density : 8.7 - 9.0 lb/gal
- Water solubility : completely soluble
- Solubility in other solvents : no data available
- Partition coefficient: n-octanol/water : no data available
- Auto-ignition temperature : no data available
- Thermal decomposition : no data available
- Viscosity, dynamic : < 4 mPa.s (22 °C)

SAFETY DATA SHEET

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Viscosity, kinematic : no data available
Molecular weight : no data available
VOC : 0 %, 0 g/l, EPA Method 24

Section: 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.
Conditions to avoid : None known.
Incompatible materials : Strong acids
Hazardous decomposition products : In case of fire, hazardous decomposition products may be produced such as:
Carbon oxides
Oxides of phosphorus

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes : Causes serious eye damage.
Skin : Causes severe skin burns.
Ingestion : Causes digestive tract burns.
Inhalation : May cause nose, throat, and lung irritation.
Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact : Redness, Pain, Corrosion
Skin contact : Redness, Pain, Corrosion
Ingestion : Corrosion, Abdominal pain
Inhalation : Respiratory irritation, Cough

Toxicity

Product

SAFETY DATA SHEET

NALCO® BT-5010 BOILER WATER TREATMENT

Acute oral toxicity	:	Acute toxicity estimate: > 5,000 mg/kg
Acute inhalation toxicity	:	no data available
Acute dermal toxicity	:	Acute toxicity estimate: > 5,000 mg/kg
Skin corrosion/irritation	:	no data available
Serious eye damage/eye irritation	:	no data available
Respiratory or skin sensitization	:	no data available
Carcinogenicity	:	no data available
Reproductive effects	:	no data available
Germ cell mutagenicity	:	no data available
Teratogenicity	:	no data available
STOT - single exposure	:	no data available
STOT - repeated exposure	:	no data available
Aspiration toxicity	:	no data available

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : This product has no known ecotoxicological effects.

Product

Toxicity to fish : LC50 Oncorhynchus mykiss (rainbow trout): > 5,000 mg/l
Exposure time: 96 hrs
Test substance: Similar Product
Test Type: Static

NOEC Oncorhynchus mykiss (rainbow trout): 5,000 mg/l
Exposure time: 96 hrs
Test substance: Similar Product
Test Type: Static

Toxicity to daphnia and other aquatic invertebrates : EC50 Daphnia magna (Water flea): 3,536 mg/l
Exposure time: 48 hrs
Test substance: Similar Product
Test Type: Static

NOEC Daphnia magna (Water flea): 2,500 mg/l
Exposure time: 48 hrs
Test substance: Similar Product
Test Type: Static

Persistence and degradability

no data available

Mobility

SAFETY DATA SHEET

NALCO® BT-5010 BOILER WATER TREATMENT

no data available

Bioaccumulative potential

no data available

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

Hazardous Waste:	: D002
Disposal methods	: Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.
Disposal considerations	: Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Proper shipping name	: SODIUM HYDROXIDE SOLUTION
Technical name(s)	: Sodium Hydroxide
UN/ID No.	: UN 1824
Transport hazard class(es)	: 8
Packing group	: III
Reportable Quantity (per package)	: 36,832 lbs
RQ Component	: Sodium Hydroxide

Air transport (IATA)

Proper shipping name	: SODIUM HYDROXIDE SOLUTION
Technical name(s)	: Sodium Hydroxide
UN/ID No.	: UN 1824
Transport hazard class(es)	: 8
Packing group	: III
Reportable Quantity (per package)	: 36,832 lbs
RQ Component	: Sodium Hydroxide

Sea transport (IMDG/IMO)

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Proper shipping name : SODIUM HYDROXIDE SOLUTION
Technical name(s) : Sodium Hydroxide
UN/ID No. : UN 1824
Transport hazard class(es) : 8
Packing group : III

Section: 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Sodium Hydroxide	1310-73-2	1000	36832

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

United States TSCA Inventory

On or in compliance with the active portion of the TSCA inventory

Australia. Australian Industrial Chemicals Introduction Scheme (AICIS)

On the inventory, or in compliance with the inventory.

Japan. ENCS - Existing and New Chemical Substances Inventory

not determined

Korea. Korean Existing Chemicals Inventory (KECI)

SAFETY DATA SHEET

NALCO® BT-5010 BOILER WATER TREATMENT

On the inventory, or in compliance with the inventory.

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

On the inventory, or in compliance with the inventory.

China Inventory of Existing Chemical Substances

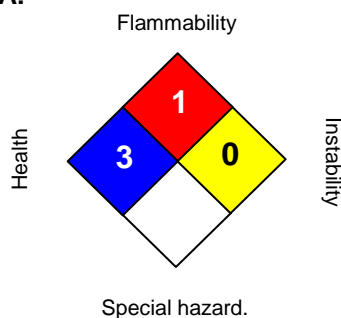
On the inventory, or in compliance with the inventory.

Taiwan Chemical Substance Inventory

not determined

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	3
FLAMMABILITY	1
PHYSICAL HAZARD	0

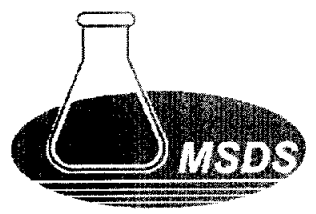
0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 12/09/2020
Version Number : 1.2
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.nalco.com and request access.

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MATERIAL SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name: ChemTreat BL-1240
 Manufacturer's Name: ChemTreat, Inc.
 Emergency Telephone Number: (800) 424-9300
 Address (Corporate Headquarters): 4461 Cox Road, Glen Allen, VA 23060
 Telephone Number for Information: (800) 648-4579
 Date of MSDS: September 19, 2007

Section 2. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt. %
Erythorbic acid	89-65-6	1 - 5
Sodium hydroxide	1310-73-2	1 - 5

Section 3. Hazards Identification

Emergency Overview: Clear straw to amber liquid; odorless. Not flammable.
 Potential Health Effects:
Eyes - May cause irritation
Skin - May cause irritation and drying of skin, and dermatitis
Inhalation - May be irritating to respiratory tract
Ingestion - May cause toxic effects if large amounts are swallowed
Chronic Effects/Carcinogenicity: None known

Section 4. First Aid Measures

Inhalation: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Get immediate medical attention.
Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, holding eyelids apart to ensure flushing of entire eye surface. Get immediate medical attention.
Skin: Wash thoroughly with soap and large amounts of water. Wash clothing before reuse. Get medical attention immediately.
Ingestion: Do not induce vomiting. Give large quantities of water. Never give anything by mouth to an unconscious person. Call a physician immediately.

Section 5. Fire Fighting Measures

Flammable Properties: Not flammable

Suitable Extinguishing Media: Water, CO₂, dry chemical, foam

Fire & Explosion Hazards: Keep containers cool with water spray to minimize the potential of decomposition.

Protective Equipment: If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH-approved, self-contained breathing apparatus.

Section 6. Accidental Release Measures

Small Spill: Construct temporary dikes of dirt, sand, or any readily available inert material to prevent spreading of the material. Wearing appropriate personal protective equipment, move the leaking container to a containment area or plug the leak. Absorb on inert material, then shovel up and dispose of according to local, state, federal regulations.

Large Spill: Construct temporary dikes of dirt, sand, or any readily available inert material to prevent spreading of the product. Wearing appropriate personal protective equipment, close or cap valves and/or block or plug hole in leaking container and transfer to another container for proper disposal.

Section 7. Handling and Storage

Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Avoid breathing mists. Do not ingest. Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For industrial use only.

Section 8. Exposure Controls/Personal Protection

Use protective equipment in accordance with 29 CFR 1910 Subpart I. Good general ventilation should be sufficient to control airborne levels. Wear chemical splash goggles or safety glasses with full-face shield. Wear rubber gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact. Maintain eyewash fountain and quick-drench facilities in work area.

Section 9. Physical and Chemical Properties

Appearance: Clear straw/amber

Boiling Point: ~ 212°F

Evaporation Rate: < 1

Freezing Point: ~ 34°F

Melting Point: N/A

Molecular Weight: N/D

Odor: None

pH: ~9.8

Physical state: Liquid

Solubility in Water: Complete

Specific Gravity: ~1.031

Vapor Density: N/D

Vapor Pressure: N/D

Viscosity: N/D

% VOCs:

Section 10. Stability and Reactivity

Chemical Stability: Stable at normal temperatures and pressures.

Incompatibility: Strong oxidizing agents

Hazardous Decomposition Products: Oxides of carbon

Hazardous Polymerization: Will not occur.

Section 11. Toxicological Information

No information furnished

Section 12. Ecological Information

Fathead minnow: 96h LC50 = >10,000 mg/L

Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.

Section 14. Transport Information (not meant to be all inclusive)

D.O.T. Shipping Name: Not D.O.T. Regulated

Section 15. Regulatory Information (Not meant to be all inclusive – selected regulation represented)

TSCA Status: All ingredients listed

CERCLA Reportable Quantity: None

SARA Title III:

Section 302 Extremely Hazardous Substances: None

Section 313 Toxic Chemicals: None

CALIFORNIA PROPOSITION 65: None

FDA: All ingredients in this product are authorized in 21 CFR 173.310 for use as “Boiler Water Additives” where the steam may contact food.

KOSHER: This product is certified by the Orthodox Union as kosher pareve.

USDA: (Federally inspected meat and poultry plants) – product is approved for Category G6.

Section 16. Other Information

HMIS Hazard Rating:

Health: 1 Flammability: 0 Physical Hazard: 0 PPE: X (see note)

Note: PPE rating depends on circumstances of use. See Section 8 for recommended PPE.

SARA Hazard Categories – Section 311/312

Acute – Yes Chronic – No Fire – No Reactive – No Sudden Release – No

Prepared by Regulatory Affairs

Although the information and recommendations set forth herein (hereinafter “Information”) are presented in good faith and believed to be correct as of the date hereof, ChemTreat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information.

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ChemTreat, Inc.

BL-1240

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MATERIAL SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name: ChemTreat BL1344
Product Use: Boiler Water Treatment
Supplier's Name: ChemTreat, Inc.
Emergency Telephone Number: (800) 424-9300 (Toll Free)
(703) 527-3887
Address (Corporate Headquarters): 5640 COX ROAD
Glen Allen, VA 23060
Telephone Number for Information: (800) 648-4579
Date of MSDS: June 25, 2013

Section 2. Hazard(s) Identification



Signal Word: WARNING!

Hazard Statement(s): May be harmful in contact with skin.
May be harmful if inhaled.
May be harmful if swallowed.

Precautionary Statement(s): No significant health risks are expected from exposures under normal conditions of use.

Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt. %
1-Hydroxyethylidene-1,1-diphosphonic acid, tetrapotassium salt	14860-53-8	3 - 7

Section 4. First Aid Measures

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.

Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Skin: Wash with plenty of soap and water. Call a poison center or doctor/physician if you feel unwell.

Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.
Notes to Physician:	N/A
Additional First Aid Remarks:	N/A

Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	Product may emit toxic gases or fumes under fire conditions.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and recover liquid when possible. Flush spill area with water spray.
Other Statements:	None.

Section 7. Handling and Storage

Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only.

Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits
1-Hydroxyethylidene-1,1-diphosphonic acid, tetrapotassium salt		N/E

Carcinogenicity Category

Component	Source	Code	Brief Description
1-Hydroxyethylidene-1,1-diphosphonic acid, tetrapotassium salt			N/E

Engineering Controls:

Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

Personal Protection

Eyes:

Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.

Skin:

Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.

Respiratory:

If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Section 9. Physical and Chemical Properties

Physical State and Appearance:

Liquid, Light Straw, Clear

Specific Gravity:

1.241 @ 20°C

pH:

9.0 @ 20°C, 100.0%

Freezing Point:

21°F

Flash Point:

N/D

Odor:

Mild

Melting Point:

N/D

Boiling Point:

212°F

Solubility in Water:

Complete

Evaporation Rate:

N/D

Vapor Density:

As Water

Molecular Weight:

N/D

Viscosity:

<100 CPS @ 20°C

Flammable Limits:

N/A

Autoignition Temperature: N/A
Density: 10.35 lb/ga
Vapor Pressure: As Water
% VOC: N/D

Section 10. Stability and Reactivity

Chemical Stability: Stable at normal temperatures and pressures.

Incompatibility with Various Substances: Strong acids, Strong oxidizers

Hazardous Decomposition Products: None known.

Possibility of Hazardous Reactions: None known.

Section 11. Toxicological Information

Chemical Name	Exposure	Type of Effect	Concentration	Species
1-Hydroxyethylidene-1,1-diphosphonic acid, tetrapotassium salt	Oral	LD50	2400 mg/kg	Rat
	Dermal	LD50	>7940 mg/kg	Rabbit

Comments: None.

Section 12. Ecological Information

Species	Duration	Type of Effect	Test Results
N/D			

Comments: Not tested.

Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.
Not a RCRA-regulated hazardous waste when disposed in the original product form.

Section 14. Transport Information

DOT

Proper Shipping Name:	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID
Technical Name:	N/A
Hazard Class:	Not D.O.T. Regulated
UN/NA#:	N/A
Packing Group:	N/A

IMDG

Proper Shipping Name:	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID
Technical Name:	N/A
Hazard Class:	Not D.O.T. Regulated
UN/NA#:	N/A
Packing Group:	N/A

TDG

Proper Shipping Name:	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID
Technical Name:	N/A
Hazard Class:	Not D.O.T. Regulated
UN/NA#:	N/A
Packing Group:	N/A

ICAO

Proper Shipping Name:	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID
Technical Name:	N/A
Hazard Class:	Not D.O.T. Regulated
UN/NA#:	N/A
Packing Group:	N/A

Section 15. Regulatory Information

Inventory Status

United States (TSCA): All ingredients listed.
Canada (DSL/NDSL): All ingredients listed.

Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes

Fire Hazard: No
Reactive Hazard: No
Release of Pressure: No
Acute Health Hazard: Yes
Chronic Health Hazard: No

Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
1-Hydroxyethylidene-1,1-diphosphonic acid, tetrapotassium salt	N/A	N/A	N/A

Comments: None.

State Regulations

California Proposition 65: None known.

Special Regulations

Component	States
1-Hydroxyethylidene-1,1-diphosphonic acid, tetrapotassium salt	None

International Regulations

Canada**WHMIS Classification:** N/A**Controlled Product Regulations (CPR):** N/A**Section 16. Other Information**

HMIS Hazard Rating**Health:** 1
Flammability: 0
Physical Hazard: 0
PPE: X**Notes:** The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.
The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.**NSF:** This product conforms to the requirements of the NSF Nonfood Compounds Registration Program, Registration #144221; Category G6, G7.**FDA/USDA/GRAS:** All ingredients in this product are authorized in 21 CFR 173.310 for use as "Boiler Water Additives" where the steam may contact food.**KOSHER:** This product is certified by the Orthodox Union as Kosher for Passover and year-round use.
Only when prepared by the following ChemTreat facilities: Ashland, VA; Eldridge, IA; Nederland, TX; Vernon, CA.**FIFRA:** N/A**Other:** None

Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Regulatory Affairs Department

Disclaimer

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, ChemTreat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers.

SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	ChemTreat BL153
Product Use:	Steam Line Treatment
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424-9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road Glen Allen, VA 23060
Telephone Number for Information:	(800)648-4579
Date of SDS:	March 7, 2017
Revision Date:	March 7, 2017
Revision Number:	17030701AN

Section 2. Hazard(s) Identification



Signal Word:	DANGER
GHS Classification(s):	Skin corrosion/irritation – Category 1b Eye damage/irritation – Category 1 Acute Toxicity Dermal – Category 4 Acute Toxicity Inhalation – Category 4 Acute Toxicity Oral – Category 4
Hazard Statement(s):	H314 Causes severe skin burns and eye damage. H318 Causes serious eye damage. H312 Harmful in contact with skin. H332 Harmful if inhaled. H302 Harmful if swallowed.
Precautionary Statement(s):	
Prevention:	P260 Do not breathe dust/fume/gas/mist/vapors/spray. P264 Wash thoroughly after handling. P270 Do not eat, drink, or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/protective clothing/eye protection/face protection.



Response: P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P301 + 330 + 331 IF SWALLOWED: Rinse mouth.
Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair):
Remove/take off immediately all contaminated clothing.
Rinse skin with water/shower
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P363 Wash contaminated clothing before reuse.

Storage: P405 Store locked up.

Disposal: P501 Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.

System of Classification Used: Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards Not Otherwise Classified: None.

Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt. %
Ammonium hydroxide	1336-21-6	10 - 30

Comments If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

Section 4. First Aid Measures

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.



Skin: Immediately remove/take off all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before re-use. Immediately call a poison center or doctor/physician.

Ingestion: DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.

Most Important Symptoms: N/D

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary: N/A

Section 5. Fire Fighting Measures

Flammability of the Product: Not flammable.

Suitable Extinguishing Media: Use extinguishing media suitable to surrounding fire.

Specific Hazards Arising from the Chemical: Thermal decomposition releases ammonia and oxides of nitrogen.

Protective Equipment: If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

Section 6. Accidental Release Measures

Personal Precautions: Use appropriate Personal Protective Equipment (PPE).

Environmental Precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.

Methods for Cleaning up: Contain and recover liquid when possible. Flush spill area with water spray.

Other Statements: If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802. Reportable Quantity of the product is 683 Gal.

Section 7. Handling and Storage

- Handling:** Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
- Storage:** Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Do not store or handle in aluminum, zinc, copper, or their alloys. Store above Freeze Point.

Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits
Ammonium hydroxide	N/E	N/E

- Engineering Controls:** Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

Personal Protection

- Eyes:** Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.
- Skin:** Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.
- Respiratory:** If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Colorless, Clear
Specific Gravity:	0.925 @ 20°C
pH:	13.3 @ 20°C, 100.0%
Freezing Point:	<-11°F
Flash Point:	N/D
Odor:	Strong
Melting Point:	N/A
Initial Boiling Point and Boiling Range:	160°F
Solubility in Water:	Soluble
Evaporation Rate:	N/A
Vapor Density:	0.6
Molecular Weight:	N/D
Viscosity:	N/A
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	7.71 LB/GA
Vapor Pressure:	130 mmHg
% VOC:	N/D
Odor Threshold	N/D
n-octanol Partition Coefficient	N/D
Decomposition Temperature	N/D

Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Acids, Zinc, Copper/copper alloys.
Hazardous Decomposition Products:	Ammonia, Oxides of nitrogen.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

Section 11. Toxicological Information

Acute Toxicity

Chemical Name	Exposure	Type of Effect	Concentration	Species
Ammonium hydroxide	Oral	LD50	350 MG/KG	Rat

Carcinogenicity Category

Component	Source	Code	Brief Description
Ammonium hydroxide	N/E	N/E	N/E

Likely Routes of Exposure: N/D

Symptoms

Inhalation: N/D

Eye Contact: N/D

Skin Contact: N/D

Ingestion: N/D

Skin Corrosion/Irritation: N/D

Serious Eye Damage/Eye Irritation: N/D

Sensitization: N/D

Germ Cell Mutagenicity: N/D

Reproductive/Developmental Toxicity: N/D

Specific Target Organ Toxicity

Single Exposure: N/D

Repeated Exposure: N/D

Aspiration Hazard: N/D

Comments: None.

Section 12. Ecological Information

Ecotoxicity

Species	Duration	Type of Effect	Test Results
Ceriodaphnia dubia	48h	LC50	131 mg/l
Fathead Minnow	96h	LC50	8.2 mg/l

Persistence and Biodegradability: N/D

Bioaccumulative Potential: N/D

Mobility In Soil: N/D

Other Adverse Effects: N/D

Comments: As ammonia

Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.
EPA corrosivity characteristic hazardous waste D002 when disposed of in the original product form.

Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	UN2672	AMMONIA SOLUTIONS (19%)	N/A	8	PGIII
Over 683 GA	UN2672	RQ AMMONIA SOLUTIONS (19%)	N/A	8	PGIII
TDG	UN2672	AMMONIA SOLUTIONS (19%)	N/A	8	PGIII
ICAO	UN2672	AMMONIA SOLUTIONS (19%)	N/A	8	PGIII
IMDG	UN2672	AMMONIA SOLUTIONS (19%)	N/A	8	PGIII

Note: N/A



Section 15. Regulatory Information

Inventory Status

United States (TSCA):
Canada (DSL/NDSL):

All ingredients listed.
All ingredients listed.

Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes

Fire Hazard:	No
Reactive Hazard:	No
Release of Pressure:	No
Acute Health Hazard:	Yes
Chronic Health Hazard:	No

Other Sections

Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
Ammonium hydroxide	Yes	N/A	1000

Comments: None.

State Regulations

California Proposition 65: None known.

Special Regulations

Component	States
Ammonium hydroxide	MA, NY, PA



International Regulations

Canada

WHMIS Classification: D1B (Toxic Material)
E (Corrosive Material)

Controlled Product Regulations (CPR): This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Compliance Information

NSF: N/A

Food Regulations: FDA: Generally Recognized as Safe (GRAS) by the FDA at 21 CFR 184.1139.

KOSHER: This product has not been evaluated for Kosher approval.

FIFRA: N/A

Other: None

Comments: None.

Section 16. Other Information

HMIS Hazard Rating

Health:	3
Flammability:	1
Physical Hazard:	0
PPE:	X

Notes: The PPE rating depends on circumstances of use. See Section 8 for recommended PPE.
The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.



Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Revision Date: March 7, 2017

Disclaimer

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905167
00007-00

**MATERIAL
SAFETY DATA**

OCEAN NETWORK EMERGENCY PHONE 1-888-2891-911

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THIS PRODUCT MAY BE CONSIDERED TO BE A HAZARDOUS CHEMICAL UNDER THAT STANDARD. (REFER TO THE OSHA CLASSIFICATION IN SEC. I.) THIS INFORMATION IS REQUIRED TO BE DISCLOSED FOR SAFETY IN THE WORKPLACE. THE EXPOSURE TO THE COMMUNITY, IF ANY, IS QUITE DIFFERENT.

I - PRODUCT IDENTIFICATION

Product Name:	Chlorine
Synonyms:	None
Chemical Family:	Halogen
Formula:	Cl ₂
Use Description:	Chlorinating and oxidizing agent, disinfectant, organic synthesis, water and wastewater treatment, plastics, pharmaceuticals
Hazard Classification:	Irritant or corrosive; skin, eye and lung hazard; toxic by inhalation; compressed gas; oxidizer
Revision No.:	3
Revision Date:	1/10/99
Product Codes:	105015, 105189
File No.:	MSDS0100

II - COMPONENT DATA

Product Composition

CAS or Chemical Name:	Chlorine				
CAS Number:	7782-50-5				
Percentage Range:	98-100 Volume percent				
Hazardous Per 29 CFR 1910.1200:	Yes				
Exposure Standards:	OSHA (PEL)		ACGIH (TLV)		
		ppm	mg/m ³	ppm	mg/m ³
	TWA:	None	None	0.5	1.5
	CEILING:	1	3	None	None
STEL:	None	None	1	2.9	

- P c

DO NOT TAKE INTERNALLY. AVOID CONTACT WITH SKIN, EYES AND CLOTHING. UPON CONTACT WITH SKIN OR EYES, WASH OFF WITH WATER. DO NOT BREATHE GAS OR VAPOR.

STORAGE CONDITIONS:

Store in a cool, dry, well-ventilated place.
DO NOT STORE AT TEMPERATURES ABOVE: 59 Deg.C (140 Deg.F)

PRODUCT STABILITY AND COMPATIBILITY:

SHELF LIFE LIMITATIONS:	Indefinite
INCOMPATIBLE MATERIALS FOR PACKAGING:	NOTICE - Should not be repackaged except by qualified and trained personnel.
INCOMPATIBLE MATERIALS FOR STORAGE OR TRANSPORT:	Alkalis, reducing agents, organic materials

IV - PHYSICAL DATA

Appearance:	Greenish liquid or gas
Melting Point:	-101 Deg.C (-149 Deg.F)
Freezing Point:	
Boiling Point:	-34 Deg.C (-29 Deg.F)
Decomposition Temperature:	None
Specific Gravity:	Not applicable
Bulk Density:	88.4 lb. per cubic feet at 63 Deg.F
pH @ 25° C:	Not applicable
Vapor Pressure @ 25° C:	114 psi
Solubility in Water:	Miscible
Volatiles, Percent by Volume:	100
Evaporation Rate:	Heat of Vaporization: 123.67 BTU per pound
Vapor Density:	Approximately 2.5 (0.7537 lb. per cubic feet at 32 Deg.F)
Molecular Weight:	71
Product is:	A compressed gas
Odor:	Acrid
Coefficient of Oil/Water Distribution:	No Data

V - PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

Personal Protection for Routine Use of Product:

Respiratory Protection:	If air concentrations above the TLV are possible, wear a NIOSH approved respirator
Ventilation:	Use local exhaust ventilation to maintain levels to below the TLV.
Skin and Eye Protection:	Wear gloves, boots, apron and a face shield with safety glasses. A full impermeable suit is recommended if exposure is possible to large portion of body.
Other:	Emergency eye wash and safety showers must be provided in the immediate work area.

Equipment Specifications (When Applicable):

Respirator Type:	Wear NIOSH approved full-face respirator equipped with chemical cartridges for chlorine gas.		
Protective Clothing Type: (This includes: gloves, boots, apron, protective suit.)	GLOVE TYPE:	Neoprene, or butyl rubber	
	BOOT TYPE:	Neoprene, or butyl rubber	
	APRON TYPE:	Neoprene, or butyl rubber	
	PROTECTIVE SUIT:	see section	XI. for additional information

VI - FIRE AND EXPLOSION HAZARD INFORMATION

Flammability Data:

Explosive:	N/A
Flammable:	No
Combustible:	No
Pyrophoric:	No
Flash Point:	Not Applicable
Autoignition Temperature:	Not Applicable
Flammable Limits at Normal Atmospheric Temperature and Pressure (Percent Volume in Air):	LEL - Not Applicable UEL - Not Applicable

NFPA Ratings:

Health:	4
Flammability:	0
Reactivity:	0
Special Hazard Warning	OXIDIZER

HMIS Ratings:

Health:	3
Flammability:	0
Reactivity:	0

Extinguishing Media:

Use extinguishing media compatible to surrounding materials.

Fire Fighting Techniques and Comments:

Use water to cool containers exposed to fire, however, direct spray between fire and containers. DO NOT spray directly on container unless absolutely necessary. Water reactive material; DO NOT spray with water. Contact with reactive metals e.g., aluminum may result in the generation of flammable hydrogen gas. See Section 11 for protective equipment for fire fighting.

VII - REACTIVITY INFORMATION

Conditions Under Which This Product May Be Unstable:

Temperatures Above:	None
Mechanical Shock or Impact:	No
Electrical (Static) Discharge:	No
Other:	Reacts vigorously with titanium, zinc, tin
Hazardous Polymerization:	Will not occur
Incompatible Materials:	Alkalies, reducing agents, organic materials
Hazardous Decomposition:	Hydrochloric acid, hypochlorous acid
Other:	Titanium will react vigorously, resulting in spontaneous ignition, when contacted by DRY Chlorine. Combustion will be supported in carbon steel systems and equipment containing a Chlorine environment at temperatures greater than 480 Deg. F. Properly purge systems and equipment PRIOR to conducting Hot Work.

Summary of Reactivity:

Explosive:	N/A
Oxidizer:	Yes
Pyrophoric:	No
Organic Peroxide:	No
Water Reactive:	Yes
Corrosive:	Yes

VIII - FIRST AID

Eyes

Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention at once.

Skin

Immediately flush with water for at least 15 minutes. Seek medical attention. If clothing, shoes and/or jewelry come in contact with the product, they should be removed immediately and laundered before re-use.

Ingestion

Immediately drink large quantities of water. DO NOT induce vomiting. Seek medical attention at once. DO NOT give anything by mouth if the person is unconscious or if having convulsions.

Inhalation

If person experiences nausea, headache or dizziness, person should stop work immediately and move to fresh air until these symptoms disappear. If breathing is difficult, administer oxygen, keep the person warm and at rest. Seek medical attention.

In the event that an individual inhales enough vapor to lose consciousness, person should be moved to fresh air at once and seek medical attention immediately. If breathing has stopped, artificial respiration should be given immediately. In all cases, ensure adequate ventilation and provide respiratory protection before the person returns to work.

IX - TOXICOLOGY AND HEALTH INFORMATION

Routes of Absorption

Inhalation, skin, eye, ingestion

Warning Statements and Warning Properties

HARMFUL IF INHALED. CAUSES EYE, SKIN AND RESPIRATORY TRACT BURNS. CAN CAUSE LUNG DAMAGE.

Human Threshold Response Data

Odor Threshold:	Approximately 1.7 mg/m ³ (0.3 ppm).
Irritation Threshold:	The irritation threshold is approximately 0.5 ppm.
Immediately Dangerous to Life or Health:	10.0 ppm

Signs, Symptoms and Effects of Exposure

Inhalation

Acute:	Toxic if inhaled. Inhalation of this material is irritating to the nose, mouth, throat and lungs. It may cause inflammation to the respiratory tract with the production of lung edema, which can result in shortness of breath, wheezing, choking, chest pain, and impairment of lung function. The inflammation of the respiratory tract is most evident in the upper portions, but bronchioles, alveolar ducts, and alveoli may also be affected. There is no evidence that acute inhalation of chlorine at low to moderate levels will cause permanent lung damage. At high levels, chlorine is corrosive to the respiratory tract and may cause lung damage.
Chronic:	Repeated inhalation exposure may cause impairment of lung function and permanent lung damage. It may contribute to the development of bronchitis.

Skin

Acute:	Dermal exposure can cause irritation characterized by redness, swelling and scab formation. Contact with liquid chlorine may cause burns with prolonged contact causing destruction of the dermis with impairment of the skin at site of contact to regenerate.
Chronic:	Effects from chronic skin exposure would be similar to those from single exposure except for effects secondary to tissue destruction

Eye

Irritation can occur following eye exposure to the gas with redness, pain, blurred vision, and tearing. Contact with liquid chlorine may cause burns with impairment of vision and corneal damage.

Ingestion

Acute: If liquid is swallowed, irritation and/or burns can occur to the entire gastrointestinal tract, including the stomach and intestines, characterized by nausea, vomiting, diarrhea, abdominal pain, bleeding, and/or tissue ulceration. Ingestion is not a major route of exposure because chlorine is a gas at room temperature.

Chronic: There are no known or reported effects from chronic exposure.

Medical Conditions Aggravated by Exposure

Asthma, respiratory and cardiovascular disease.

Interactions With Other Chemicals Which Enhance Toxicity

None known or reported.

Animal Toxicology

Acute Target Organ Toxicity

Inhalation LC 50: 293 ppm (1 hour, rat)

Oral LD 50: Not applicable. Product is a gas at room temperature.

Dermal LD 50: Not applicable. Product is a gas at room temperature.

Severe irritant to eyes and skin. Contact with the liquid chlorine may cause burns to eyes and skin. Contact with chlorine vapor may cause severe eye irritation.

Reproductive and Developmental Toxicity

There are no known or reported effects on reproductive function or fetal development.

Carcinogenicity

This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA.

Mutagenicity

This product is not known or reported to be mutagenic.

Aquatic Toxicity

LC 50 Bluegill: 0.44 mg/l/96 hours

LC 50 Yellow perch: 0.88 mg/l/1 hr.

LC 50 Channel catfish (fingerling): 0.07 mg/l/96 hrs

LC 50 Daphnia magna: 0.017 mg/l/48 hrs

CHRONIC TARGET ORGAN EFFECTS IN LABORATORY ANIMALS

Inhalation exposure has produced pathological change in the lungs and nasal passages of monkeys and rats characterized by inflammation, epithelial hyperplasia of loss of cilia. In addition, damage was observed in liver and kidneys from treated rats. These effects were seen at concentrations much higher than those expected from occupational exposure.

X - TRANSPORTATION INFORMATION

THIS MATERIAL IS REGULATED AS A DOT HAZARDOUS MATERIAL.

DOT Description from the Hazardous Materials Table 49 CFR 172.101:

Land (U.S. DOT):	Chlorine, 2.3, UN1017, Poison Inhalation Hazard - Hazard Zone B - Marine Pollutant
Water (IMO):	Same as LAND above
Air (IATA/ICAO):	FORBIDDEN
Hazard Label/Placard:	Poison Gas, Corrosive
Reportable Quantity:	10 lbs. (Per 49 CFR 172.101, Appendix)
Emergency Guide:	124

XI - SPILL AND LEAKAGE PROCEDURES

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC AT 800-424-9300.

Reportable Quantity:	This product is subject to a Reportable Quantity with respect to chlorine. RQs are subject to change and reference should be made to 40 CFR 302.4 for the current requirements.
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Spill Mitigation Procedures:

Hazardous concentrations in air may be found in local spill area and immediately downwind. Do not put water directly on this product as gas evolution may increase. This product may represent an explosion hazard, if in contact with incompatible materials. Remove all sources of ignition.

Air Release:	This material is heavier than air and may concentrate in low areas. Ambient air and water temperature must be considered if a water fog is used to attempt absorption or dispersion. It must be understood that very little vapor may actually be absorbed and the gas may be dispersed to other areas. Contain all fog water for neutralization and treatment.
Water Release:	This material is heavier than water. Chlorine will sink and bubble into water to form a hypochlorous acid, which will later self decompose to various materials. Stop flow of material and divert water to a holding area for treatment and neutralization.
Land Spill:	Dike area of spill and stop flow if safe to do so. Cover area of spill with foam to reduce air contamination. Begin treatment to neutralize material as soon as possible.

Spill Residues:

Dispose of per guidelines under Section 12, WASTE DISPOSAL.

This material may be neutralized for disposal; you are requested to contact OCEAN at 888-2891-911 before beginning any such operation.

Personal Protection for Emergency Spill and Firefighting Situations:

In case of fire, use normal fire fighting equipment.

For response to Chlorine gas it is recommended to use as a minimum level "B" protection that is compatible to Chlorine and for Liquid spills it is recommended to utilize as a minimum enhanced level "B" (Enhanced level "B" is the addition of a splash hood). Responders can reference Chlorine Institute pamphlet #65 on PPE.

Additional protective clothing must be worn to prevent personal contact with this material. Those items include but are not limited to: boots, gloves, hard hat, splash-proof goggles, full face shield and impervious clothing, i.e., chemically impermeable suit.

Compatible materials for response to this material are neoprene and butyl rubber.

Protection concerns must also address the potential of the physical characteristics of this product as a compressed gas, corrosive and a poison.

XII - WASTE DISPOSAL

If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D003, D001.

If this product becomes a hazardous waste, it will be a hazardous waste which is subject to the Land Disposal Restrictions under 40 CFR 268 and must be managed accordingly.

As a hazardous liquid waste, it must be disposed of in accordance with local, state and federal regulations in a permitted hazardous waste treatment, storage and disposal facility by treatment.

Chlorine can exist in a gaseous state, and controlled evaporation may be warranted.

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THIS MATERIAL. THE USER OF THIS MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.

XIII - ADDITIONAL REGULATORY STATUS INFORMATION

TOXIC SUBSTANCES CONTROL ACT:

This product is listed on the Toxic Substances Control Act inventory.

NSF LIMITS: NSF Maximum Drinking Water Use Concentration - 30 mg/l as chlorine

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT TITLE III:

HAZARD CATEGORIES, PER 40 CFR 370.2:

HEALTH:

Immediate (Acute)

Delayed (Chronic)

PHYSICAL:

Sudden release of pressure

Reactivity

EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW, PER 40 CFR 355, APP.A:

EXTREMELY HAZARDOUS SUBSTANCE - THRESHOLD PLANNING QUANTITY:

100 lbs.

SUPPLIER NOTIFICATION REQUIREMENTS, PER 40 CFR 372.45:

This mixture or tradename product contains a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372.

CHEMICALS LISTED ARE: Chlorine

XIV - ADDITIONAL INFORMATION

MSDS REVISION STATUS: The Chlor/Alkali MSDS Control Group update this MSDS May, 1999.

XV - MAJOR REFERENCES

1. Teratogenic Study with Monosodium Cyanurate Plus Chlorine in Albino Rats. Industrial Bio-Test Laboratories, Inc., 1810 Frontage Road, Northbrook, Illinois 60062, IBT No. B758c. April 18, 1972.
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4. Weill, H. et al. Late Evaluation of Pulmonary Function After Acute Exposure to Chlorine Gas. American Review of Respiratory Disease, Volume 99, (1969).
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11. Jones, R. N. et al. Lung Function after Acute Chlorine Exposure. Am. Rev. Respir. Dis., 134(b), p 1190-1195. (1986).
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13. Ellenhorn, M. J. and D. G. Barceloux. Medical Toxicology, Diagnosis and Treatment of Human Poisoning. New York: Elsevier, 1988.
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16. Occupational Health Guideline for Chlorine. U.S. Department of Health and Human Services, September 1978.
17. Material Safety Data Sheet, OHS04600. Occupational Health Services, Inc., p. 1-11.

THE INFORMATION IN THIS MATERIAL SAFETY DATA SHEET SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. OLIN BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION, BUT MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MATERIAL SAFETY DATA SHEET IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT OLIN AT THE PHONE NUMBER LISTED BELOW TO MAKE CERTAIN THAT THIS SHEET IS CURRENT.

ORC MSDS CONTROL GROUP
Olin Chlor Alkali
1186 Lower River Road
P.O. Box 248
Charleston, TN 37310
Phone Number: (888)-658-MSDS (6737)

1. Identification

Product identifier	Sodium Hypochlorite, 5 - 17%	
Other means of identification		
SDS number	10000022	
Synonyms	L.T. Sanitizer 5.25%, Hypo, Liquid Bleach, Bleach, Hypochlorite, Javel Water.	
Recommended use	Swimming pool chlorinator, hard surface cleaner, mildecide, Water treatment chemical, Biocides, bleach solutions and bleach fixer solutions	
Recommended restrictions	None known.	
Manufacturer/Importer/Supplier/Distributor information		
Company name	Olin Chlor Alkali Products	
Address	490 Stuart Road, NE Cleveland, TN 37312	
Company name	Pioneer Americas, LLC (d/b/a Olin Chlor Alkali Products)	
Address	490 Stuart Road, NE Cleveland, TN 37312	
Company name	Olin Canada ULC (d/b/a Olin Chlor Alkali Products)	
Address	2020 University, Suite 2190 Montreal, Quebec H3A 2A5	
General Information		
Telephone	(888) 658-6SDS (737)	
Website	olinchloralkali.com	
Contact person	ORC SDS Control Group	
Emergency phone number	CHEMTREC US: 1-800-424-9300 Canada: 1-800-567-7455	

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 2
OSHA defined hazards	Not classified.	
Label elements		



Signal word	Danger
Hazard statement	May be corrosive to metals. Causes severe skin burns and eye damage. May cause respiratory irritation. Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.
Precautionary statement	
Prevention	Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe mist or vapor. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Keep only in original container. Avoid release to the environment.
Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse. Absorb spillage to prevent material damage. Collect spillage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store in corrosive resistant container with a resistant inner liner.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information
Contact with acids liberates toxic gas.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Sodium hypochlorite	7681-52-9	5-17
Sodium hydroxide	1310-73-2	0.10-4.25

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Take off immediately all contaminated clothing. Wash off IMMEDIATELY with plenty of water for at least 15-20 minutes. Get medical attention immediately. Wash contaminated clothing before reuse. Call a physician or poison control center immediately.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed Corrosive effects. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Indication of immediate medical attention and special treatment needed Treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. With eye exposure, continue flushing during transport to hospital.

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire. Do not use dry extinguishing media that contains ammonium compounds.

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire-fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Absorb spillage to prevent material damage. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see Section 8 of the SDS.

Methods and materials for containment and cleaning up Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Environmental precautions Never return spills in original containers for re-use. For waste disposal, see Section 13 of the SDS. Do not discharge into drains, water courses or onto the ground. Environmental manager must be informed of all major releases.

7. Handling and storage

Precautions for safe handling Wear appropriate personal protective equipment. Do not get in eyes, on skin, on clothing. Use with adequate ventilation. Observe good industrial hygiene practices. Do not apply heat or direct sunlight. Temperature and product concentration affect product quality and decomposition rates.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store in a cool and well-ventilated place. Store in a corrosive resistant container. Consult container manufacturer for additional guidance. Store away from and do not mix with incompatible materials such as acids, oxidizers, organics, reducing agents, and all metals except titanium.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	PEL	2 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
Sodium hypochlorite (CAS 7681-52-9)	STEL	2 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles) and a face shield. Wear a full-face respirator, if needed.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing. Reports indicate that sodium hypochlorite can react with various fabrics usually increasing with concentration. Reactions vary significantly depending on strength of chemical, material, fabric treatment and color of dyes. FRC treated cotton has a stronger response than plain cotton. Poly blend fabrics and meta aramid fabric have a weaker response than natural fibers. Contact the Personal Protective Equipment manufacturer for specific information about their products.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state

Liquid.

Form

Liquid.

Color

Not available.

Odor

Pungent.

Odor threshold

0.9 mg/m³

pH

12 - 14 (25 °C/77 °F)

Melting point/freezing point

-4 °F (-20 °C) (7% solution)

Initial boiling point and boiling range

Not available.

Flash point

Not applicable

Evaporation rate	No data available
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not applicable
Flammability limit - upper (%)	Not applicable
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	12 mm Hg (20°C/68°F)
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Completely miscible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not applicable
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Bulk density	Not applicable
Molecular formula	NaOCl
Molecular weight	74.5 g/mol

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials. Avoid ultraviolet (UV) light sources. Excessive heat. Reacts violently with strong acids. Acid contact will produce chlorine gas. Amine contact will produce chloramines.
Incompatible materials	Strong oxidizing agents. Acids. Metals. Organic compounds. Ammonia.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion may produce burns to the lips, oral cavity, upper airway, esophagus and possibly the digestive tract.
Inhalation	Vapors and spray mist may irritate throat and respiratory system and cause coughing.
Skin contact	Causes skin burns.
Eye contact	Causes eye burns.

Symptoms related to the physical, chemical and toxicological characteristics Corrosive effects. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity Occupational exposure to the substance or mixture may cause adverse effects.

Product	Species	Test Results
Sodium Hypochlorite, 5 - 17% (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2 g/kg
<i>Oral</i>		
LD50	Rat	3 - 5 g/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	No data available.
Skin sensitization	No data available.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Sodium hypochlorite (CAS 7681-52-9)	3 Not classifiable as to carcinogenicity to humans.
Reproductive toxicity	No data available.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	No data available.
Aspiration hazard	Not classified, however droplets of the product may be aspirated into the lungs through ingestion or vomiting and may cause a serious chemical pneumonia.
Chronic effects	Prolonged or repeated overexposure causes lung damage.
Further information	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Product	Species		Test Results
Sodium Hypochlorite, 5 - 17% (CAS Mixture)			
Aquatic			
Crustacea	LC50	Daphnia	1 mg/l
Fish	LC50	Bluegill (<i>Lepomis macrochirus</i>)	0.6 mg/l, 48 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available for this product.
Mobility in soil	Not available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN1791
UN proper shipping name	Hypochlorite solutions
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB3, N34, T4, TP2, TP24

Packaging exceptions 154
Packaging non bulk 203
Packaging bulk 241

IATA

UN number UN1791
UN proper shipping name Hypochlorite solution
Transport hazard class(es)
Class 8
Subsidiary risk -
Label(s) 8
Packing group III
Environmental hazards Yes
ERG Code 8L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN1791
UN proper shipping name HYPOCHLORITE SOLUTION
Transport hazard class(es)
Class 8
Subsidiary risk -
Label(s) 8
Packing group III
Environmental hazards
Marine pollutant Yes
EmS F-A, S-B
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to
Annex II of MARPOL 73/78 and
the IBC Code

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Sodium hydroxide (CAS 1310-73-2) LISTED
Sodium hypochlorite (CAS 7681-52-9) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Sodium hydroxide (CAS 1310-73-2)
Sodium hypochlorite (CAS 7681-52-9)

US. New Jersey Worker and Community Right-to-Know Act

Sodium hydroxide (CAS 1310-73-2)
Sodium hypochlorite (CAS 7681-52-9)

US. Pennsylvania Worker and Community Right-to-Know Law

Sodium hydroxide (CAS 1310-73-2)
Sodium hypochlorite (CAS 7681-52-9)

US. Rhode Island RTK

Sodium hydroxide (CAS 1310-73-2)
Sodium hypochlorite (CAS 7681-52-9)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

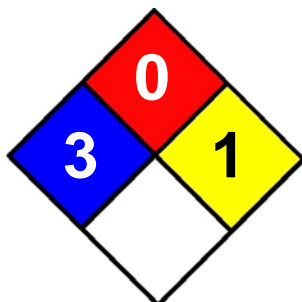
16. Other information, including date of preparation or last revision

Issue date 27-February-2014

Revision date 15-April-2014

Version # 04


NFPA Ratings



List of abbreviations
LD50: Lethal Dose, 50%.
LC50: Lethal Concentration, 50%.
EC50: Effective concentration, 50%.
TWA: Time weighted average.

References
EPA: AQUIRE database
HSDB® - Hazardous Substances Data Bank
US. IARC Monographs on Occupational Exposures to Chemical Agents
IARC Monographs. Overall Evaluation of Carcinogenicity
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

Disclaimer
This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Zalta™ MF5264
FLOCCULANT
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Flocculating agent

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin irritation : Category 2

Eye irritation : Category 2B

GHS label elements

Hazard pictograms :




Signal word : Warning

Hazard statements : H315 + H320 Causes skin and eye irritation.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves.

Response:

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P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313 If skin irritation occurs: Get medical advice/attention.
P337 + P313 If eye irritation persists: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.

Other hazards

Material can create slippery conditions.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture


Components

Chemical name	CAS-No.	Classification	Concentration (%)
ALIPHATIC HYDROCARBON	Trade Secret	Flam. Liq. 4; H227 Asp. Tox. 1; H304	>= 20 - < 30
ALCOHOL ETHOXYLATE	Trade Secret	Acute Tox. 4; H302 Eye Dam. 1; H318	>= 1 - < 1.5

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : Remove contaminated clothing. If irritation develops, get medical attention.
If on skin, rinse well with water.
First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
Wash contaminated clothing before re-use.
- In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.


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If eye irritation persists, consult a specialist.

- If swallowed : Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
Lung irritation
confusion
irregular heartbeat
Convulsions
Inhalation of high concentrations of this material, as could occur in enclosed spaces or during deliberate abuse, may be associated with cardiac arrhythmias. Sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to this material.
This material is an aspiration hazard. Potential danger from aspiration must be weighed against possible oral toxicity when deciding whether to induce vomiting.
Causes skin and eye irritation.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : If product is heated above its flash point it will produce vapors sufficient to support combustion. Vapors are heavier than air and may travel along the ground and be ignited by heat, pilot lights, other flames and ignition sources at locations near the point of release.
Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
Nitrogen oxides (NOx)
Hydrocarbons

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- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Material can create slippery conditions.
Water may cause extremely slippery conditions.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Material can create slippery conditions.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Avoid spillage on floor as the product can become very slippery.
Do not breathe vapours/dust.
Do not smoke.
Container hazardous when empty.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Electrical installations / working materials must comply with the technological safety standards.

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Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
ALIPHATIC HYDROCARBON	Trade Secret	TWA	200 mg/m ³ (total hydrocarbon vapor)	ACGIH

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.

Filter type : Type A

Hand protection
Material : nitrile rubber


Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.

Skin and body protection : Wear as appropriate:
Impervious clothing
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).
Discard gloves that show tears, pinholes, or signs of wear.

Hygiene measures : Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance : emulsion

Colour : white

Odour : hydrocarbon-like

Odour Threshold : No data available

pH : ca. 4

Melting point/freezing point : No data available

Boiling point/boiling range : > 212 °F / > 100 °C

Flash point : > 212 °F / > 100 °C
Method: ASTM D 92

Evaporation rate : No data available

Flammability (solid, gas) : Not classified as a flammability hazard

Self-ignition : does not ignite

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : No data available


Density : ca. 1.0 g/cm³ (68 °F / 20 °C)

Solubility(ies)
Water solubility : dispersible
Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Decomposition temperature : No data available

Viscosity

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- Viscosity, dynamic : 300 - 1,400 cps (68 °F / 20 °C)
- Viscosity, kinematic : > 20.5 mm²/s (104 °F / 40 °C)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.
- Explosive properties : Not explosive
- Oxidizing properties : The substance or mixture is not classified as oxidizing.

SECTION 10. STABILITY AND REACTIVITY

- Reactivity : No decomposition if stored and applied as directed.
- Chemical stability : Stable under recommended storage conditions.
- Possibility of hazardous reactions : Product will not undergo hazardous polymerization.
- Conditions to avoid : Heat, flames and sparks.
- Incompatible materials : Strong oxidizing agents
strong reducing agents
- Hazardous decomposition products : Carbon monoxide
Carbon dioxide (CO₂)
Nitrogen oxides (NO_x)
Hydrocarbons

SECTION 11. TOXICOLOGICAL INFORMATION


Acute toxicity

Not classified based on available information.

Components:

ALIPHATIC HYDROCARBON:

- Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
- Acute inhalation toxicity : LC 50 (Rat, male and female): > 5.28 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403
Assessment: No adverse effect has been observed in acute inhalation toxicity tests.
- Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Assessment: No adverse effect has been observed in acute dermal toxicity tests.

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ALCOHOL ETHOXYLATE:

Acute oral toxicity : LD50 (Rat): Expected > 300 - 2,000 mg/kg

Skin corrosion/irritation

Causes skin irritation.

Product:

Species : Rabbit
Method : OECD Test Guideline 404
Result : irritating

Components:

ALIPHATIC HYDROCARBON:

Result : Mildly irritating to skin

Serious eye damage/eye irritation

Causes eye irritation.

Product:

Species : Rabbit
Result : Slightly to moderately irritating to eyes
Method : OECD Test Guideline 405

Remarks : Unlikely to cause eye irritation or injury.

Components:

ALIPHATIC HYDROCARBON:

Result : Mildly irritating to eyes

ALCOHOL ETHOXYLATE:

Result : Corrosive to eyes

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.


Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is

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identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Components:

ALIPHATIC HYDROCARBON:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION


Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss): > 10 - 100 mg/l
Exposure time: 96 h
Test Type: static test
Remarks: Information given is based on data on the components and the ecotoxicology of similar products.

LC50 (Menidia beryllina (Silverside)): 222 mg/l
Exposure time: 96 h
Test Type: static test
Method: EPA-821-R-02-012

NOEC (Menidia beryllina (Silverside)): 109 mg/l
Exposure time: 96 h
Test Type: static test
Method: EPA-821-R-02-012

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Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): > 10 - 100 mg/l
Exposure time: 48 h

EC50 (Mysidopsis bahia (opossum shrimp)): 3.06 mg/l
Exposure time: 96 h
Test Type: static test
Method: EPA-821-R-02-012

NOEC (Mysidopsis bahia (opossum shrimp)): 1.29 mg/l
Exposure time: 96 h
Test Type: static test
Method: EPA-821-R-02-012

Ecotoxicology Assessment

Acute aquatic toxicity : Acute aquatic toxicity Category 3; Harmful to aquatic life.

Chronic aquatic toxicity : Not classified based on available information.

Components:

ALIPHATIC HYDROCARBON:

Ecotoxicology Assessment

Acute aquatic toxicity : No toxicity at the limit of solubility

Chronic aquatic toxicity : No toxicity at the limit of solubility

ALCOHOL ETHOXYLATE:

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

Chronic aquatic toxicity : Not classified based on available information.

Persistence and degradability

Product:

Biodegradability : Remarks: At natural pHs (>6), the polymer degrades due to the hydrolysis to more than 70% in 28 days.


Physico-chemical removability : Remarks: The product can be eliminated from water by abiotic processes, e.g. adsorption on activated sludge.

Bioaccumulative potential

No data available

Mobility in soil

No data available

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Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.

The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.


National Regulations

49 CFR

Not regulated as a dangerous good

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

NZIoC : On the inventory, or in compliance with the inventory

TSCA : All substances listed as active on the TSCA inventory

AIIC : On the inventory, or in compliance with the inventory

DSL : All components of this product are on the Canadian DSL

KECI : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

TCSI : Not in compliance with the inventory

TSCA list


No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

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Full text of H-Statements


H227 : Combustible liquid.
H302 : Harmful if swallowed.
H304 : May be fatal if swallowed and enters airways.
H318 : Causes serious eye damage.

Full text of other abbreviations

Acute Tox. : Acute toxicity
Asp. Tox. : Aspiration hazard
Eye Dam. : Serious eye damage
Flam. Liq. : Flammable liquids
ACGIH : USA. ACGIH Threshold Limit Values (TLV)
ACGIH / TWA : 8-hour, time-weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative


Sources of key data used to compile the Safety Data Sheet
Key literature references and sources of data
SOLENIS Internal data
SOLENIS internal data including own and sponsored test reports

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The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Amerfloc™ 490 COAGULANT
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Industrial chemical

Details of the supplier of the safety data sheet Solenis LLC 500 Hercules Road Wilmington, Delaware 19808 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

GHS label elements

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

Other hazards

Material can create slippery conditions.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS


Substance / Mixture : Mixture

Components

No hazardous ingredients

SECTION 4. FIRST AID MEASURES


General advice : No hazards which require special first aid measures.

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- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
- In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
If eye irritation persists, consult a specialist.
- If swallowed : IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
stomach or intestinal upset (nausea, vomiting, diarrhea)
irritation (nose, throat, airways)
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
nitrogen oxides (NOx)
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.

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Further information : Material can create slippery conditions.
Water may cause extremely slippery conditions.
Fire residues and contaminated fire extinguishing water must
be disposed of in accordance with local regulations.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Material can create slippery conditions.
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.


SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Advice on safe handling : Avoid spillage on floor as the product can become very slippery.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Electrical installations / working materials must comply with the technological safety standards.

Further information on storage stability : No decomposition if stored and applied as directed.

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Hand protection

Material : Nitrile rubber

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.

Skin and body protection : Wear as appropriate:
 Impervious clothing
 Safety shoes
 Choose body protection according to the amount and concentration of the dangerous substance at the work place.
 Wear resistant gloves (consult your safety equipment supplier).
 Discard gloves that show tears, pinholes, or signs of wear.

Hygiene measures : Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES


Appearance : liquid

Colour : clear, light yellow

Odour : none

Odour Threshold : No data available

pH : 4 - 7

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Melting point/freezing point : < 32 °F / 0 °C

Initial boiling point and boiling range : > 212 °F / 100 °C

Flash point : does not flash

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Self-ignition : does not ignite

Upper explosion limit / Upper flammability limit : Not applicable

Lower explosion limit / Lower flammability limit : Not applicable

Vapour pressure : 2.3 kPa (68 °F / 20 °C)

Relative vapour density : 0.804 (68 °F / 20 °C)

Relative density : 1.1 - 1.2

Density : No data available

Solubility(ies)
Water solubility : completely miscible

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : log Pow: < 0

Decomposition temperature : > 302 °F / 150 °C

Viscosity
Viscosity, dynamic : 4,000 - 9,000 cps (77 °F / 25 °C)

Viscosity, kinematic : No data available


Oxidizing properties : The substance or mixture is not classified as oxidizing.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous : Product will not undergo hazardous polymerization.

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reactions

Conditions to avoid : Keep away from heat, flame, sparks and other ignition sources.
Freezing temperatures.

Incompatible materials : aluminum
Copper
Iron
strong mineral acids
Strong oxidizing agents

Hazardous decomposition products : Carbon monoxide
Carbon dioxide (CO2)
Nitrogen oxides (NOx)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Skin corrosion/irritation

Not classified based on available information.

Product:

Result : Mildly irritating to skin

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Result : Mildly irritating to eyes

Remarks : Unlikely to cause eye irritation or injury.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.


Respiratory sensitisation

Not classified based on available information.

Product:

Germ cell mutagenicity

Not classified based on available information.

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Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 10 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 10 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202


Ecotoxicology Assessment

Acute aquatic toxicity : Acute aquatic toxicity Category 3; Harmful to aquatic life.

Chronic aquatic toxicity : Chronic aquatic toxicity Category 3; Harmful to aquatic life with long lasting effects.

Persistence and degradability

Product:

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Biodegradability : Result: Not readily biodegradable.

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life with long lasting effects.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
 Do not contaminate ponds, waterways or ditches with chemical or used container.
 Send to a licensed waste management company.

 Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.
 Dispose of as unused product.
 Empty containers should be taken to an approved waste handling site for recycling or disposal.
 Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good


Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

Not regulated as a dangerous good

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Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

- TCSI : On the inventory, or in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : On the inventory, or in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : On the inventory, or in compliance with the inventory
- KECI : On the inventory, or in compliance with the inventory
- PICCS : On the inventory, or in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory


TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information

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Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet


Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports


The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the

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specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS has been prepared by the Solenis Environmental Health and Safety Department.

US / EN

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SECTION 1. IDENTIFICATION

Product identifier

Trade name : Burst™ WF7300 DEFOAMER
™ Trademark, Solenis or its subsidiaries or affiliates,
registered in various countries

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Industrial chemical

Details of the supplier of the safety data sheet Solenis LLC 2475 Pinnacle Drive Wilmington, DE 19803 United States of America (USA) EHSProductSafetyTeam@solenis.com	Emergency telephone number 1-844-SOLENIS (844-765-3647) Product Information Contact your local Solenis representative
---	--

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

GHS label elements

This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS


Substance / Mixture : Mixture

Components

No hazardous ingredients

SECTION 4. FIRST AID MEASURES


General advice : No hazards which require special first aid measures.

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- If inhaled : If breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.
- In case of eye contact : Remove contact lenses.
Protect unharmed eye.
- If swallowed : Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : No symptoms known or expected.
- Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO2)
Dry chemical
- Specific hazards during firefighting : If product is heated above its flash point it will produce vapors sufficient to support combustion. Vapors are heavier than air and may travel along the ground and be ignited by heat, pilot lights, other flames and ignition sources at locations near the point of release.
Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
undefined organics
formaldehyde
Hydrocarbons
Silicon oxides
- Specific extinguishing methods : Product is compatible with standard fire-fighting agents.
- Further information : Standard procedure for chemical fires.

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Special protective equipment : In the event of fire, wear self-contained breathing apparatus.
for firefighters

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
Comply with all applicable federal, state, and local regulations.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
- Conditions for safe storage : Electrical installations / working materials must comply with the technological safety standards.
- Materials to avoid : No materials to be especially mentioned.
- Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION


Components with workplace control parameters

Contains no substances with occupational exposure limit values.

- Engineering measures** : General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment


- Respiratory protection : No personal respiratory protective equipment normally required.

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- Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.
- Skin and body protection : Wear as appropriate:
Safety shoes
Wear resistant gloves (consult your safety equipment supplier).
- Hygiene measures : General industrial hygiene practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Colour : opaque, white, off-white
- Odour : fatty odour
- Odour Threshold : No data available
- pH : 9
Concentration: 5 %
(as an emulsion)
- Melting point/freezing point : 32 °F / 0 °C
- Boiling point/boiling range : 212 °F / 100 °C
- Flash point : > 200.1 °F / 93.4 °C
Method: Pensky Martens closed cup
- Evaporation rate : No data available
- Flammability (solid, gas) : No data available
- Self-ignition : No data available
- Upper explosion limit / Upper flammability limit : No data available
- Lower explosion limit / Lower flammability limit : No data available
- Vapour pressure : < 1.33 hPa (68 °F / 20 °C)
- Relative vapour density : > 1

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AIR=1

Relative density	:	8.1 - 8.3 (68 °F / 20 °C)
Density	:	0.974 - 1.004 g/ml
Solubility(ies)		
Water solubility	:	dispersible
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	300 - 1,200 cps (68 °F / 20 °C)
Viscosity, kinematic	:	No data available
Oxidizing properties	:	No data available
Particle size	:	No data available


SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	Product will not undergo hazardous polymerization.
Incompatible materials	:	halogens strong mineral acids Strong oxidizing agents
Hazardous decomposition products	:	Carbon monoxide Carbon dioxide (CO2) undefined organics Formaldehyde Hydrocarbons Silicon oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

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Skin corrosion/irritation

Not classified based on available information.

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Remarks : Unlikely to cause eye irritation or injury.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.


Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : No data available

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SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 3,536 mg/l
 Exposure time: 96 h
 Test Type: static test
 Method: OECD Test Guideline 203
 GLP: no

LC50 (Oncorhynchus mykiss (rainbow trout)): > 1,000 mg/l
 Exposure time: 96 h
 Test Type: static test
 Method: EPS 1/RM/9
 GLP: no
 Remarks: see user defined free text

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 5,619 mg/l
 Exposure time: 48 h
 Test Type: static test
 Method: OECD Test Guideline 202
 GLP: no

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects


Product:

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.

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Contaminated packaging : Empty remaining contents.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

Not regulated as a dangerous good

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.


California Prop. 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment performed on the product as delivered and when used as intended.

The components of this product are reported in the following inventories:

TCSI : On the inventory, or in compliance with the inventory

TSCA : All substances listed as active on the TSCA inventory

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AIIC : On the inventory, or in compliance with the inventory
 DSL : All components of this product are on the Canadian DSL
 ENCS : Not in compliance with the inventory
 KECI : On the inventory, or in compliance with the inventory
 PICCS : On the inventory, or in compliance with the inventory
 IECSC : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.


SECTION 16. OTHER INFORMATION

Further information

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Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical

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Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data

SOLENIS Internal data

SOLENIS internal data including own and sponsored test reports

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US / EN



Univar USA Inc Safety Data Sheet

SDS No:

Version No:

Order No:

3075 Highland Pkwy, Ste 200, Downers Grove, IL 60515
(425) 889 3400

Emergency Assistance

For emergency assistance involving chemicals call
Chemtrec - (800) 424-9300



Univar
3075 Highland Pkwy STE 200
Downers Grove, IL 60515
425-889-3400

SAFETY DATA SHEET

1. Identification

Product identifier: AMMONIUM HYDROXIDE 10-35%

Other means of identification

Synonyms: Aqua Ammonia

SDS number: 000100000133

Recommended use and restriction on use

Recommended use: Not available.

Restrictions on use: Not known.

Emergency telephone number:For emergency assistance Involving chemicals

call CHEMTREC day or night at: 1-800-424-9300. CHEMTREC INTERNATIONAL Tel# 703-527-3887

2. Hazard(s) identification

Hazard classification

Health hazards

Acute toxicity (Oral) Category 4

Skin corrosion/irritation Category 1A

Serious eye damage/eye irritation Category 1

Environmental hazardsAcute hazards Category 3
to the aquatic environment

Label elements

Hazard symbol



Version: 1.2
Revision date: 05/29/2015



Signal word	Danger
Hazard statement	Corrosive. Harmful if swallowed. Causes severe skin burns and eye damage. Harmful to aquatic life.
Precautionary statement	
Prevention	Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dust or mists. Wear protective gloves/protective clothing/eye protection/face protection.
Response	IF INHALED: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF SWALLOWED: Call a POISON CENTER/doctor/ if you feel unwell. Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. Specific treatment (see this label). Wash contaminated clothing before reuse.
Storage	Store in a closed container. Store in a well-ventilated place. Store locked up.
Disposal	Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

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Revision date: 05/29/2015



Other hazards which do not result in GHS classification None.

3. Composition/information on ingredients

Substances

Chemical identity	Common name and synonyms	CAS number	Content in percent (%)*
Ammonium Hydroxide		1336-21-6	>=10 - <=35%
Water		7732-18-5	>=65 - <=90%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Ingestion: Do NOT induce vomiting. Never give liquid to an unconscious person. Get medical attention.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. Perform artificial respiration if breathing has stopped. Get medical attention.

Skin contact: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately.

Eye contact: If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

Most important symptoms/effects, acute and delayed

Symptoms: No data available.

Indication of immediate medical attention and special treatment needed

Treatment: No data available.

5. Fire-fighting measures

General fire hazards: No data available.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use: Foam. Carbon dioxide or dry powder.

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Unsuitable extinguishing media: No data available.
Specific hazards arising from the chemical: No data available.
Special protective equipment and precautions for firefighters
Special fire fighting procedures: No data available.
Special protective equipment for fire-fighters: No data available.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: No data available.
Methods and material for containment and cleaning up: Absorb spillage with non-combustible, absorbent material. Dike for later disposal.

7. Handling and storage

Precautions for safe handling: Container must be kept tightly closed. Do not get in eyes, on skin, on clothing. Use personal protective equipment as required. Use only in well-ventilated areas.
Conditions for safe storage, including any incompatibilities: No data available.

Version: 1.2
 Revision date: 05/29/2015



8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
Ammonium Hydroxide	TWA	25 ppm	US. ACGIH Threshold Limit Values (03 2013)
	STEL	35 ppm	US. ACGIH Threshold Limit Values (03 2013)
	REL	25 ppm 18 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	35 ppm 27 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	50 ppm 35 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	STEL	35 ppm 27 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	AN ESL	17 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	ST ESL	170 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	ST ESL	120 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	AN ESL	12 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	TWA PEL	25 ppm 18 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)
	STEL	35 ppm 27 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)

Appropriate engineering controls No data available.

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Individual protection measures, such as personal protective equipment

General information: No data available.
Eye/face protection: No data available.
Skin protection
 Hand protection: No data available.
 Other: No data available.
Respiratory protection: No data available.
Hygiene measures: No data available.

9. Physical and chemical properties

Physical state: Liquid
Form: No data available.
Color: No data available.
Odor: No data available.
Odor threshold: No data available.
pH: 11.6
Melting point/freezing point: -69 °C
Initial boiling point and boiling range: No data available.
Flash Point: No data available.
Evaporation rate: No data available.
Flammability (solid, gas): No data available.
Upper/lower limit on flammability or explosive limits
 Flammability limit - upper (%): No data available.
 Flammability limit - lower (%): No data available.
 Explosive limit - upper (%): No data available.
 Explosive limit - lower (%): No data available.
Vapor pressure: No data available.
Vapor density: No data available.
Relative density: No data available.
Solubility(ies)
 Solubility in water: No data available.
 Solubility (other): No data available.
Partition coefficient (n-octanol/water): No data available.

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Auto-ignition temperature: No data available.
Decomposition temperature: No data available.
Viscosity: No data available.

10. Stability and reactivity

Reactivity: No data available.
Chemical stability: No data available.
Possibility of hazardous reactions: No data available.
Conditions to avoid: No data available.
Incompatible materials: No data available.
Hazardous decomposition products: No data available.

11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

Ingestion: No data available.
Inhalation: No data available.
Skin contact: No data available.
Eye contact: No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product: ATEmix (): 350 mg/kg

Dermal

Product: No data available.

Inhalation

Product: No data available.

Repeated dose toxicity

Product: No data available.

Skin corrosion/irritation

Product: No data available.

Serious eye damage/eye irritation

Product: No data available.

Respiratory or skin sensitization

Product: No data available.

Carcinogenicity

Product: No data available.

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IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ cell mutagenicity

In vitro

Product: No data available.

In vivo

Product: No data available.

Reproductive toxicity

Product: No data available.

Specific target organ toxicity - single exposure

Product: No data available.

Specific target organ toxicity - repeated exposure

Product: No data available.

Aspiration hazard

Product: No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

Ammonium Hydroxide LC 50 (Fathead minnow (Pimephales promelas), 24 h): 17 mg/l Mortality LC 50 (Goldfish (Carassius auratus), 24 h): 17 mg/l Mortality LC 50 (Western mosquitofish (Gambusia affinis), 24 h): 18 mg/l Mortality LC 50 (Channel catfish (Ictalurus punctatus), 24 h): 2.36 mg/l Mortality LC 50 (Fathead minnow (Pimephales promelas), 24 h): 23.02 mg/l Mortality

Aquatic invertebrates

Product: No data available.

Specified substance(s):

Ammonium Hydroxide LC 50 (Water flea (Daphnia magna), 25 h): 60 mg/l Mortality LC 50 (Water flea (Ceriodaphnia dubia), 48 h): > 0 - < 10 mg/l Mortality LC 50 (Water flea (Daphnia magna), 50 h): 32 mg/l Mortality LC 50 (Water flea (Daphnia

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magna), 100 h): 20 mg/l Mortality

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and degradability

Biodegradation

Product: No data available.

BOD/COD ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration factor (BCF)

Product: No data available.

Partition coefficient n-octanol / water (log Kow)

Product: No data available.

Mobility in soil:

No data available.

Known or predicted distribution to environmental compartments

Ammonia, aqueous solution No data available.

Water No data available.

Known or predicted distribution to environmental compartments

Water No data available.

13. Disposal considerations

Disposal instructions: No data available.

Contaminated packaging: No data available.

14. Transport information

DOT

UN number: UN 2672
UN proper shipping name: Ammonia solutions
Transport hazard class(es)
Class: 8
Label(s): 8
Packing group: III
Marine Pollutant: Not regulated.

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Special precautions for user: -

IMDG

UN number: UN 2672
UN proper shipping name: AMMONIA SOLUTION
Transport hazard class(es)
Class: 8
Label(s): 8
EmS No.: F-A, S-B
Packing group: III
Marine Pollutant: Not regulated.
Special precautions for user: -

IATA

UN number: UN 2672
Proper Shipping Name: AMMONIA SOLUTION
Transport hazard class(es):
Class: 8
Label(s): 8
Packing group: III
Environmental hazards: Not regulated.
Special precautions for user: -
Other information
Passenger and cargo aircraft: Allowed.
Cargo aircraft only: Allowed.

15. Regulatory information

US federal regulations US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

Ammonium Hydroxide Reportable quantity: 1000 lbs.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

Not listed.

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SARA 302 Extremely hazardous substance

None present or none present in regulated quantities.

SARA 304 Emergency release notification

<u>Chemical identity</u>	<u>RQ</u>
Ammonium Hydroxide	1000 lbs.

SARA 311/312 Hazardous chemical

<u>Chemical identity</u>	<u>Threshold Planning Quantity</u>
Ammonium Hydroxide	500 lbs

SARA 313 (TRI reporting)

<u>Chemical identity</u>	<u>Reporting threshold for other users</u>	<u>Reporting threshold for manufacturing and processing</u>
Ammonium Hydroxide	10000 lbs	25000 lbs.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

Ammonium Hydroxide Reportable quantity: 1000 lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US state regulations

US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act

Ammonium Hydroxide Listed

US. Massachusetts RTK - Substance List

Ammonium Hydroxide Listed

US. Pennsylvania RTK - Hazardous Substances

Ammonium Hydroxide Listed

US. Rhode Island RTK

Ammonium Hydroxide Listed

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Inventory Status: Australia AICS:	Not in compliance with the inventory.
Canada DSL Inventory List:	Not in compliance with the inventory.
EU EINECS List:	On or in compliance with the inventory
EU ELINCS List:	Not in compliance with the inventory.
Japan (ENCS) List:	Not in compliance with the inventory.
EU No Longer Polymers List:	Not in compliance with the inventory.
China Inv. Existing Chemical Substances:	Not in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI):	Not in compliance with the inventory.
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	Not in compliance with the inventory.
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	Not in compliance with the inventory.
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

16. Other information, including date of preparation or last revision

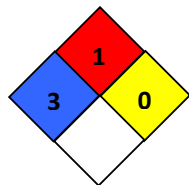
HMIS Hazard ID

Health	3
Flammability	1
Physical hazards	0
PERSONAL PROTECTION	B

B - Safety Glasses & Gloves

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; *Chronic health effect

NFPA Hazard ID



	Flammability
	Health
	Reactivity
	Special hazard.

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

Issue date: 05/29/2015
Revision date: No data available.
Version #: 1.2
Further information: No data available.

Version: 1.2
Revision date: 05/29/2015



Univar USA Inc Safety Data Sheet

For Additional Information contact SDS Coordinator during business hours, Pacific time: (425) 889-3400

Notice

Univar USA Inc. ("Univar") expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein, and shall under no circumstances be liable for incidental or consequential damages.

Do not use ingredient information and/or ingredient percentages in this SDS as a product specification. For product specification information refer to a product specification sheet and/or a certificate of analysis. These can be obtained from your local Univar sales office.

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Univar makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Univar's control and therefore users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product, or from the publication or use of, or reliance upon, information contained herein.

This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process



Univar USA Inc Material Safety Data Sheet

MSDS No:

Version No:

Order No:

Univar USA Inc., 17425 NE Union Hill Rd., Redmond WA 98052
(425) 889 3400

Emergency Assistance

For emergency assistance involving chemicals call
Chemtrec - (800) 424-9300

COMPANY IDENTITY: Univar
PRODUCT IDENTITY: SULFURIC ACID 93%
SDS NUMBER: CDS-2441

SDS DATE: 01/15/2015
ORIGINAL: 01/15/2015

SAFETY DATA SHEET

This Safety Data Sheet conforms to ANSI Z400.5, and to the format requirements of the Global Harmonizing System.
THIS SDS COMPLIES WITH 29 CFR 1910.1200 (HAZARD COMMUNICATION STANDARD)
IMPORTANT: Read this SDS before handling & disposing of this product.
Pass this information on to employees, customers, & users of this product.

SECTION 1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER

PRODUCT IDENTITY: SULFURIC ACID 93%
PRODUCT USES: Mineral Acid

COMPANY IDENTITY: Univar
COMPANY ADDRESS: 17425 NE Union Hill Road
COMPANY CITY: Redmond, WA 98052
COMPANY PHONE: 1-425-889-3400
EMERGENCY PHONES: CHEMTREC: 1-800-424-9300 (USA)
CANUTEC: 1-613-996-6666 (CANADA)

SECTION 2. HAZARDS IDENTIFICATION

DANGER!!



2.1 HAZARD STATEMENTS: (CAT = Hazard Category)

- (H200s) PHYSICAL: Corrosive To Metals:
H290 MAY BE CORROSIVE TO METALS.(CAT:1)
- (H300s) HEALTH: Skin Corrosion/Irritation:
H314 CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.(CAT:1)
- (H300s) HEALTH: Acute Toxicity, Inhalation:
H332 HARMFUL IF INHALED.(CAT:4)

2.2 PRECAUTIONARY STATEMENTS:

**EXPOSURE PREVENTION: AVOID ALL CONTACT!
PREVENT DISPERSION OF MISTS OR DUST!**

**P100s = General, P200s = Prevention,
P300s = Response, P400s = Storage, P500s = Disposal**

- P234 Keep only in original container.
- P260 Do not breathe dust/fume/gas/mist/vapors/spray.
- P262 Do not get in eyes, on skin, or on clothing.
- P264 Wash hands thoroughly after handling.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P301+330+331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303+361+353 IF ON SKIN (OR HAIR): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+340 IF INHALED: Remove victim to fresh air & keep at rest in a position comfortable for breathing.
- P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present & easy to do - Continue rinsing.
- P310 Immediately call a POISON CENTER or doctor/physician.
- P363 Wash contaminated clothing before reuse.
- P390 Absorb spillage to prevent material damage.
- P404 Store in a closed container.
- P405 Store locked up.
- P501 Dispose of contents/container to an approved waste disposal plant.

SEE SECTIONS 8, 11 & 12 FOR TOXICOLOGICAL INFORMATION.

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SDS DATE: 01/15/2015
ORIGINAL: 01/15/2015

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

MATERIAL	CAS#	EINECS#	WT %
Sulfuric Acid	7664-93-9	231-639-5	93
Water	7732-18-5	231-791-2	7

TRACE COMPONENTS: Trace ingredients (if any) are present in < 1% concentration, (< 0.1% for potential carcinogens, reproductive toxins, respiratory tract mutagens, and sensitizers). None of the trace ingredients contribute significant additional hazards at the concentrations that may be present in this product. All pertinent hazard information has been provided in this document, per the requirements of the Federal Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalents, and Canadian Hazardous Materials Identification System Standard (CPR 4).

SECTION 4. FIRST AID MEASURES

- 4.1 MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE & CHRONIC:
See Section 11 for symptoms/effects, acute & chronic.
- 4.2 GENERAL ADVICE:
First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists, refer to Section 8 for specific personal protective equipment.
- 4.3 EYE CONTACT:
If this product enters the eyes, check for and remove any contact lenses. Open eyes while under gently running water. Use sufficient force to open eyelids. "Roll" eyes to expose more surface. Minimum flushing is for 15 minutes. Seek immediate medical attention.
- 4.4 SKIN CONTACT:
If the product contaminates the skin, immediately begin decontamination with running water. Minimum flushing is for 15 minutes. Remove contaminated clothing, taking care not to contaminate eyes. If skin becomes irritated and irritation persists, medical attention may be necessary. Wash contaminated clothing before reuse, discard contaminated shoes.
- 4.5 INHALATION:
After high vapor exposure, remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, trained personnel should immediately begin artificial respiration. If the heart has stopped, trained personnel should immediately begin cardiopulmonary resuscitation (CPR). Seek immediate medical attention.
- 4.6 SWALLOWING:
If swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, give two glasses of water to drink. DO NOT INDUCE VOMITING. Never induce vomiting or give liquids to someone who is unconscious, having convulsions, or unable to swallow. Seek immediate medical attention.
- 4.7 RESCUERS: Victims of chemical exposure must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take a copy of label and SDS to physician or health professional with victim.
- 4.8 NOTES TO PHYSICIAN:
There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient. Any material aspirated during vomiting may cause lung injury. Therefore, emesis should not be induced mechanically or pharmacologically. If it is considered necessary to evacuate the stomach contents, this should be done by means least likely to cause aspiration (such as: Gastric lavage after endotracheal intubation).

SECTION 5. FIRE FIGHTING MEASURES

- 5.1 FIRE & EXPLOSION PREVENTIVE MEASURES:
Isolate from alkalies, oxidizers, organics, extreme heat and open flames.
- 5.2 SUITABLE (& UNSUITABLE) EXTINGUISHING MEDIA:
Use extinguishing agent appropriate for surrounding fire.
- 5.3 SPECIAL PROTECTIVE EQUIPMENT & PRECAUTIONS FOR FIRE FIGHTERS:
Water spray may be ineffective on fire but can protect fire-fighters & cool closed containers. Use fog nozzles if water is used.
Do not enter confined fire-space without full bunker gear.
(Helmet with face shield, bunker coats, gloves & rubber boots).

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SECTION 5. FIRE FIGHTING MEASURES (CONTINUED)

5.4 SPECIFIC HAZARDS OF CHEMICAL & HAZARDOUS COMBUSTION PRODUCTS:

SLIGHTLY COMBUSTIBLE!

Reacts with most metals producing hydrogen which is extremely flammable & may explode. Keep container tightly closed. Isolate from oxidizers, alkalis, heat, & open flame. Applying to hot surfaces requires special precautions. Closed containers may explode if exposed to extreme heat. Continue all label precautions!

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 SPILL AND LEAK RESPONSE AND ENVIRONMENTAL PRECAUTIONS:

Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a spill, clear the affected area, protect people, and respond with trained personnel. ELIMINATE all ignition sources (no smoking, flares, sparks, or flames in immediate area). Prevent additional discharge of material, if possible to do so without hazard. For large spillse, implement cleanup procedures and, if in public area, advise authorities.

6.2 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, EMERGENCY PROCEDURES:

The proper personal protective equipment for incidental releases (such as: 1 Liter of the product released in a well-ventilated area), use impermeable gloves, they should be Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), chemical resistant suit and boots, hard-hat, and Self-Contained Breathing Apparatus specific for the material handled, goggles, face shield, and appropriate body protection. In the event of a large release, use impermeable gloves, specific for the material handled, chemically resistant suit and boots, and hard hat. Self-Contained Breathing Apparatus or respirator may be required where engineering controls are not adequate or conditions for potential exposure exist. When respirators are required, select NIOSH/MSHA approved based on actual or potential airborne concentrations in accordance with latest OSHA and/or ANSI recommendations.

6.3 ENVIRONMENTAL PRECAUTIONS:

Stop spill at source. Construct temporary dikes of dirt, sand, or any appropriate readily available material to prevent spreading of the material. Close or cap valves and/or block or plug hole in leaking container and transfer to another container. Keep from entering storm sewers and ditches which lead to waterways, and if necessary, call the local fire or police department for immediate emergency assistance.

6.4 METHODS AND MATERIAL FOR CONTAINMENT & CLEAN-UP:

Absorb spilled liquid with polypads or other suitable absorbent materials. If necessary, neutralize using suitable buffering material, (acid with soda ash or base with phosphoric acid), and test area with litmus paper to confirm neutralization. Clean up with non-combustible absorbent (such as: sand, soil, and so on). Shovel up and place all spill residue in suitable containers. dispose of at an appropriate waste disposal facility according to current applicable laws and regulations and product characteristics at time of disposal (see Section 13 - Disposal Considerations).

SECTION 7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING:

Isolate from oxidizers, alkalis, heat, & open flame. Use only with adequate ventilation. Do not get in eyes, on skin or clothing. Wear OSHA Standard full face shield. Consult Safety Equipment Supplier. Wear goggles, face shield, gloves, apron & footwear impervious to material. Wash clothing before reuse. Continue all label precautions! NEVER pour water into this substance. When dissolving or diluting, always add it slowly to the water.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

Keep separated from strong oxidants, strong bases, combustible & reducing substances, metals, food & feedstuffs, incompatible materials. May be stored in stainless steel containers. See: Section 10, <Materials to Avoid>. Do not store above 49 C/120 F. Keep container tightly closed & upright when not in use to prevent leakage. Reacts with most metals producing hydrogen which is extremely flammable & may explode. Wear full face shield, gloves & full protective clothing when opening or handling. When empty, drain completely, replace bungs securely.

7.3 NONBULK: CONTAINERS:

Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Store containers away from incompatible chemicals (see Section 10, Stability and Reactivity). Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Empty containers should be handled with care. Never store food, feed, or drinking water in containers which held this product.

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SECTION 7. HANDLING AND STORAGE (CONTINUED)

7.4 BULK CONTAINERS:

All tanks and pipelines which contain this material must be labeled. Perform routine maintenance on tanks or pipelines which contain this product. Report all leaks immediately to the proper personnel.

7.5 TANK CAR SHIPMENTS:

Tank cars carrying this product should be loaded and unloaded in strict accordance with tank-car manufacturer's recommendation and all established on-site safety procedures. Appropriate personal protective equipment must be used (see Section 8, Engineering Controls and Personal Protective Equipment.). All loading and unloading equipment must be inspected, prior to each use. Loading and unloading operations must be attended, at all times. Tank cars must be level, brakes must be set or wheels must be locked or blocked prior to loading or unloading. Tank car (for loading) or storage tanks (for unloading) must be verified to be correct for receiving this product and be properly prepared, prior to starting the transfer operations. Hoses must be verified to be in the correct positions, before starting transfer operations. A sample (if required) must be taken and verified (if required) prior to starting transfer operations. All lines must be blown-down and purged before disconnecting them from the tank car or vessel.

7.6 PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:

Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Always use this product in areas where adequate ventilation is provided. Collect all rinsates and dispose of according to applicable Federal, State, Provincial, or local procedures.

7.7 EMPTY CONTAINER WARNING:

Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. **DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY BURST AND CAUSE INJURY OR DEATH.**

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 EXPOSURE LIMITS:

MATERIAL	CAS#	EINECS#	TWA (OSHA)	TLV (ACGIH)	IDLH (NIOSH)
Sulfuric Acid	7664-93-9	231-639-5	1.0 mg/m ³	1.0 mg/m ³	15 mg/m ³
Water	7732-18-5	231-791-2	None Known	None Known	

This product contains no EPA Hazardous Air Pollutants (HAP) in amounts > 0.1%.

8.2 APPROPRIATE ENGINEERING CONTROLS:

RESPIRATORY EXPOSURE CONTROLS

Airborne concentrations should be kept to lowest levels possible. If vapor, dust or mist is generated and the occupational exposure limit of the product, or any component of the product, is exceeded, use appropriate NIOSH or MSHA approved air purifying or air-supplied respirator authorized in 29 CFR 1910.134, European Standard EN 149, or applicable State regulations, after determining the airborne concentration of the contaminant. Air supplied respirators should always be worn when airborne concentration of the contaminant or oxygen content is unknown. Maintain airborne contaminant concentrations below exposure limits. If adequate ventilation is not available or there is potential for airborne exposure above the exposure limits, a respirator may be worn up to the respirator exposure limitations, check with respirator equipment manufacturer's recommendations/limitations. For particulates, a particulate respirator (NIOSH Type N95 or better filters) may be worn. If oil particles (such as: lubricants, cutting fluids, glycerine, and so on) are present, use a NIOSH Type R or P filter. For a higher level of protection, use positive pressure supplied air respiration protection or Self-Contained Breathing Apparatus or if oxygen levels are below 19.5% or are unknown.

EMERGENCY OR PLANNED ENTRY INTO UNKNOWN CONCENTRATIONS OR IDLH CONDITIONS

Positive pressure, full-face piece Self-Contained Breathing Apparatus; or positive pressure, full-face piece Self-Contained Breathing Apparatus with an auxilliary positive pressure Self-Contained Breathing Apparatus.

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION (CONTINUED)

VENTILATION

LOCAL EXHAUST: Necessary MECHANICAL (GENERAL): Necessary
SPECIAL: None OTHER: None
Please refer to ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

8.3 INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT:

EYE PROTECTION:

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If contact is possible, chemical splash goggles should be worn, when a higher degree of protection is necessary, use splash goggles or safety glasses. Face-shields are recommended when the operation can generate splashes, sprays or mists.

HAND PROTECTION:

Use gloves chemically resistant to this material. Preferred examples: Butyl rubber, Chlorinated Polyethylene, Polyethylene, Ethyl vinyl alcohol laminate ("EVAL"), Polyvinyl alcohol ("PVA"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"), Neoprene, Nitrile/butadiene rubber ("nitril" or "NBR"), Polyvinyl chloride ("PVC" or "vinyl"), Viton. Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

BODY PROTECTION:

Use body protection appropriate for task. Cover-all, rubber aprons, or chemical protective clothing made from impervious materials are generally acceptable, depending on the task.

WORK & HYGIENIC PRACTICES:

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using toilet facilities and at the end of the working period. Provide readily accessible eye wash stations & safety showers. Remove clothing that becomes contaminated. Destroy contaminated leather articles. Launder or discard contaminated clothing.

SECTION 9. PHYSICAL & CHEMICAL PROPERTIES

APPEARANCE:	Oily Liquid, Water-White to slightly yellow
ODOR:	None
ODOR THRESHOLD:	Not Available
pH (Neutrality):	< 1
MELTING POINT/FREEZING POINT:	-29 C / -20 F
BOILING RANGE (IBP,Dry Point):	276 to 281 C / 528 to 538 F
FLASH POINT (TEST METHOD):	Not Applicable
EVAPORATION RATE (n-Butyl Acetate=1):	Not Applicable
FLAMMABILITY CLASSIFICATION:	Noncombustible
LOWER FLAMMABLE LIMIT IN AIR (% by vol):	10.0 (Lowest Component)
UPPER FLAMMABLE LIMIT IN AIR (% by vol):	Not Available
VAPOR PRESSURE (mm of Hg)@20 C	< 0.3
VAPOR DENSITY (air=1):	3.4
GRAVITY @ 68/68F / 20/20C:	
DENSITY:	1.830
SPECIFIC GRAVITY (Water=1):	1.835
POUNDS/GALLON:	15.3
WATER SOLUBILITY:	Complete
PARTITION COEFFICIENT (n-Octane/Water):	Not Available
AUTO IGNITION TEMPERATURE:	Not Applicable
DECOMPOSITION TEMPERATURE:	Not Available
VOCs (>0.044 Lbs/Sq In) :	0.0 Vol% /0.0 g/L / 0.000 Lbs/Gal
TOTAL VOC'S (TVOC)*:	0.0 Vol% /0.0 g/L / 0.000 Lbs/Gal
NONEXEMPT VOC'S (CVOC)*:	0.0 Vol% /0.0 g/L / 0.000 Lbs/Gal
HAZARDOUS AIR POLLUTANTS (HAPS):	0.0 Wt% /0.0 g/L / 0.000 Lbs/Gal
NONEXEMPT VOC PARTIAL PRESSURE (mm of Hg @ 20 C)	0.0
VISCOSITY @ 100 C (ASTM D445) 514.0	
VISCOSITY @ 20 C (ASTM D445):	Not Available

* Using CARB (California Air Resources Board Rules).

COMPANY IDENTITY: Univar
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SECTION 10. STABILITY & REACTIVITY

10.1 REACTIVITY & CHEMICAL STABILITY:

Stable under normal conditions, but Reacts with most metals producing hydrogen which is extremely flammable & may explode.

10.2 POSSIBILITY OF HAZARDOUS REACTIONS & CONDITIONS TO AVOID:

Isolate from sources of ignition, heat, & open flame. Reacts vigorously with water.

10.3 INCOMPATIBLE MATERIALS:

The substance is a strong acid, reacts violently with bases and is corrosive. Upon heating, irritating and toxic fumes are formed including sulfur oxides. The substance is a strong oxidant & reacts violently with combustible & reducing materials. Corrosive to most common metals, forming flammable/explosive gas (hydrogen). Sulfuric acid reacts violently with water & organic materials with much heat. Hazardous gases are evolved on contact with chemicals such as cyanides, sulfides, and carbides.

10.4 HAZARDOUS DECOMPOSITION PRODUCTS:

Upon heating, irritating and toxic fumes are formed including sulfur oxides.

10.5 HAZARDOUS POLYMERIZATION:

Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 ACUTE HAZARDS

11.11 EYE & SKIN CONTACT:

Severe burns to skin, defatting, dermatitis.
Animal testing indicates this material is corrosive to the eye.
Severe burns to eyes, redness, tearing, blurred vision.
Liquid can cause severe skin & eye burns. Wash thoroughly after handling.

11.12 INHALATION:

Severe respiratory tract irritation may occur. Vapor harmful.

11.13 SWALLOWING:

Harmful or fatal if swallowed.

11.2 SUBCHRONIC HAZARDS/CONDITIONS AGGRAVATED

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Pre-existing disorders of any target organs mentioned in this Document can be aggravated by over-exposure by routes of entry to components of this product. Persons with these disorders should avoid use of this product.

11.3 CHRONIC HAZARDS

11.31 CANCER, REPRODUCTIVE & OTHER CHRONIC HAZARDS:

PROVEN Carcinogen, Human, Group 1 (IARC), SUSPECTED Carcinogen, Human, Group A2 (ACGIH).

11.32 TARGET ORGANS: May cause damage to target organs, based on animal data.

11.33 IRRITANCY: Irritating to contaminated tissue.

11.34 SENSITIZATION: No component is known as a sensitizer.

11.35 MUTAGENICITY: No known reports of mutagenic effects in humans.

11.36 EMBRYOTOXICITY: No known reports of embryotoxic effects in humans.

11.37 TERATOGENICITY: No known reports of teratogenic effects in humans.

11.38 REPRODUCTIVE TOXICITY: No known reports of reproductive effects in humans.

COMPANY IDENTITY: Univar
PRODUCT IDENTITY: SULFURIC ACID 93%
SDS NUMBER: CDS-2441

SDS DATE: 01/15/2015
ORIGINAL: 01/15/2015

SECTION 11. TOXICOLOGICAL INFORMATION (CONTINUED)

A MUTAGEN is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate across generational lines. An EMBRYOTOXIN is a chemical which causes damage to a developing embryo (such as: within the first 8 weeks of pregnancy in humans), but the damage does not propagate across generational lines. A TERATOGEN is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A REPRODUCTIVE TOXIN is any substance which interferes in any way with the reproductive process.

11.4 MAMMALIAN TOXICITY INFORMATION

LD50 (Oral, Acute): 2140 mg/kg (Rat)
LC50 / 2 hours: 510 mg/m³ (Rat), 320 mg/m³ (Mouse)

SECTION 12. ECOLOGICAL INFORMATION

12.1 ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

12.2 EFFECT OF MATERIAL ON PLANTS AND ANIMALS:

This product may be harmful or fatal to plant and animal life if released into the environment. Refer to Section 11 (Toxicological Information) for further data on the effects of this product's components on test animals.

12.3 EFFECT OF MATERIAL ON AQUATIC LIFE:

The substance is harmful to aquatic organisms.
LC50 / 48 hours: 49 mg/L, Tap Water, 20 C (Bluegill sunfish)
LC50 / 48 hours: 100 - 330 mg/L, Aerated Water (Flounder)

12.4 MOBILITY IN SOIL

Mobility of this material has not been determined.

12.5 DEGRADABILITY

This product is completely biodegradable.

12.6 ACCUMULATION

Bioaccumulation of this product has not been determined.

SECTION 13. DISPOSAL CONSIDERATIONS

Processing, use or contamination may change the waste disposal requirements. Do not dispose of on land, in surface waters, or in storm drains. Waste should be recycled or disposed of in accordance with regulations. Large amounts should be collected for reuse or consigned to licensed hazardous waste haulers for disposal.

ALL DISPOSAL MUST BE IN ACCORDANCE WITH ALL FEDERAL, STATE, PROVINCIAL, AND LOCAL REGULATIONS. IF IN DOUBT, CONTACT PROPER AGENCIES. EPA CHARACTERISTIC: D002

SECTION 14. TRANSPORT INFORMATION

MARINE POLLUTANT: No
DOT/TDG SHIP NAME: UN1830, Sulfuric acid, 8, PG-II
DRUM LABEL: (CORROSIVE)
IATA / ICAO: UN1830, Sulfuric acid, 8, PG-II
IMO / IMDG: UN1830, Sulfuric acid, 8, PG-II
EMERGENCY RESPONSE GUIDEBOOK NUMBER: 137



COMPANY IDENTITY: Univar
PRODUCT IDENTITY: SULFURIC ACID 93%
SDS NUMBER: CDS-2441

SDS DATE: 01/15/2015
ORIGINAL: 01/15/2015

SECTION 15. REGULATORY INFORMATION

15.1 EPA REGULATION:

SARA SECTION 311/312 HAZARDS: Acute Health, Chronic Health, Reactivity

All components of this product are on the TSCA list.

SARA Title III Section 313 Supplier Notification

This product contains the indicated <*> toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning & Community Right-To-Know Act of 1986 & of 40 CFR 372. This information must be included in all MSDSs that are copied and distributed for this material.

SARA TITLE III INGREDIENTS	CAS#	EINECS#	WT%	(REG.SECTION)	RQ(LBS)
*Sulfuric Acid	7664-93-9	231-639-5	93	(302,311,312,313)	1000

15.2 STATE REGULATIONS:

CALIFORNIA SAFE DRINKING WATER & TOXIC ENFORCEMENT ACT (PROPOSITION 65):

This product contains no chemicals known to the State of California to cause cancer or reproductive toxicity.

15.3 INTERNATIONAL REGULATIONS

The identified components of this product are listed on the chemical inventories of the following countries:

Australia (AICS), Canada (DSL or NDSL), China (IECSC), Europe (EINECS, ELINCS), Japan (METI/CSCL, MHLW/ISHL), South Korea (KECI), New Zealand (NZIoC), Philippines (PICCS), Switzerland (SWISS), Taiwan (NECSI), USA (TSCA).

15.4 CANADA: WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)

D2B: Irritating to skin / eyes.

E: Corrosive Material.

This product was classified using the hazard criteria of the Controlled Products Regulations (CPR). This Document contains all information required by the CPR.

SECTION 16. OTHER INFORMATION

16.1 HAZARD RATINGS:

HEALTH (NFPA): 3, HEALTH (HMIS): 3, FLAMMABILITY: 0, PHYSICAL HAZARD: 2

(Personal Protection Rating to be supplied by user based on use conditions.)

This information is intended solely for the use of individuals trained in the NFPA & HMIS hazard rating systems.

16.2 EMPLOYEE TRAINING

See Section 2 for Risk & Safety Statements. Employees should be made aware of all hazards of this material (as stated in this SDS) before handling it.

16.3 SDS DATE: 01/15/2015

Univar USA Inc Material Safety Data Sheet

For Additional Information contact MSDS Coordinator during business hours, Pacific time: (425) 889-3400

Notice

Univar USA Inc. ("Univar") expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein, and shall under no circumstances be liable for incidental or consequential damages.

Do not use ingredient information and/or ingredient percentages in this MSDS as a product specification. For product specification information refer to a product specification sheet and/or a certificate of analysis. These can be obtained from your local Univar sales office.

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Univar makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Univar's control and therefore users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product, or from the publication or use of, or reliance upon, information contained herein.

This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process



Material Safety Data Sheet

PHOSPHORIC ACID 35%

Date Prepared: 1/16/06

Supersedes Date: 8/13/04

1. PRODUCT AND COMPANY DESCRIPTION

Innophos
PO Box 8000
259 Prospect Plains Road
Cranbury NJ 08512-8000

Emergency Phone Numbers:

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CONTACT: CHEMTREC (800-424-9300 within the United States or 703-527-3887 for international collect calls) or INNOPHOS ECT (Emergency Communication Team) at 615-386-7816.

For Product Information:

(609) 495-2495

Chemical Name or Synonym:

ORTHOPHOSPHORIC ACID; WHITE PHOSPHORIC ACID

Molecular Formula:

H₃PO₄

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Reg Number	OSHA Hazard	Percentage
PHOSPHORIC ACID	7664-38-2	Y	15.0 - 75.0
WATER	7732-18-5	N	25.0 - 85.0

3. HAZARDS IDENTIFICATION

A. EMERGENCY OVERVIEW:
Physical Appearance and Odor:

colorless slightly viscous liquid, odorless.

Warning Statements:

DANGER! CAUSES BURNS.

B. POTENTIAL HEALTH EFFECTS:

Acute Eye:

Corrosive. Causes tissue destruction, permanent damage to the cornea, blindness.

Acute Skin:

Causes irritation, burns.

Acute Inhalation:

Mists may cause lung irritation, shortness of breath, fluid in lungs.

Acute Ingestion:

Can cause nausea, vomiting, diarrhea, corrosion, burns to mouth and esophagus, abdominal pain, chest pain, shortness of breath, seizures, death.

Chronic Effects:

This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

4. FIRST AID MEASURES

FIRST AID MEASURES FOR ACCIDENTAL:**Eye Exposure:**

Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek immediate medical attention, preferably with an ophthalmologist. If the physician is not immediately available, eye irrigation should be continued for an additional 15 minutes. If it is necessary to transport the patient to a physician and the eye needs to be bandaged, use a dry sterile cloth pad and cover both eyes.

Skin Exposure:

Immediately wipe excess material off skin with a dry cloth; then wash skin with plenty of soap and water for at least 15 minutes. Seek medical attention. Remove contaminated clothing and shoes while washing. Clean contaminated clothing and shoes before re-use or discard if they cannot be thoroughly cleaned.

Inhalation:

Remove victim from immediate source of exposure and assure that the victim is breathing. If breathing is difficult, administer oxygen, if available. If victim is not breathing, administer CPR (cardio-pulmonary resuscitation). Seek immediate medical attention.

Ingestion:

If victim is conscious and alert, give 2-3 glasses of water to drink and do not induce vomiting. Seek immediate medical attention. Do not leave victim unattended. To prevent aspiration of swallowed product, lay victim on side with head lower than waist. Vomiting may occur spontaneously. If vomiting occurs and the victim is conscious, give water to further dilute the chemical.

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:

Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

NOTES TO PHYSICIAN:

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

This material is an acid. The primary toxicity of this product is due to its irritant effects on mucous membranes.

INHALATION: If cough or shortness of breath occurs, evaluate the possibility of bronchitis or pneumonitis. Chest

x-ray and arterial blood gases can be used to determine the presence of pulmonary edema. In severe cases, use of humidified oxygen and assisted ventilation including positive end expiratory pressure (PEEP) may be needed. Parenteral steroids may be useful in limiting the extent of pulmonary damage.

SKIN: Wash exposed area thoroughly with soap and water. Chemical burns from strong acids are generally treated the same as thermal burns.

EYES: Irrigate eyes for 15 minutes with sterile saline. If irritation, pain, swelling, photophobia or lacrimation persist, examination by an ophthalmologist is recommended.

INGESTION: If not already performed by first aid personnel, irrigate mouth with large amounts of water and dilute the acid by having victim drink 4 to 8 ounces of water or milk. DO NOT induce vomiting. Use of gastric lavage is controversial. The advantage of removal of acid must be weighted against the risk of perforation or bleeding. If a large amount of acid (> 1 ml/kg body weight) has been recently ingested, cautious gastric lavage is generally advised if the patient is alert and there is little risk of convulsions. Consultation with a gastroenterologist and/or surgeon is advised. Serious complications such as perforation or stricture of the esophagus may occur requiring care by specialists. Laryngeal edema may develop requiring intubation or tracheostomy.

5. FIRE FIGHTING MEASURES

FIRE HAZARD DATA:

Flash Point:
Not Applicable

Extinguishing Media:
Not combustible. Use extinguishing method suitable for surrounding fire.

Special Fire Fighting Procedures:
Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Keep unnecessary people away, isolate hazard area and deny entry. Evacuate residents who are downwind of fire. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later. Persons who may have been exposed to contaminated smoke should be immediately examined by a physician and checked for symptoms of poisoning. The symptoms should not be mistaken for heat exhaustion or smoke inhalation.

Unusual Fire and Explosion Hazards:
Not combustible.

Hazardous Decomposition Materials (Under Fire Conditions):
oxides of phosphorus

6. ACCIDENTAL RELEASE MEASURES

Evacuation Procedures and Safety:
Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Containment of Spill:
Dike or retain dilution water or water from firefighting for later disposal. Follow procedure described below under Cleanup and Disposal of Spill.

Cleanup and Disposal of Spill:

Exercise caution during neutralization as considerable heat may be generated. Carefully neutralize spill with soda ash. Clean up residual material by washing area with water.

Environmental and Regulatory Reporting:

Runoff from fire control or dilution water may cause pollution. Large spills should be handled according to a predetermined plan. For assistance in developing a plan contact the Technical Service Department using the Product Information phone number in Section 1.

7. HANDLING AND STORAGE

Minimum/Maximum Storage Temperatures:

Not Available

Handling:

Do not get on skin or in eyes. Avoid breathing vapors and mists. Do not ingest. This product reacts violently with bases liberating heat and causing spattering.

When diluting an acid, ALWAYS add the acid slowly to water and stir well to avoid spattering. NEVER ADD WATER TO ACID.

Storage:

Store in an area that is cool, dry, well-ventilated, Store in closed containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Introductory Remarks:

These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs. Waste resulting from these procedures should be handled in accordance with Section 13: Disposal Considerations.

Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

Exposure Guidelines:

Exposure limits represent regulated or recommended worker breathing zone concentrations measured by validated sampling and analytical methods, meeting the regulatory requirements. The following limits apply to this material, where, if indicated, S=skin and C=ceiling limit:

PHOSPHORIC ACID

	Notes	TWA	STEL
ACGIH		1 mg/cu m	3 mg/cu m
OSHA		1 mg/cu m	3 mg/cu m

Engineering Controls:

Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: local exhaust ventilation at the point of generation.

Respiratory Protection:

When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne

concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Under normal conditions, in the absence of other airborne contaminants, the following devices should provide protection from this material up to the conditions specified by the appropriate OSHA, WHMIS or ANSI standard(s):
Air-purifying (half-mask/full-face) respirator with cartridges/canister approved for use against acid gases.

Eye/Face Protection:

Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.

Eye contact should be prevented through use of chemical safety glasses with side shields or splash proof goggles. An emergency eye wash must be readily accessible to the work area. Face contact should be prevented through use of a face shield.

Skin Protection:

Skin contact should be prevented through use of suitable protective clothing, gloves and footwear, selected with regard for use conditions and exposure potential. Consideration must be given both to durability as well as permeation resistance.

Work Practice Controls:

Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material:

- (1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- (2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- (3) Wash exposed skin promptly to remove accidental splashes or contact with this material.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product Information phone number in Section 1 for its exact specifications.

Physical Appearance:

colorless slightly viscous liquid.

Odor:

odorless.

pH:

< 1 at 1 wt/wt%.

Specific Gravity:

Not Available

Density:

1.0824 to 1.58 g/ml at 25 C (77 F).

Water Solubility:

miscible

Melting Point Range:

Not Available

Freezing Point Range:

-4 to -70 C (25 to -94 F)

Boiling Point Range:

100 to 135 C (212 to 275 F) at 760 mmHg

Vapor Pressure:

17.15 to 5.65 mmHg at 20 C (68 F)

Vapor Density:

Not Available

10. STABILITY AND REACTIVITY

Chemical Stability:

This material is stable under normal handling and storage conditions described in Section 7.

Conditions To Be Avoided:

none known

Materials/Chemicals To Be Avoided:

fluorine

strong oxidizing agents

strong reducing agents

bases

metals

sulfur trioxide

phosphorus pentoxide

The Following Hazardous Decomposition Products Might Be Expected:**Decomposition Type: thermal**

oxides of phosphorus

Hazardous Polymerization Will Not Occur.**Avoid The Following To Inhibit Hazardous Polymerization:**

not applicable

11. TOXICOLOGICAL INFORMATION

Acute Eye Irritation:**Toxicological Information and Interpretation:**

eye - eye irritation, 119 mg, rabbit. Severely irritating.

eye - eye irritation, rabbit.

Acute Skin Irritation:**Toxicological Information and Interpretation:**

skin - skin irritation, 595 mg/24 hr, rabbit. Severely irritating.

skin - skin irritation, rabbit.

Acute Dermal Toxicity:**Toxicological Information and Interpretation:**

LD50 - lethal dose 50% of test species, 2740 mg/kg, rabbit.

Acute Respiratory Irritation:

No test data found for product.

Acute Inhalation Toxicity:

No test data found for product.

Acute Oral Toxicity:**Toxicological Information and Interpretation:**

LD50 - lethal dose 50% of test species, 1530 mg/kg, rat.

Chronic Toxicity:

This product does not contain any substances that are considered by OSHA, NTP, IARC or ACGIH to be "probable" or "suspected" human carcinogens.

No additional test data found for product.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:**Ecotoxicological Information and Interpretation:**

LC50 - lethal concentration 50% of test species, 138 mg/l/96 hr, fish: Mosquitofish. Practically nontoxic.

Chemical Fate Information:

No specific biodegradation test data located. While acidity of this material is readily reduced in natural waters, the resulting phosphate may persist indefinitely or incorporate into biological systems.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material. Please contact technical service support at the phone number in section one of this MSDS to obtain suggestions for proper disposal of this product.

EPA Hazardous Waste - YES

EPA RCRA HAZARDOUS WASTE CODES:

"C" Corrosive.

14. TRANSPORTATION INFORMATION

Transportation Status: IMPORTANT! Statements below provide additional data on listed DOT classification.

The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

US Department of Transportation

Hazard Class..... 8

Shipping Name:

PHOSPHORIC ACID SOLUTION

ID Number..... UN1805

Packing Group.... III

Labels..... CORROSIVE

Emergency Guide #.... 154

15. REGULATORY INFORMATION**Inventory Status**

Inventory	Status
UNITED STATES (TSCA)	Y
CANADA (DSL)	Y
EUROPE (EINECS/ELINCS)	Y
AUSTRALIA (AICS)	Y
JAPAN (MITI)	Y
SOUTH KOREA (KECL)	Y

Y = All ingredients are on the inventory.

E = All ingredients are on the inventory or exempt from listing.

P = One or more ingredients fall under the polymer exemption or are on the no longer polymer list. All other ingredients are on the inventory or exempt from listing.

N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing.

FEDERAL REGULATIONS**Inventory Issues:**

All functional components of this product are listed on the TSCA Inventory.

SARA Title III Hazard Classes:

Fire Hazard	- NO
Reactive Hazard	- NO
Release of Pressure	- NO
Acute Health Hazard	- YES
Chronic Health Hazard	- NO

SARA Extremely Hazardous Substances (EHS)/CERCLA Hazardous Substances

Ingredient	CERCLA/SARA RQ	SARA EHS TPQ
PHOSPHORIC ACID	5000 lbs	

OTHER FEDERAL REGULATIONS:**FDA Status:**

This product meets the compositional requirements of:
21 CFR 182.1073 PHOSPHORIC ACID

STATE REGULATIONS:

This product does not contain any components that are regulated under California Proposition 65.

16. OTHER INFORMATION**National Fire Protection Association Hazard Ratings--NFPA(R):**

- 3 Health Hazard Rating--Serious
- 0 Flammability Rating--Minimal
- 0 Instability Rating--Minimal

National Paint & Coating Hazardous Materials Identification System--HMIS(R):

- 3 Health Hazard Rating--Serious
- 0 Flammability Rating--Minimal
- 0 Reactivity Rating--Minimal

Reason for Revisions:

Change and/or addition made to Section 14.

Key Legend Information:

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

TLV - Threshold Limit Value

PEL - Permissible Exposure Limit

TWA - Time Weighted Average

STEL - Short Term Exposure Limit

NTP - National Toxicology Program

IARC - International Agency for Research on Cancer

ND - Not determined

RPI - INNOPHOS Established Exposure Limits

Disclaimer:

The information herein is given in good faith but no warranty, expressed or implied, is made.

**** End of MSDS Document ****



Safety Data Sheet
Quicklime

Revision date:
May 1, 2015

1. Identification

Product Name: Quicklime

Synonyms: Lime, Steel Grade-Large, Steel Grade-Large Rescreened, Steel Grade-Small, Steel Grade-Small Rescreened, Water Grade-Small, Water Grade-Small Rescreened, Mini Pebble, Rice, PCC Grade-Large Rescreened, PCC Grade-Small Rescreened, Hi Cal Fines, Pulverized Lime, Pulverized Lime with Flowaid, Thiosorbic Lime

Recommended Uses: Water treatment, steel flux, caustic agent, pH adjustment, acid gas absorption, construction

Manufacturer: Carmeuse Lime & Stone

<u>US Office</u> 11 Stanwix Street, 21 st Floor Pittsburgh, PA 15222 Phone: (412) 995-5500 Fax: (412) 995-5594	<u>Canadian Office</u> PO Box 190 Ingersoll, ON N5C 3K5 Phone: (519) 423-6283 Fax: (519) 423-6545
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Emergency Contact: Infotrac: (800) 535-5053 (24 hrs a day, 7 days a week)

2. Hazards Identification

GHS classification	Physical Hazards None	
	Health Hazards	
	Skin Irritation	Category 2
	Eye Damage	Category 1
	Carcinogenicity	Category 1A
	Specific Target Organ Toxicity – Single Exposure	Category 3
	Specific Target Organ Toxicity – Repeated Exposure	Category 1
GHS Label Elements:	Signal Word: Danger	
	Hazard Statements:	
	Causes skin irritation.	
	Causes serious eye damage.	
	May cause respiratory irritation.	
	May cause cancer through inhalation	
	Causes damage to lungs through prolonged or repeated exposure by inhalation.	
	Reacts violently with water, releasing heat which can ignite combustible materials.	

Precautionary Statements: Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Keep container tightly closed
 Do not breathe dust.
 Wash thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Use only outdoors or in well-ventilated area
 Wear protective gloves, clothing and eye protection
 Do not use water on material spills.

Pictograms:



3. Composition

<u>Chemical name</u>	<u>% by weight</u>	<u>CAS#</u>
Calcium oxide	> 89	1305-788
Magnesium oxide	< 4	1309-48-4
Silica-crystalline quartz	0.1 - 2	14808-60-7

4. First Aid Measures

Eyes:	Immediately flush eyes with generous amounts of water for at least 15 minutes. Pull back the eyelid to ensure that all lime dust has been washed out. Seek medical attention immediately. Do not rub eyes.
Skin:	Wash exposed area with large amounts of water. Seek medical attention immediately.
Ingestion:	Do not induce vomiting. Seek medical attention immediately. Never give anything by mouth unless instructed to do so by medical personnel.
Inhalation:	Move victim to fresh air. Seek medical attention if necessary. If breathing has stopped, give artificial respiration
Most Important Symptoms:	Irritation of skin, eyes, gastrointestinal tract or respiratory tract.
Immediate medical attention / special treatment?	See first aid information above. Note to Physicians: Provide general supportive measures and treat symptomatically.

5. Fire Fighting Measures

Suitable (and unsuitable) fire extinguishing media:	Use dry chemical fire extinguisher. Do not use water or halogenated compounds, except that large amounts of water may be used to deluge small quantities of this product.
Specific hazards arising from the product	Inhalation, skin or eye contact, can result in serious injury. This product is not combustible or flammable. However, this product reacts violently with water, and can release heat sufficient to ignite combustible materials. This product is not considered to be an explosion hazard, although reaction with water or other incompatible materials may rupture containers. When this product is wet, it can be very slippery and can result in a slip hazard. Hazardous Combustion Products: None.
Special protective equipment and precautions for fire fighters	Wear full fire-fighting turn-out gear (full Bunker gear), and respiratory protection (SCBA) to prevent inhalation, skin or eye contact.

6. Accidental Release Measures

Personal precautions, protective equipment, emergency procedures:

Avoid inhalation, eye and skin contact. Avoid generating airborne dust. Wear appropriate protective clothing as described in section 8.

Methods and materials for containment and clean up:

Utilize cleanup methods that minimize generating dust: vacuum. Avoid dry sweeping. Do not use water on large spills, as this product reacts violently with water and releases heat. Residue on surfaces may be removed with copious amount of water or vinegar.

7. Handling & Storage

Safe Handling:	Avoid inhalation, skin and eye contact. Avoid generating airborne dust. An eye wash station should be readily available when this product is handled.
Safe Storage:	Keep in tightly closed containers. Protect containers from physical damage. Store in a cool, dry, and well-ventilated location. Do not store near incompatible materials (see Section 10 below). Keep away from moisture. Long-term storage in aluminum containers is not recommended, as calcium oxide may corrode aluminum over long periods of time

8. Exposure Controls/Personal Protection

Occupational Exposure Limits

	OSHA PEL (mg/m ³)	ACGIH TLV (mg/m ³)	Ont. Reg. 833 TWAEV (mg/m ³)
Calcium oxide	5	2	2
Magnesium oxide	15	10	10
silica - crystalline quartz	30 / (% silica +2) (total) 10 / (% silica +2) (respirable)	0.025 (respirable)	0.1

Engineering Controls: Use with adequate general or local exhaust ventilation and to maintain exposure below occupational exposure limits.

Individual Protection Measures (Personal Protective Equipment):

Specific Eye / Face Protection: Safety glasses with side shields. In windy conditions, or if work activity generates elevated airborne dust levels, dust proof or chemical goggles are recommended. Contact lenses should not be worn.

Specific Skin Protection: When there is a risk of skin contact, wear appropriate clothing and gloves to prevent contact.

Specific Respiratory Protection: If exposure limits are exceeded, an approved particulate respirator, or supplied air respirator, appropriate for the airborne concentrations, should be used. Selection and use of the respiratory protective equipment must be in accordance with applicable regulations and good industrial hygiene practices.

Other: An emergency eye wash fountain and shower are recommended.

9. Physical & Chemical Properties

Appearance:	White or grayish white material
Odor:	Odorless
Odor threshold:	Not Applicable
pH at 25 degrees C:	12.45
Melting Point:	4658 °F (2570 °C)
Boiling Point and range:	5162 °F (2850 °C)
Flash Point:	Not Applicable
Evaporation Rate:	Not Applicable
Flammability:	Not Applicable
Upper/lower flammability or explosive limits	Not Applicable
Vapor pressure/density:	Non Volatile

Relative density:	3.2 – 3.4
Solubility:	Negligible in water but reacts with water to produce Ca(OH)_2 and heat. Soluble in acids, glycerin, and sugar solutions
Partition coefficient: n-octanol/water	Not applicable
Auto-ignition temperature:	Not Available
Decomposition temperature:	Not available
Viscosity:	Not Applicable

10. Stability & Reactivity

Reactivity:	Reacts violently with water to form calcium hydroxide, releasing heat. Reacts with acids to form calcium salts, releasing heat. Reacts with carbon dioxide in air to form calcium carbonate. See also Incompatibility below.
Chemical stability:	Stable under normal storage and handling conditions.
Possibility of Hazardous Reactions:	See “reactivity” above.
Conditions to avoid:	Vicinity of incompatible materials.
Incompatibility:	This product should not be mixed or stored with the following materials, due to the potential for violent reaction and release of heat: <ul style="list-style-type: none">• water (unless in a controlled process)• acids• reactive fluoridated compounds• reactive brominated compounds• reactive powdered metals• reactive phosphorous compounds• aluminum powder• organic acid anhydrides• nitro-organic compounds• interhalogenated compounds
Hazardous decomposition products:	None

11. Toxicological Information

Likely routes of exposure & symptoms:

Eyes: Contact can cause severe irritation or burning of eyes, including permanent damage.

Skin: Contact can cause severe irritation or burning of skin, especially in the presence of moisture.

Ingestion: This product can cause severe irritation or burning of gastrointestinal tract if swallowed.

Inhalation: This product can cause severe irritation of the respiratory system.

Chronic health effects: This product contains trace amounts of crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica can cause silicosis, as serious lung disease.

Respiratory or skin sensitization: This material is not known to cause sensitization

Germ cell mutagenicity: No data available.

Carcinogenicity: This product is not listed as carcinogenic by OSHA, IARC, NTP, ACGIH, or the EU Directives. This product may contain trace amounts of crystalline silica quartz which is listed by IARC as "Carcinogenic to Humans" (Group 1) and "Known to be a Human Carcinogen" by NTP (National Toxicology Program).

Reproductive toxicity: No Data Available.

Numerical Measures of Toxicity Crystalline Silica: Oral (rat) LD₅₀ > 22,500 mg/kg
Calcium oxide: Oral (rat) LD₅₀: 3059 mg/kg

12. Ecological Information

Because of the elevated pH of this product, it might be expected to produce some ecotoxicity upon exposure to certain aquatic organisms and aquatic systems in high concentrations
This material shows no bioaccumulation effect or food chain concentration toxicity.

13. Disposal Considerations

Dispose of contents in accordance with federal, state, provincial and local regulations.

14. Transport Information

UN Number UN1910

UN Proper shipping name Calcium Oxide

Transport Hazard class(es) When transported by air only: Hazard Class 8-Corrosive

Packing group When transported by air only: Packing Group III

Environmental hazards This material is alkaline and if released into water or moist soil will cause an increase in pH

Transport in bulk (according to Annex II of MARPOL 73/79 and the IBC

Code:

**Special precautions
 which a user needs to
 be aware of**

When being transported by air, quicklime is classified in the Department of Transportation (DOT) regulations as a hazardous material. (49 CFR 172.101). For aircraft transport only, Calcium Oxide is classified as Hazard Class 8-Corrosive, UN1910, Packing Group III. For passenger aircraft, the maximum net quantity allowed per container is 25 kg. For cargo aircraft, the maximum net quantity allowed per container is 100 kg. For quantities greater than 25 kg up to and including 100 kg, the container shall be labeled with CARGO AIRCRAFT ONLY. Because express carriers (i.e., Federal Express, Airborne Express, and United Parcel Service) ship by air, quicklime presented to these carriers for shipment must be packaged, marked, and labeled in accordance with IATA requirements, and must be accompanied by the appropriate shipping documentation. Only personnel trained and certified under applicable DOT Hazardous Materials Regulations (contained in Title 49 of the Code of Federal Regulations) may prepare any quicklime product for air transport. Quicklime is not classified as a hazardous material by DOT when transported by means other than by air.

15. Regulatory Information

CERCLA Hazardous Substances	Not listed
SARA Toxic Chemical (40 CFR 372.65)	Not listed
SARA Section 302 Extremely Hazardous Substances (40 CFR 355)	Not listed
SARA 311/312	Not listed
SARA Section 313 Toxic Chemicals reporting requirements	None
Threshold planning quantity (TPQ)	Not listed
RCRA Hazardous Waste Classification (40 CFR 261)	Not Classified
EPA Toxic Substances Control Act (TSCA) Status	All of the components of this product are listed on the TSCA
California Proposition 65	Airborne crystalline silica particulates of respirable size are known to the State of California to cause cancer.
NFPA ratings	Health: 3 Fire: 0 Reactivity: 2 W
HMIS Ratings	Health: 3 Fire: 0 Reactivity: 2 Personal protection: E
OSHA Specifically regulated substance (29 CFR 1910)	Not listed
OSHA Air contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A)	Listed
MSHA	Not listed
Canada DSL	Listed
Canadian WHMIS Classification	D2A, Materials Causing other toxic effects. E, Corrosive Material





Safety Data Sheet
Quicklime

Revision date:
May 1, 2015

Canada CPR This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation of a Canada and this SDS contains all the required information.

Ontario Regulations Refer to Regulation 845: Designated Substances - Silica

16. Other Information

List of GHS H315: Causes skin irritation
Hazard H318: Causes serious eye damage
Statements: H335: May cause respiratory irritation.
H350: May cause cancer through inhalation
H372: Causes damage to lungs through prolonged or repeated exposure by inhalation.

List of GHS P201: Obtain special instructions before use.
Precautionary P202: Do not handle until all safety precautions have been read and understood.
Statements: P233: Keep container tightly closed
P260: Do not breathe dust.
P264: Wash thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in well-ventilated area
P280: Wear protective gloves, clothing and eye protection

Abbreviations

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act	IARC	International Agency for Research on Cancer
NTP	National Toxicology Program		

The information contained herein is believed to be accurate and reliable as of the date hereof. However, Carmeuse makes no representation, warranty or guarantee as to results or as to the information's accuracy, reliability or completeness. Carmeuse has no liability for any loss or damage that may result from use of the information. Each user is responsible to review this information, satisfy itself as to the information's suitability and completeness, and circulate the information to its employees, customers and other appropriate third parties.



SAFETY DATA SHEET

PRODUCT

CAT-FLOC 8103 PLUS

18110-00

EMERGENCY TELEPHONE NUMBER(S)
(800) 424-9300 (24 Hours) CHEMTREC

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : **CAT-FLOC 8103 PLUS**

5/3/12

APPLICATION : WATER TREATMENT

COMPANY IDENTIFICATION :
Nalco Company
1601 W. Diehl Road
Naperville, Illinois
60563-1198

EMERGENCY TELEPHONE NUMBER(S) : (800) 424-9300 (24 Hours) CHEMTREC

NFPA 704M/HMIS RATING

HEALTH : 0/1 FLAMMABILITY : 1/1 INSTABILITY : 0/0 OTHER :
0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme * = Chronic Health Hazard

2. COMPOSITION/INFORMATION ON INGREDIENTS

Our hazard evaluation has found that this product is not hazardous under 29 CFR 1910.1200.

3. HAZARDS IDENTIFICATION

****EMERGENCY OVERVIEW****

CAUTION

May cause irritation with prolonged contact.
Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water.
Wear suitable protective clothing.
May evolve oxides of carbon (COx) under fire conditions. May evolve oxides of nitrogen (NOx) under fire conditions.
May evolve ammonia under fire conditions. May evolve HCl under fire conditions.

PRIMARY ROUTES OF EXPOSURE :
Eye, Skin

HUMAN HEALTH HAZARDS - ACUTE :

EYE CONTACT :
May cause irritation with prolonged contact.

SKIN CONTACT :
May cause irritation with prolonged contact.

INGESTION :
Not a likely route of exposure. No adverse effects expected.



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INHALATION :

Not a likely route of exposure. No adverse effects expected.

SYMPTOMS OF EXPOSURE :

Acute :

A review of available data does not identify any symptoms from exposure not previously mentioned.

Chronic :

A review of available data does not identify any symptoms from exposure not previously mentioned.

AGGRAVATION OF EXISTING CONDITIONS :

A review of available data does not identify any worsening of existing conditions.

4. FIRST AID MEASURES

EYE CONTACT :

Flush affected area with water. If symptoms develop, seek medical advice.

SKIN CONTACT :

Remove contaminated clothing. Wash off affected area immediately with plenty of water. If symptoms develop, seek medical advice.

INGESTION :

Do not induce vomiting without medical advice. If conscious, washout mouth and give water to drink. If symptoms develop, seek medical advice.

INHALATION :

Remove to fresh air, treat symptomatically. If symptoms develop, seek medical advice.

NOTE TO PHYSICIAN :

Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

5. FIRE FIGHTING MEASURES

FLASH POINT : Not flammable

EXTINGUISHING MEDIA :

This product would not be expected to burn unless all the water is boiled away. The remaining organics may be ignitable. Use extinguishing media appropriate for surrounding fire. Water mist may be used to cool closed containers.

FIRE AND EXPLOSION HAZARD :

May evolve oxides of carbon (CO_x) under fire conditions. May evolve oxides of nitrogen (NO_x) under fire conditions. May evolve ammonia under fire conditions. May evolve HCl under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING :

In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.



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6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS :

Notify appropriate government, occupational health and safety and environmental authorities. Do not touch spilled material. Stop or reduce any leaks if it is safe to do so. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection).

METHODS FOR CLEANING UP :

SMALL SPILLS: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area. **LARGE SPILLS:** Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS :

This product is toxic to fish. It should not be directly discharged into lakes, ponds, streams, waterways or public water supplies.

7. HANDLING AND STORAGE

HANDLING :

Do not take internally. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Ensure all containers are labeled. Avoid eye and skin contact.

STORAGE CONDITIONS :

Store separately from oxidizers. Store the containers tightly closed. Protect product from freezing.

SUITABLE CONSTRUCTION MATERIAL :

HDPE (high density polyethylene), Neoprene, Brass, Buna-N, Polyurethane, PVC, Polypropylene, Polyethylene, Stainless Steel 304, EPDM, Epoxy phenolic resin, 100% phenolic resin liner, Chlorosulfonated polyethylene rubber, Fluoroelastomer

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS :

This product does not contain any substance that has an established exposure limit.

ENGINEERING MEASURES :

General ventilation is recommended.

RESPIRATORY PROTECTION :

Respiratory protection is not normally needed.



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HAND PROTECTION :

When handling this product, the use of chemical gloves is recommended. The choice of work glove depends on work conditions and what chemicals are handled. Please contact the PPE manufacturer for advice on what type of glove material may be suitable. Gloves should be replaced immediately if signs of degradation are observed.

SKIN PROTECTION :

Wear standard protective clothing.

EYE PROTECTION :

Wear chemical splash goggles.

HYGIENE RECOMMENDATIONS :

Keep an eye wash fountain available. Keep a safety shower available.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Viscous liquid
APPEARANCE	Clear Yellow
ODOR	None
SPECIFIC GRAVITY	1.018 - 1.058 @ 77 °F / 25 °C
DENSITY	8.5 - 8.81 lb/gal
SOLUBILITY IN WATER	Complete
pH (100 %)	5.0 - 8.0
VISCOSITY	< 1,050 cps @ 77 °F / 25 °C
FREEZING POINT	14 °F / -9.9 °C
BOILING POINT	> 212 °F / > 100 °C
VAPOR PRESSURE	Same as water
VAPOR DENSITY	Same as water
VOC CONTENT	0.00 % EPA Method 24

Note: These physical properties are typical values for this product and are subject to change.

10. STABILITY AND REACTIVITY

STABILITY :

Stable under normal conditions.

HAZARDOUS POLYMERIZATION :

Hazardous polymerization will not occur.

CONDITIONS TO AVOID :

Avoid extremes of temperature.



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MATERIALS TO AVOID :

Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.

HAZARDOUS DECOMPOSITION PRODUCTS :

Under fire conditions: Oxides of carbon, Oxides of nitrogen, May evolve ammonia under fire conditions., HCl

11. TOXICOLOGICAL INFORMATION

The following results are for the polymer.

ACUTE ORAL TOXICITY :

Species: Rat
LD50: 25,500 mg/kg
Test Descriptor: Similar Product

ACUTE DERMAL TOXICITY :

Species: Rabbit
LD50: > 20,000 mg/kg
Test Descriptor: 40% Active Ingredient

PRIMARY SKIN IRRITATION :

Species: Rabbit
Draize Score: 1.0 / 8.0
Test Descriptor: Similar Product

PRIMARY EYE IRRITATION :

Species: Rabbit
Draize Score: 8.0 / 110.0
Test Descriptor: Similar Product

SENSITIZATION :

This product is not expected to be a sensitizer.

CARCINOGENICITY :

None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).

HUMAN HAZARD CHARACTERIZATION :

Based on our hazard characterization, the potential human hazard is: Low



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12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL EFFECTS :

The tests for (products or similar products) were performed in clean water as set forth by USEPA (EPA/600/4-90/027). In order to evaluate the potential toxicity mitigation, the tests for (representative polymers) were performed in environmentally relevant water with dissolved organic carbon (DOC: 4.5 mg/l). The toxicity of this product is due to an external mode of action, e.g., suffocation or immobilization. In the presence of suspended material, e.g., DOC, the polymers are bound to suspended material and the bioavailability is substantially reduced. As a result, the toxicity is expected to be lower. Under normal use and discharge conditions, the LC50 values of the representative polymers tested in the presence of DOC are expected to apply to this product. However, for large spills, the clean water data is more applicable.

Acute Fish Results :

Species	Exposure	Test Type	Value	Test Descriptor
Rainbow Trout	96 hrs	LC50	0.85 mg/l	Similar product tested in clean water
Inland Silverside	96 hrs	LC50	> 5,000 mg/l	Product tested in synthetic sea water
Zebra Danio	96 hrs	LC50	10 - 100 mg/l	Representative polymer tested in water with DOC
Fathead Minnow	96 hrs	LC50	3.29 mg/l	Product tested in clean water

ACUTE INVERTEBRATE RESULTS :

Species	Exposure	Test Type	Value	Test Descriptor
Daphnia magna	48 hrs	LC50	2.06 mg/l	Similar product tested in clean water
Ceriodaphnia dubia	48 hrs	LC50	2.5 mg/l	Product tested in clean water
Daphnia magna	48 hrs	LC50	10 - 100 mg/l	Representative polymer tested in water with DOC

Chronic Invertebrate Results :

Species	Exposure	Test Type	Value	End Point	Test Descriptor
Ceriodaphnia dubia	7 Days	LOEC	2.5 mg/l	Reproduction	Product
Ceriodaphnia dubia	7 Days	EC50	1.33 mg/l	Reproduction	Product
Ceriodaphnia dubia	7 Days	EC25 / IC25	0.96 mg/l	Reproduction	Product
Ceriodaphnia dubia	7 Days	NOEC	1.25 mg/l	Reproduction	Product

ADDITIONAL ECOLOGICAL DATA

NOEC on earthworm: > 1000 mg/l (representative polymer) AOX information: Product contains no organic halogens.

MOBILITY :

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.



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If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	Water	Soil/Sediment
<5%	30 - 50%	50 - 70%

The portion in water is expected to be soluble or dispersible.

BIOACCUMULATION POTENTIAL

This preparation or material is not expected to bioaccumulate.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION

Based on our hazard characterization, the potential environmental hazard is: High

OTHER INFORMATION

The hazard characterization is based on the tests or potential hazard in the clean water.

If released into the environment, see CERCLA/SUPERFUND in Section 15.

13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it is not a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

As a non-hazardous waste, it is not subject to federal regulation. Consult state or local regulation for any additional handling, treatment or disposal requirements. For disposal, contact a properly licensed waste treatment, storage, disposal or recycling facility.

14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are as follows.

LAND TRANSPORT :

Proper Shipping Name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

AIR TRANSPORT (ICAO/IATA) :

Proper Shipping Name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

MARINE TRANSPORT (IMDG/IMO) :

Proper Shipping Name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION



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15. REGULATORY INFORMATION

This section contains additional information that may have relevance to regulatory compliance. The information in this section is for reference only. It is not exhaustive, and should not be relied upon to take the place of an individualized compliance or hazard assessment. Nalco accepts no liability for the use of this information.

NATIONAL REGULATIONS, USA :

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200 :

Our hazard evaluation has found that this product is not hazardous under 29 CFR 1910.1200.

CERCLA/SUPERFUND, 40 CFR 302 :

Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (TITLE III) - SECTIONS 302, 311, 312, AND 313 :

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355) :

This product does not contain substances listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 AND 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370) :

Our hazard evaluation has found that this product is not hazardous under 29 CFR 1910.1200.

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372) :

This product does not contain substances on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA) :

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

FOOD AND DRUG ADMINISTRATION (FDA) Federal Food, Drug and Cosmetic Act :

When use situations necessitate compliance with FDA regulations, this product is acceptable under : 21 CFR 176.170 Components of paper and paperboard in contact with aqueous and fatty foods and 21 CFR 176.180 Components of paper and paperboard in contact with dry foods.

1) As a flocculant employed prior to the sheet-forming operation in the manufacture of paper and paperboard and used at a level not to exceed 10 mg/L (10 ppm) of influent water. 2) As a pigment dispersant and/or retention aid prior to the sheet-forming operation at an active polymer level not to exceed 0.5% of finished paper and paperboard with the level of residual monomer not to exceed 1 weight percent of the polymer (dry basis). 3) As a pigment dispersant in coatings at an active polymer level not to exceed 0.18% of finished paper and paperboard.

This product has been certified as KOSHER/PAREVE for year-round use INCLUDING THE PASSOVER SEASON by the CHICAGO RABBINICAL COUNCIL.



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NSF INTERNATIONAL :

This product has received NSF/International certification under NSF/ANSI Standard 60 in the coagulation and flocculation category. The official name is "Poly (Diallyldimethylammonium Chloride) (pDADMAC)." Maximum product application dosage is : 57 mg/l.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 / formerly Sec. 307, 40 CFR 116.4 / formerly Sec. 311 :

Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

CLEAN AIR ACT, Sec. 112 (Hazardous Air Pollutants, as amended by 40 CFR 63), Sec. 602 (40 CFR 82, Class I and II Ozone Depleting Substances) :

Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

CALIFORNIA PROPOSITION 65 :

Substances listed under California Proposition 65 are not intentionally added or expected to be present in this product.

MICHIGAN CRITICAL MATERIALS :

Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

STATE RIGHT TO KNOW LAWS :

Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

INTERNATIONAL CHEMICAL CONTROL LAWS :

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) :

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

AUSTRALIA

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

CHINA

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

EUROPE

The substance(s) in this preparation are included in or exempted from the EINECS or ELINCS inventories



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JAPAN

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

KOREA

All substances in this product comply with the Toxic Chemical Control Law (TCCL) and are listed on the Existing Chemicals List (ECL)

NEW ZEALAND

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

PHILIPPINES

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

16. OTHER INFORMATION

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

REFERENCES

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, OH., (Ariel Insight™ CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Title 29 Code of Federal Regulations, Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA), (Ariel Insight™ CD-ROM Version), Ariel Research Corp., Bethesda, MD.



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Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, OH, (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

Ariel Insight™ (An integrated guide to industrial chemicals covered under major regulatory and advisory programs), North American Module, Western European Module, Chemical Inventories Module and the Generics Module (Ariel Insight™ CD-ROM Version), Ariel Research Corp., Bethesda, MD.

The Teratogen Information System, University of Washington, Seattle, WA (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

Prepared By : Product Safety Department

Date issued : 05/03/2012

Version Number : 4.11

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : NALCO® EC3461A

Other means of identification : Not applicable.

Recommended use : PROCESS ANTIFOULANT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630) 305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 02/03/2020

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) : Category 4
Acute toxicity (Dermal) : Category 4
Skin corrosion : Category 1B
Serious eye damage : Category 1
Respiratory sensitization : Category 1
Skin sensitization : Category 1

GHS Label element

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : Harmful if swallowed or in contact with skin
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary Statements : **Prevention:**
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wear protective gloves/ protective clothing/ eye protection/ face protection. In case of inadequate ventilation wear respiratory protection.
Response:
IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove

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NALCO® EC3461A

person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/ physician.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Ethylenediamine	107-15-3	30 - 60

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

If swallowed : Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention.

Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.

Notes to physician : Treat symptomatically.

Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : None known.

Specific hazards during firefighting : Not flammable or combustible.

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Special protective equipment for firefighters : Use personal protective equipment.

Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Do not allow contact with soil, surface or ground water.

Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Flush away traces with water.

Section: 7. HANDLING AND STORAGE

Advice on safe handling : Do not ingest. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.

Conditions for safe storage : Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.

Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Mild steel, Stainless Steel 304, Stainless Steel 316L, Copper, Hastelloy C-276, HDPE (high density polyethylene), Polyethylene, Polypropylene, EPDM, PVC, Plexiglass, PTFE, Perfluoroelastomer

Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Natural rubber, Neoprene, Buna-N, Polyurethane, Aluminum, Brass, Ethylene propylene, Polytetrafluoroethylene/polypropylene copolymer, Chlorosulfonated polyethylene rubber, Fluoroelastomer

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Ethylenediamine	107-15-3	TWA	10 ppm	ACGIH
		TWA	10 ppm 25 mg/m ³	NIOSH REL
		TWA	10 ppm	OSHA Z1

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25 mg/m³

Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety goggles
Face-shield

Hand protection : Wear protective gloves.
butyl-rubber
Neoprene gloves
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

Respiratory protection : Use local exhaust ventilation or other engineering controls as necessary to control airborne mist and vapor.
Where concentrations in air may exceed the limits given in this section or when significant mists, vapors, aerosols are generated, an approved air purifying respirator equipped with suitable filter cartridges is recommended.
Combined particulates and ammonia/amines type
If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid
Colour : colourless
Odour : amine-like
Flash point : > 100 °C, Method: Tag closed cup, boils before flash
pH : 10.5, Concentration: 100.00 g/l
Odour Threshold : no data available
Melting point/freezing point : no data available
Initial boiling point and boiling range : no data available
Evaporation rate : no data available
Flammability (solid, gas) : Not applicable.

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Upper explosion limit	:	no data available
Lower explosion limit	:	no data available
Vapour pressure	:	similar to water
Relative vapour density	:	no data available
Relative density	:	0.98,
Density	:	no data available
Water solubility	:	completely soluble
Solubility in other solvents	:	no data available
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	no data available
Thermal decomposition	:	no data available
Viscosity, dynamic	:	no data available
Viscosity, kinematic	:	no data available
Molecular weight	:	no data available
VOC	:	no data available

Section: 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	Extremes of temperature None known.
Incompatible materials	:	Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors. Contact with strong acids (e.g. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) may generate heat, splattering or boiling and toxic vapors. Avoid contact with SO ₂ or acidic bisulfite products, which may react to form visible airborne amine salt particles.

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes : Causes serious eye damage.

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- Skin : Harmful in contact with skin. Causes severe skin burns. May cause allergic skin reaction.
- Ingestion : Harmful if swallowed. Causes digestive tract burns.
- Inhalation : May cause allergic respiratory reaction. May cause nose, throat, and lung irritation.
- Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

- Eye contact : Redness, Pain, Corrosion
- Skin contact : Redness, Pain, Irritation, Corrosion, Allergic reactions
- Ingestion : Corrosion, Abdominal pain
- Inhalation : Respiratory irritation, Cough, May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Toxicity

Product

- Acute oral toxicity : Acute toxicity estimate: 1,732 mg/kg
- Acute inhalation toxicity : Acute toxicity estimate: 29.4 mg/l
Exposure time: 4 h
Test atmosphere: vapour
- Acute dermal toxicity : Acute toxicity estimate: 1,120 mg/kg
- Skin corrosion/irritation : no data available
- Serious eye damage/eye irritation : no data available
- Respiratory or skin sensitization : no data available
- Carcinogenicity : no data available
- Reproductive effects : no data available
- Germ cell mutagenicity : no data available
- Teratogenicity : no data available
- STOT - single exposure : no data available
- STOT - repeated exposure : no data available
- Aspiration toxicity : no data available

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

- Environmental Effects : Harmful to aquatic life with long lasting effects.

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Components

Toxicity to fish : Ethylenediamine
LC50 *Poecilia reticulata* (guppy): 640 mg/l
Exposure time: 96 h

Components

Toxicity to daphnia and other : Ethylenediamine
aquatic invertebrates EC50 *Daphnia magna* (Water flea): 16.7 mg/l
Exposure time: 48 h

Components

Toxicity to algae : Ethylenediamine
EC50 *Pseudokirchneriella subcapitata* (microalgae): 358 mg/l
Exposure time: 72 h
NOEC *Selenastrum capricornutum* (green algae): 3.2 mg/l
Exposure time: 72 h

Components

Toxicity to bacteria : Ethylenediamine
3.2 mg/l

Components

Toxicity to fish (Chronic : Ethylenediamine
toxicity) NOEC: > 10 mg/l
Exposure time: 28 d
Species: *Gasterosteus aculeatus* (threespine stickleback)

Components

Toxicity to daphnia and other : Ethylenediamine
aquatic invertebrates NOEC: 0.16 mg/l
(Chronic toxicity) Exposure time: 21 d
Species: *Daphnia magna* (Water flea)

Persistence and degradability

no data available

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air : <5%
Water : 30 - 50%
Soil : 50 - 70%

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Bioaccumulative potential

no data available

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

Hazardous Waste: : D002

Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

The presence of an RQ component (Reportable Quantity for U.S. DOT) in this product causes it to be regulated with an additional description of RQ for road, or as Environmentally hazardous for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

Land transport (DOT)

Proper shipping name : AMINES, LIQUID, CORROSIVE, N.O.S.
Technical name(s) : ETHYLENEDIAMINE
UN/ID No. : UN 2735
Transport hazard class(es) : 8
Packing group : II
Reportable Quantity (per package) : 10,000 lbs
RQ Component : ETHYLENEDIAMINE

Air transport (IATA)

Proper shipping name : AMINES, LIQUID, CORROSIVE, N.O.S.
Technical name(s) : ETHYLENEDIAMINE
UN/ID No. : UN 2735
Transport hazard class(es) : 8
Packing group : II
Reportable Quantity (per package) : 10,000 lbs
RQ Component : ETHYLENEDIAMINE

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Sea transport (IMDG/IMO)

Proper shipping name : AMINES, LIQUID, CORROSIVE, N.O.S.
Technical name(s) : ETHYLENEDIAMINE
UN/ID No. : UN 2735
Transport hazard class(es) : 8
Packing group : II

Section: 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Ethylenediamine	107-15-3	5000	10000

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Ethylenediamine	107-15-3	5000	10000

SARA 311/312 Hazards : Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitisation

SARA 302 : The following components are subject to reporting levels established by SARA Title III, Section 302:

Ethylenediamine 107-15-3

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

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Australia. Industrial Chemical (Notification and Assessment) Act

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

Canadian Domestic Substances List (DSL)

The substances in this preparation are listed on the Domestic Substances List (DSL), are exempt, or have been reported in accordance with the New Substances Notification Regulations.

Japan. ENCS - Existing and New Chemical Substances Inventory

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

Korea. Korean Existing Chemicals Inventory (KECI)

All substances in this product comply with the Chemical Control Act (CCA) and are listed on the Existing Chemicals List (ECL)

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

not determined

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

China Inventory of Existing Chemical Substances

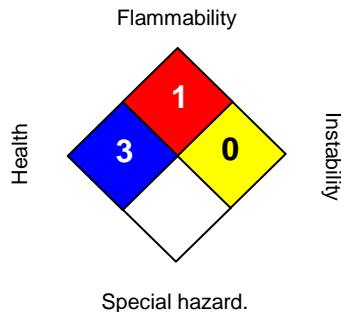
All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

Taiwan Chemical Substance Inventory

All substances in this product comply with the Taiwan Existing Chemical Substances Inventory (ECSI).

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	3*
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 02/03/2020
Version Number : 1.2
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.nalco.com and request access.

COMPTRENE™ EC3144B

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : COMPTRENE™ EC3144B

Other means of identification : Not applicable.

Recommended use : PROCESS ANTIFOULANT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630) 305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 11/18/2022

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3

Skin irritation : Category 2

Eye irritation : Category 2A

Skin sensitization : Category 1

Carcinogenicity : Category 2

Specific target organ toxicity - repeated exposure : Category 2 (hearing organs)

Specific target organ toxicity - repeated exposure (Oral) : Category 2 (Blood)

Aspiration hazard : Category 1

GHS Label element

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
Suspected of causing cancer.
May cause damage to organs (hearing organs) through prolonged or repeated exposure.
May cause damage to organs (Blood) through prolonged or repeated exposure

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if swallowed.

Precautionary Statements : **Prevention:**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not breathe dust/fume/gas/mist/vapours/spray. Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/ physician. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Storage:
Store in a well-ventilated place.
Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Heavy Aromatic Naphtha	64742-94-5	10 - 30
Diethylene Glycol Monobutyl Ether	112-34-5	5 - 10
Xylene	1330-20-7	5 - 10
Fatty acid-amine condensate	Proprietary	5 - 10
Naphthalene	91-20-3	1 - 5
Ethylbenzene	100-41-4	1 - 5
1,2,4-Trimethylbenzene	95-63-6	1 - 5
Substituted alkylamine	Proprietary	1 - 5

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

If swallowed : Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Aspiration hazard if swallowed - can enter lungs and cause damage. Get medical attention immediately.

If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.

Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.

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- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Foam
Carbon dioxide
Dry powder
Other extinguishing agent suitable for Class B fires
For large fires, use water spray or fog, thoroughly drenching the burning material.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.
Flash back possible over considerable distance.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
- Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides
nitrogen oxides (NOx)
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Use water spray to cool unopened containers. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Remove all sources of ignition. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Do not flush into surface water or sanitary sewer system.

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Avoid contact with skin and eyes. Take necessary action to avoid static

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electricity discharge (which might cause ignition of organic vapours). Keep away from fire, sparks and heated surfaces. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.

Conditions for safe storage : Keep away from heat and sources of ignition. Keep in a cool, well-ventilated place. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.

Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

Unsuitable material : not determined

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Heavy Aromatic Naphtha	64742-94-5	TWA	500 ppm 2,000 mg/m ³	OSHA Z-1
		TWA	200 mg/m ³ (total hydrocarbon vapor)	ACGIH
Diethylene Glycol Monobutyl Ether	112-34-5	TWA (Inhalable fraction and vapor)	10 ppm	ACGIH
Xylene	1330-20-7	TWA	100 ppm 435 mg/m ³	OSHA Z-1
		TWA	100 ppm	ACGIH
		STEL	150 ppm	ACGIH
		PEL	100 ppm 435 mg/m ³	
		C	300 ppm	
		STEL	150 ppm 655 mg/m ³	
		TWA	100 ppm 435 mg/m ³	OSHA P0
		STEL	150 ppm 655 mg/m ³	OSHA P0
Naphthalene	91-20-3	TWA	10 ppm	ACGIH
		TWA	10 ppm 50 mg/m ³	NIOSH REL
		ST	15 ppm 75 mg/m ³	NIOSH REL
		TWA	10 ppm 50 mg/m ³	OSHA Z-1
		STEL	15 ppm 75 mg/m ³	OSHA P0
		TWA	10 ppm 50 mg/m ³	OSHA P0
		PEL	0.1 ppm	

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			0.5 mg/m ³	
Ethylbenzene	100-41-4	TWA	20 ppm	ACGIH
		TWA	100 ppm 435 mg/m ³	NIOSH REL
		ST	125 ppm 545 mg/m ³	NIOSH REL
		TWA	100 ppm 435 mg/m ³	OSHA Z-1
		TWA	100 ppm 435 mg/m ³	OSHA P0
		STEL	125 ppm 545 mg/m ³	OSHA P0
		STEL	30 ppm 130 mg/m ³	
		PEL	5 ppm 22 mg/m ³	
1,2,4-Trimethylbenzene	95-63-6	TWA	25 ppm 125 mg/m ³	NIOSH REL
		TWA	25 ppm	ACGIH
		TWA	25 ppm 125 mg/m ³	OSHA P0
		PEL	25 ppm 125 mg/m ³	

Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Wear chemical splash goggles.

Safety goggles
Face-shield

Hand protection : Wear impervious chemical-resistant gloves when handling this product. The following glove types are recommended based on our review of glove manufacturer information and/or other available sources.
Nitrile rubber
Viton
Other glove types may be used for short term, incidental contact if determined by testing to provide adequate worker protection.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Wear suitable protective clothing.

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based

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on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Liquid
Colour	: dark amber
Odour	: hydrocarbon-like
Flash point	: 52 °C, Method: ASTM D 93, Pensky-Martens closed cup
pH	: Not applicable.
Odour Threshold	: no data available
Melting point/freezing point	: Freezing Point: -48 °C
Initial boiling point and boiling range	: no data available
Evaporation rate	: no data available
Flammability (solid, gas)	: Not applicable.
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: no data available
Relative vapour density	: no data available
Relative density	: 0.9318,
Density	: no data available
Water solubility	: insoluble
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition	: no data available
Viscosity, dynamic	: no data available
Viscosity, kinematic	: no data available
Molecular weight	: no data available
VOC	: no data available

Section: 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.

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Conditions to avoid	: Heat, flames and sparks.
Incompatible materials	: Strong oxidizing agents
Hazardous decomposition products	: In case of fire, hazardous decomposition products may be produced such as: Carbon oxides nitrogen oxides (NOx)

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact, Ingestion

Potential Health Effects

Eyes	: Causes serious eye irritation.
Skin	: Causes skin irritation. May cause allergic skin reaction.
Ingestion	: May be fatal if swallowed and enters airways.
Inhalation	: May cause respiratory tract irritation. May cause nose, throat, and lung irritation. Inhalation may cause central nervous system effects.
Chronic Exposure	: May cause damage to organs through prolonged or repeated exposure. Suspected of causing cancer.

Experience with human exposure

Eye contact	: Redness, Pain, Irritation
Skin contact	: Redness, Irritation, Allergic reactions
Ingestion	: Vomiting
Inhalation	: Respiratory irritation, Cough, Dizziness, Drowsiness

Toxicity

Product

Acute oral toxicity	: Acute toxicity estimate: > 5,000 mg/kg
Acute inhalation toxicity	: Acute toxicity estimate: 102.35 mg/l Exposure time: 4 h Test atmosphere: vapour
Acute dermal toxicity	: Acute toxicity estimate: > 5,000 mg/kg
Skin corrosion/irritation	: no data available
Serious eye damage/eye irritation	: no data available
Respiratory or skin sensitization	: no data available
Carcinogenicity	

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IARC	Group 2B: Possibly carcinogenic to humans Naphthalene 91-20-3 Ethylbenzene 100-41-4
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP	Reasonably anticipated to be a human carcinogen Naphthalene 91-20-3
Reproductive effects	: no data available
Germ cell mutagenicity	: no data available
Teratogenicity	: no data available
STOT - single exposure	: no data available
STOT - repeated exposure	: no data available
Aspiration toxicity	: no data available

Section: 12. ECOLOGICAL INFORMATION

Toxicity

Environmental Effects : Toxic to aquatic life with long lasting effects.

Components

Toxicity to fish : Heavy Aromatic Naphtha
LC50 Oncorhynchus mykiss (rainbow trout): 3.5 mg/l
Exposure time: 96 h

Diethylene Glycol Monobutyl Ether
LC50 Fish: 1,300 mg/l
Exposure time: 96 h

Xylene
LC50 Fish: 2.6 mg/l
Exposure time: 96 h
Test substance: Information given is based on data obtained from similar substances.

Fatty acid-amine condensate
LC50 Fish: 3.07 mg/l
Exposure time: 96 h
Test substance: Information given is based on data obtained from similar substances.

Ethylbenzene
LC50 Oncorhynchus mykiss (rainbow trout): 4.2 mg/l
Exposure time: 96 h

1,2,4-Trimethylbenzene
LC50 Pimephales promelas (fathead minnow): 7.72 mg/l
Exposure time: 96 h

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Substituted alkylamine
LC50 Danio rerio (zebra fish): 545 mg/l
Exposure time: 96 h

Components

Toxicity to daphnia and other aquatic invertebrates : Xylene
EC50 Aquatic Invertebrate: 1.8 mg/l
Exposure time: 48 h
Test substance: Information given is based on data obtained from similar substances.

Fatty acid-amine condensate
EC50 Aquatic Invertebrate: 0.21 mg/l
Exposure time: 48 h
Test substance: Information given is based on data obtained from similar substances.

Ethylbenzene
EC50 Daphnia magna (Water flea): 1.81 mg/l
Exposure time: 48 h

1,2,4-Trimethylbenzene
LC50 Daphnia magna (Water flea): 3.6 mg/l
Exposure time: 48 h

Substituted alkylamine
EC50 Daphnia magna (Water flea): 54 mg/l
Exposure time: 48 h

Components

Toxicity to algae : Xylene
EC50 Aquatic Plant: 4.73 mg/l
Exposure time: 72 h
Test substance: Information given is based on data obtained from similar substances.

Fatty acid-amine condensate
EC50 Aquatic Plant: 4.094 mg/l
Exposure time: 72 h
Test substance: Information given is based on data obtained from similar substances.

Ethylbenzene
EC50 Pseudokirchneriella subcapitata (algae): 3.6 mg/l
Exposure time: 96 h

Substituted alkylamine
EC50 Desmodesmus subspicatus (green algae): 1,038 mg/l
Exposure time: 72 h

Components

Toxicity to bacteria : Substituted alkylamine
890 mg/l

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Components

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Fatty acid-amine condensate
NOEC: 0.32 mg/l
Exposure time: 21 d
Species: Aquatic Invertebrate
Test substance: Information given is based on data obtained from similar substances.

Persistence and degradability

no data available

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air : <5%
Water : 10 - 30%
Soil : 70 - 90%

The portion in water is expected to float on the surface.

Bioaccumulative potential

no data available

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste. The information presented only applies to the material as supplied. The classification or waste code may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated at the time of disposal to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Disposal methods : Do not contaminate storm water drains, natural waterways or soil with chemical or used container. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of contents/container in accordance with local regulations. Dispose of wastes in an approved waste disposal facility.

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COMPTRENE™ EC3144B

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

The presence of an RQ component (Reportable Quantity for U.S. DOT) in this product causes it to be regulated with an additional description of RQ for road, or as Environmentally hazardous for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

Land transport (DOT)

Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : ETHYLBENZENE, XYLENE
UN/ID No. : UN 1993
Transport hazard class(es) : 3
Packing group : III
Reportable Quantity (per package) : 1,077 lbs
RQ Component : Xylene

Air transport (IATA)

Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : ETHYLBENZENE, XYLENE
UN/ID No. : UN 1993
Transport hazard class(es) : 3
Packing group : III
Reportable Quantity (per package) : 1,077 lbs
RQ Component : Xylene

Sea transport (IMDG/IMO)

Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : ETHYLBENZENE, XYLENE
UN/ID No. : UN 1993
Transport hazard class(es) : 3
Packing group : III

*Marine pollutant : HEAVY AROMATIC NAPHTHA

* Note: This product is regulated as a Marine Pollutant when shipped by Rail or Highway (in bulk quantities), and when shipped by water in all quantities.

Section: 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

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CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Xylene	1330-20-7	100	1077

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.


SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Respiratory or skin sensitisation
Carcinogenicity
Specific target organ toxicity (single or repeated exposure)
Aspiration hazard
Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Diethylene Glycol	112-34-5	5 - 10 %
Monobutyl Ether		
Xylene	1330-20-7	5 - 10 %
Naphthalene	91-20-3	1 - 5 %
Ethylbenzene	100-41-4	1 - 5 %
1,2,4-Trimethylbenzene	95-63-6	1 - 5 %

California Prop. 65

 **WARNING:** Cancer - www.P65Warnings.ca.gov

Naphthalene	91-20-3
Ethylbenzene	100-41-4

INTERNATIONAL CHEMICAL CONTROL LAWS :

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

United States TSCA Inventory

On or in compliance with the active portion of the TSCA inventory

China Inventory of Existing Chemical Substances

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

Australia. Australian Industrial Chemicals Introduction Scheme (AICIS)

On the inventory, or in compliance with the inventory.

Japan. ENCS - Existing and New Chemical Substances Inventory

On the inventory, or in compliance with the inventory.

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Korea. Korean Existing Chemicals Inventory (KECI)

On the inventory, or in compliance with the inventory.

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

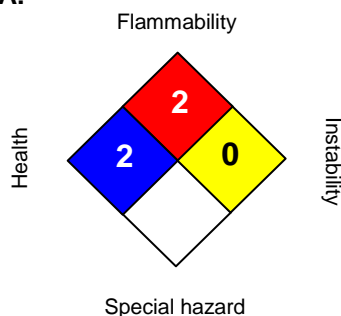
not determined

Taiwan Chemical Substance Inventory

not determined

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	2*
FLAMMABILITY	2
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 11/18/2022
Version Number : 2.0
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.ecolab.com/sds and request access.



SAFETY DATA SHEET

PRODUCT

14152-00

NALCO® EC1044A

952045

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : NALCO® EC1044A

APPLICATION : CORROSION INHIBITOR

COMPANY IDENTIFICATION :
Nalco Company
1601 W. Diehl Road
Naperville, Illinois
60563-1198

6/11/12

EMERGENCY TELEPHONE NUMBER(S) : (800) 424-9300 (24 Hours) CHEMTREC

NFPA 704M/HMIS RATING

HEALTH : 3 / 3 FLAMMABILITY : 2 / 2 INSTABILITY : 0 / 0 OTHER :
0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme * = Chronic Health Hazard

2. COMPOSITION/INFORMATION ON INGREDIENTS

Our hazard evaluation has identified the following chemical substance(s) as hazardous. Consult Section 15 for the nature of the hazard(s).

Hazardous Substance(s)	CAS NO	% (w/w)
Monoethanolamine	141-43-5	60.0 - 100.0

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER

Corrosive. May cause tissue damage. Combustible. Harmful by inhalation, in contact with skin and if swallowed. Vapors may have a strong offensive odor which may cause sensory response including headache, nausea and vomiting.

Keep away from heat. Keep away from sources of ignition - No smoking. Keep container tightly closed. Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. Avoid breathing vapor. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water. Use a mild soap if available.

Wear a face shield. Wear chemical resistant apron, chemical splash goggles, impervious gloves and boots. Combustible Liquid; may form combustible mixtures at or above the flash point. May evolve oxides of carbon (COx) under fire conditions. May evolve oxides of nitrogen (NOx) under fire conditions. Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, or expose containers to flame or other sources of ignition.

PRIMARY ROUTES OF EXPOSURE :

Eye, Skin, Inhalation



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HUMAN HEALTH HAZARDS - ACUTE :

EYE CONTACT :

Corrosive. Will cause eye burns and permanent tissue damage.

SKIN CONTACT :

Corrosive; causes permanent skin damage. Harmful if absorbed through skin.

INGESTION :

Corrosive; causes chemical burns to the mouth, throat and stomach. Harmful if swallowed.

INHALATION :

Elevated temperatures or mechanical action may form vapors, mists or fumes which may be irritating to the eyes, nose, throat and lungs. Harmful by inhalation. Vapors may have a strong offensive odor which may cause sensory response including headache, nausea and vomiting.

AGGRAVATION OF EXISTING CONDITIONS :

A review of available data does not identify any worsening of existing conditions.

HUMAN HEALTH HAZARDS - CHRONIC :

No adverse effects expected other than those mentioned above.

4. FIRST AID MEASURES

EYE CONTACT :

Immediately flush eye with water for at least 15 minutes while holding eyelids open. PROMPT ACTION IS ESSENTIAL IN CASE OF CONTACT. Get immediate medical attention.

SKIN CONTACT :

Immediately flush with plenty of water for at least 15 minutes. Use a mild soap if available. For a large splash, flood body under a shower. Get immediate medical attention. Contaminated clothing, shoes, and leather goods must be discarded or cleaned before re-use.

INGESTION :

Get immediate medical attention. DO NOT INDUCE VOMITING. If conscious, washout mouth and give water to drink.

INHALATION :

Remove to fresh air, treat symptomatically. Get immediate medical attention.

NOTE TO PHYSICIAN :

Probable mucosal damage may contraindicate the use of gastric lavage. Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

5. FIRE FIGHTING MEASURES

FLASH POINT : 195 °F / 91 °C

LOWER EXPLOSION LIMIT : 2.5 V%



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UPPER EXPLOSION LIMIT : 13.1 V%

EXTINGUISHING MEDIA :

Dry powder, Carbon dioxide, Foam, Other extinguishing agent suitable for Class B fires, For large fires, use water spray or fog, thoroughly drenching the burning material.

Keep containers cool by spraying with water.

FIRE AND EXPLOSION HAZARD :

Combustible Liquid; may form combustible mixtures at or above the flash point. May evolve oxides of carbon (CO_x) under fire conditions. May evolve oxides of nitrogen (NO_x) under fire conditions. Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, or expose containers to flame or other sources of ignition.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING :

In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS :

Restrict access to area as appropriate until clean-up operations are complete. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Stop or reduce any leaks if it is safe to do so. Keep people away from and upwind of spill/leak. Ventilate spill area if possible. Remove sources of ignition. Ensure clean-up is conducted by trained personnel only. Do not touch spilled material. Have emergency equipment (for fires, spills, leaks, etc.) readily available.

METHODS FOR CLEANING UP :

SMALL SPILLS: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area. **LARGE SPILLS:** Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Clean contaminated surfaces with water or aqueous cleaning agents. Clean up promptly by scoop or vacuum. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS :

Prevent material from entering sewers or waterways.

7. HANDLING AND STORAGE

HANDLING :

Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. Do not breathe vapors/gases/dust. Keep the containers closed when not in use. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Ensure all containers are labeled. Do not use, store, spill or pour near heat, sparks or open flame. Do not mix with acids.

STORAGE CONDITIONS :

Store in suitable labeled containers. Store the containers tightly closed. Store away from heat and sources of ignition. Have appropriate fire extinguishers available in and near the storage area. Connections must be grounded to avoid electrical charges. Store separately from oxidizers. Store separately from acids. Amine and sulphite products should not be stored within close proximity or resulting vapors may form visible airborne particles.



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SUITABLE CONSTRUCTION MATERIAL :

PVC, Hastelloy C-276, MDPE (medium density polyethylene), Perfluoroelastomer, EPDM, PTFE, HDPE (high density polyethylene), Mild steel, Polypropylene, Polyethylene, Stainless Steel 304, Stainless Steel 316L

UNSUITABLE CONSTRUCTION MATERIAL :

Copper, Aluminum, Ethylene propylene, Plexiglass, Polytetrafluoroethylene/polypropylene copolymer, Brass, Nylon, Buna-N, Natural rubber, Polyurethane, Chlorosulfonated polyethylene rubber, Fluoroelastomer, Neoprene

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS :

Exposure guidelines have not been established for this product. Available exposure limits for the substance(s) are shown below.

Substance(s)	Category:	ppm	mg/m3	Non-Standard Unit
Monoethanolamine	ACGIH/TWA	3		
	ACGIH/STEL	6		
	OSHA Z1/PEL	3	6	

ENGINEERING MEASURES :

General ventilation is recommended. Use local exhaust ventilation if necessary to control airborne mist and vapor.

RESPIRATORY PROTECTION :

Where concentrations in air may exceed the limits given in this section or when significant mists, vapors, aerosols, or dusts are generated, an approved air purifying respirator equipped with suitable filter cartridges is recommended. Consult the respirator / cartridge manufacturer data to verify the suitability of specific devices. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

HAND PROTECTION :

When handling this product, the use of chemical gloves is recommended. The choice of work glove depends on work conditions and what chemicals are handled. Please contact the PPE manufacturer for advice on what type of glove material may be suitable. Gloves should be replaced immediately if signs of degradation are observed.

SKIN PROTECTION :

Wear chemical resistant apron, chemical splash goggles, impervious gloves and boots. A full slicker suit is recommended if gross exposure is possible.

EYE PROTECTION :

Wear a face shield with chemical splash goggles.

HYGIENE RECOMMENDATIONS :

Use good work and personal hygiene practices to avoid exposure. Eye wash station and safety shower are necessary. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing



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before reuse. Always wash thoroughly after handling chemicals. When handling this product never eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Liquid
APPEARANCE	Colorless
ODOR	Amine
SPECIFIC GRAVITY	1 @ 77 °F / 25 °C
DENSITY	8.31 lb/gal
SOLUBILITY IN WATER	Complete
pH (2.5 %)	12.6
VISCOSITY	30 cps @ 74 °F / 23.3 °C
BOILING POINT	342 °F / 172.2 °C
VAPOR PRESSURE	1 mm Hg @ 68 °F / 20 °C
VAPOR DENSITY	2.1 (Air = 1)
VOC CONTENT	99.3 % EPA Method 24

Note: These physical properties are typical values for this product and are subject to change.

10. STABILITY AND REACTIVITY

STABILITY :

Stable under normal conditions.

HAZARDOUS POLYMERIZATION :

Hazardous polymerization will not occur.

CONDITIONS TO AVOID :

Heat and sources of ignition including static discharges.

MATERIALS TO AVOID :

Contact with strong acids (e.g. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) may generate heat, splattering or boiling and toxic vapors. Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors. Avoid contact with SO₂ or acidic bisulfite products, which may react to form visible airborne amine salt particles. Certain amines in contact with nitrous acid, organic or inorganic nitrites or atmospheres with high nitrous oxide concentrations may produce N-nitrosamines, many of which are cancer-causing agents to laboratory animals.

HAZARDOUS DECOMPOSITION PRODUCTS :

Under fire conditions: Oxides of carbon, Oxides of nitrogen

11. TOXICOLOGICAL INFORMATION

The following results are for the product.



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ACUTE ORAL TOXICITY :

Species: Rat
LD50: 1,510 mg/kg
Test Descriptor: Product

ACUTE DERMAL TOXICITY :

Species: Rabbit
LD50: 1,000 mg/kg
Test Descriptor: Product

PRIMARY SKIN IRRITATION :

Species: Rabbit
Draize Score: 8.0 /8.0
Test Descriptor: Product

PRIMARY EYE IRRITATION :

Species: Rabbit
Draize Score: 110.0 /110.0
Test Descriptor: Product

SENSITIZATION :

This product is not expected to be a sensitizer.

CARCINOGENICITY :

None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH). None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).

REPRODUCTIVE EFFECTS :

No reproductive toxic effects expected.

MUTAGENICITY :

Not expected to be a mutagen.

HUMAN HAZARD CHARACTERIZATION :

Based on our hazard characterization, the potential human hazard is: High High

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL EFFECTS :

The following results are for the product.



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Acute Fish Results :

Species	Exposure	Test Type	Value	Test Descriptor
Fathead Minnow	96 hrs	LC50	125 mg/l	Product

ACUTE INVERTEBRATE RESULTS :

Species	Exposure	Test Type	Value	Test Descriptor
Daphnia magna	48 hrs	LC50	33 mg/l	Product

MOBILITY :

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	Water	Soil/Sediment
<5%	30 - 50%	50 - 70%

The portion in water is expected to float on the surface.

BIOACCUMULATION POTENTIAL

This preparation or material is not expected to bioaccumulate.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION

Based on our hazard characterization, the potential environmental hazard is: Moderate Moderate

If released into the environment, see CERCLA/SUPERFUND in Section 15.

13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

Hazardous Waste: D002

Hazardous wastes must be transported by a licensed hazardous waste transporter and disposed of or treated in a properly licensed hazardous waste treatment, storage, disposal or recycling facility. Consult local, state, and federal regulations for specific requirements.

14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are as follows.



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LAND TRANSPORT :

Proper Shipping Name :	ETHANOLAMINE
Technical Name(s) :	Monoethanolamine
UN/ID No :	UN 2491
Hazard Class - Primary :	8
Packing Group :	III
Flash Point :	91 °C / 195 °F

AIR TRANSPORT (ICAO/IATA) :

Proper Shipping Name :	ETHANOLAMINE
Technical Name(s) :	Monoethanolamine
UN/ID No :	UN 2491
Hazard Class - Primary :	8
Packing Group :	III

MARINE TRANSPORT (IMDG/IMO) :

Proper Shipping Name :	ETHANOLAMINE
Technical Name(s) :	Monoethanolamine
UN/ID No :	UN 2491
Hazard Class - Primary :	8
Packing Group :	III

15. REGULATORY INFORMATION

This section contains additional information that may have relevance to regulatory compliance. The information in this section is for reference only. It is not exhaustive, and should not be relied upon to take the place of an individualized compliance or hazard assessment. Nalco accepts no liability for the use of this information.

NATIONAL REGULATIONS, USA :

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200 :

Based on our hazard evaluation, the following substance(s) in this product is/are hazardous and the reason(s) is/are shown below.

Monoethanolamine : Corrosive, Combustible., HARMFUL

CERCLA/SUPERFUND, 40 CFR 302 :

Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (TITLE III) - SECTIONS 302, 311, 312, AND 313 :

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355) :

This product does not contain substances listed in Appendix A and B as an Extremely Hazardous Substance.



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SECTIONS 311 AND 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370) :

Our hazard evaluation has found this product to be hazardous. The product should be reported under the following indicated EPA hazard categories:

- | | |
|---|-----------------------------------|
| X | Immediate (Acute) Health Hazard |
| - | Delayed (Chronic) Health Hazard |
| X | Fire Hazard |
| - | Sudden Release of Pressure Hazard |
| - | Reactive Hazard |

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372) :

This product does not contain substances on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA) :

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 / formerly Sec. 307, 40 CFR 116.4 / formerly Sec. 311 :

Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

CLEAN AIR ACT, Sec. 112 (Hazardous Air Pollutants, as amended by 40 CFR 63), Sec. 602 (40 CFR 82, Class I and II Ozone Depleting Substances) :

Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

CALIFORNIA PROPOSITION 65 :

Substances listed under California Proposition 65 are not intentionally added or expected to be present in this product.

MICHIGAN CRITICAL MATERIALS :

Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

STATE RIGHT TO KNOW LAWS :

The following substances are disclosed for compliance with State Right to Know Laws:

Monoethanolamine

141-43-5

INTERNATIONAL CHEMICAL CONTROL LAWS :



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CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) :

The substances in this preparation are listed on the Domestic Substances List (DSL), are exempt, or have been reported in accordance with the New Substances Notification Regulations.

AUSTRALIA

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

CHINA

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

EUROPE

The substances in this preparation have been reviewed for compliance with the EINECS or ELINCS inventories.

JAPAN

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

KOREA

All substances in this product comply with the Toxic Chemical Control Law (TCCL) and are listed on the Existing Chemicals List (ECL)

NEW ZEALAND

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

PHILIPPINES

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

16. OTHER INFORMATION

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

REFERENCES

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, OH., (Ariel Insight™ CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.



SAFETY DATA SHEET

PRODUCT

NALCO® EC1044A

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (TOMES CPS™ CD-ROM Version),
Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Title 29 Code of Federal Regulations, Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA), (Ariel Insight™ CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, OH,
(TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

Ariel Insight™ (An integrated guide to industrial chemicals covered under major regulatory and advisory programs), North American Module, Western European Module, Chemical Inventories Module and the Generics Module (Ariel Insight™ CD-ROM Version), Ariel Research Corp., Bethesda, MD.

The Teratogen Information System, University of Washington, Seattle, WA (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

Prepared By : Product Safety Department
Date issued : 06/11/2012
Version Number : 1.12

AQUAMAX™ EC3011A

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : AQUAMAX™ EC3011A

Other means of identification : Not applicable.

Recommended use : PROCESS ANTIFOULANT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630) 305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC


Issuing date : 01/07/2022

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Skin irritation : Category 2
Eye irritation : Category 2A

GHS Label element

Hazard pictograms : 

Signal Word : Warning

Hazard Statements : Causes skin irritation.
Causes serious eye irritation.

Precautionary Statements : **Prevention:**
Wash skin thoroughly after handling. Wear protective gloves/ eye protection/ face protection.
Response:
IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/ attention. Take off contaminated clothing and wash before reuse.
Storage:
Protect product from freezing.

Other hazards : None known.

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AQUAMAX™ EC3011A

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Diethylethanolamine	100-37-8	5 - 10

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Get medical attention if irritation develops and persists.

If swallowed : Rinse mouth. Get medical attention if symptoms occur.

If inhaled : Get medical attention if symptoms occur.

Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.

Notes to physician : Treat symptomatically.

Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : None known.

Specific hazards during firefighting : Not flammable or combustible.

Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx)

Special protective equipment for firefighters : Use personal protective equipment.

Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

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- Personal precautions, protective equipment and emergency procedures : Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Flush away traces with water.

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Avoid contact with skin and eyes. Wash hands thoroughly after handling. Use only with adequate ventilation. Protect product from freezing.
- Conditions for safe storage : Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
- Storage temperature : 0 °C to 65 °C
- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Stainless Steel 304, Stainless Steel 316L, Brass, CPVC (rigid), HDPE (high density polyethylene), LLDPE, Nylon 11, Plexiglass, Polypropylene, Teflon (PTFE), PVC, UHMWPE, EPDM, Kalrez, Perfluoroelastomer, Viton, Fluoroelastomer, Buna-N
- Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Mild steel, Neoprene

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Diethylethanolamine	100-37-8	TWA	2 ppm	ACGIH
		TWA	10 ppm 50 mg/m ³	NIOSH REL
		TWA	10 ppm 50 mg/m ³	OSHA Z1

- Engineering measures : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

- Eye protection : Safety glasses with side-shields
- Hand protection : Wear impervious chemical-resistant gloves when handling this product. The following glove types are recommended based on our review of glove manufacturer information and/or other available sources.

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Nitrile rubber
butyl-rubber
Viton

Other glove types may be used for short term, incidental contact if determined by testing to provide adequate worker protection.

Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

- Skin protection : Wear suitable protective clothing.
- Respiratory protection : Use local exhaust ventilation or other engineering controls as necessary to control airborne vapour and mist.
Where concentrations in air may exceed the limits given in this section or when significant vapours are generated, use an approved air purifying respirator fitted with a gas and vapour cartridge.
Use a particulate pre-filter where operations generate significant mists or aerosols.
Recommended gas and vapour cartridge:
Organic vapor cartridge.
In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA or supplied-air respirator should be used.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Liquid
- Colour : brown
- Odour : mild
- Flash point : does not flash
- pH : 8.8 - 9.2,(100 %), (25 °C), Method: ASTM E 70
- Odour Threshold : no data available
- Melting point/freezing point : -3 °C, ASTM D-1177
- Initial boiling point and boiling range : 100 °C
- Evaporation rate : 1.5, (BuAc = 1)
- Flammability (solid, gas) : Not applicable.
- Upper explosion limit : no data available
- Lower explosion limit : no data available
- Vapour pressure : 24 mm Hg, (25 °C),
- Relative vapour density : no data available

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Relative density	:	1.04, (25 °C), ASTM D-1298
Density	:	1.04 g/cm ³ , 8.7 lb/gal
Water solubility	:	completely soluble
Solubility in other solvents	:	no data available
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	no data available
Thermal decomposition	:	no data available
Viscosity, dynamic	:	4 mPa.s (25 °C), Method: ASTM D 2983
Viscosity, kinematic	:	no data available
Molecular weight	:	no data available
VOC	:	no data available

Section: 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	Freezing temperatures. Extremes of temperature
Incompatible materials	:	Oxidizing agents
Hazardous decomposition products	:	In case of fire, hazardous decomposition products may be produced such as: Carbon oxides nitrogen oxides (NO _x)

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes	:	Causes serious eye irritation.
Skin	:	Causes skin irritation.
Ingestion	:	Health injuries are not known or expected under normal use.
Inhalation	:	Health injuries are not known or expected under normal use.
Chronic Exposure	:	Health injuries are not known or expected under normal use.

Experience with human exposure

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Eye contact : Redness, Pain, Irritation
Skin contact : Redness, Irritation
Ingestion : No symptoms known or expected.
Inhalation : No symptoms known or expected.

Toxicity

Product

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg
Acute inhalation toxicity : Acute toxicity estimate: 62.31 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Acute dermal toxicity : Acute toxicity estimate: > 5,000 mg/kg
Skin corrosion/irritation : no data available
Serious eye damage/eye irritation : no data available
Respiratory or skin sensitization : no data available
Carcinogenicity : no data available
Reproductive effects : no data available
Germ cell mutagenicity : no data available
Teratogenicity : no data available
STOT - single exposure : no data available
STOT - repeated exposure : no data available
Aspiration toxicity : no data available

Section: 12. ECOLOGICAL INFORMATION

Toxicity

Environmental Effects : This product has no known ecotoxicological effects.

Product

Toxicity to fish : LC50 Pimephales promelas (fathead minnow): > 1,000 mg/l
Exposure time: 96 hrs
Test substance: Product
LC50 Lepomis macrochirus (Bluegill sunfish): > 1,000 mg/l
Exposure time: 96 hrs
Test substance: Product
LC50 Oncorhynchus mykiss (rainbow trout): > 1,000 mg/l
Exposure time: 96 hrs
Test substance: Product

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NOEC Pimephales promelas (fathead minnow): 1,000 mg/l
Exposure time: 96 hrs
Test substance: Product

Toxicity to daphnia and other aquatic invertebrates : LC50 Daphnia magna (Water flea): > 1,000 mg/l
Exposure time: 48 hrs
Test substance: Product

NOEC Daphnia magna (Water flea): 600 mg/l
Exposure time: 48 hrs
Test substance: Product

Components

Toxicity to algae : Diethylethanolamine
EC50 : 44 mg/l
Exposure time: 72 h

Persistence and degradability

The organic portion of this preparation is expected to be readily biodegradable.

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air : <5%
Water : 30 - 50%
Soil : 50 - 70%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

This preparation or material is not expected to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

The information presented only applies to the material as supplied. The classification or waste code may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated at the time of disposal to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Disposal methods : Where possible recycling is preferred to disposal or

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incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Air transport (IATA)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Sea transport (IMDG/IMO)

Proper shipping name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

Section: 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This product does not contain a RQ substance, or this product contains a substance with a RQ, however the calculated RQ exceeds the reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

On or in compliance with the active portion of the TSCA inventory

Australia. Australian Industrial Chemicals Introduction Scheme (AICIS)

All substances in this product comply with the Australian Industrial Chemicals Introduction Scheme (AICIS)

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

Japan. ENCS - Existing and New Chemical Substances Inventory

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

Korea. Korean Existing Chemicals Inventory (KECI)

All substances in this product comply with the Chemical Control Act (CCA) and are listed on the Existing Chemicals List (ECL)

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

China Inventory of Existing Chemical Substances

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

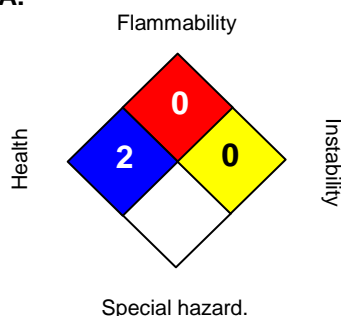
All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

Taiwan Chemical Substance Inventory

All substances in this product comply with the Taiwan Existing Chemical Substances Inventory (ECSI).

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	2
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 01/07/2022
Version Number : 1.5
Prepared By : Regulatory Affairs

SAFETY DATA SHEET

AQUAMAX™ EC3011A

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.nalco.com and request access.

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : FORTIS® EC3071A

Other means of identification : Not applicable.

Recommended use : PROCESS ANTIFOULANT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630) 305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 02/04/2020

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3

Skin irritation : Category 2

Serious eye damage : Category 1

Carcinogenicity : Category 2

Specific target organ toxicity - single exposure : Category 3 (Respiratory system, Central Nervous System)

Aspiration hazard : Category 1

GHS Label element

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes skin irritation.
Causes serious eye damage.
May cause respiratory irritation.
May cause drowsiness or dizziness.
Suspected of causing cancer.

Precautionary Statements : **Prevention:**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wear protective gloves/ protective clothing/ eye protection/ face protection.

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Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/ physician. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.

Storage:

Store in a well-ventilated place.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Xylene	1330-20-7	30 - 60
2,6-Di-tert-Butyl-4-Methylphenol	128-37-0	10 - 30
Ethylbenzene	100-41-4	10 - 30
Isobutanol	78-83-1	1 - 5

Section: 4. FIRST AID MEASURES

- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Get medical attention if irritation develops and persists.
- If swallowed : Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Aspiration hazard if swallowed - can enter lungs and cause damage. Get medical attention immediately.
- If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.
- Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

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Section: 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Foam
Carbon dioxide
Dry powder
Other extinguishing agent suitable for Class B fires
For large fires, use water spray or fog, thoroughly drenching the burning material.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.
Flash back possible over considerable distance.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, or expose containers to flame or other sources of ignition.
- Hazardous combustion products : Carbon oxides
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Remove all sources of ignition. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Do not flush into surface water or sanitary sewer system.

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Avoid contact with skin and eyes. Open drum carefully as content may be under pressure. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away from fire, sparks and

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FORTIS® EC3071A

heated surfaces. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.

Conditions for safe storage : Keep away from heat and sources of ignition. Keep in a cool, well-ventilated place. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers. Connections must be grounded to avoid electrical charges.

Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Carbon Steel C1018, Stainless Steel 304, Stainless Steel 316L, MDPE (medium density polyethylene), Perfluoroelastomer, PTFE, FEP (encapsulated), Surface-modified HDPE (high density polyethylene), Fluoroelastomer
The following compatibility data is suggested based on similar product data and/or industry experience: Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Neoprene, Nitrile, EPDM, TFE, HDPE (high density polyethylene)The following compatibility data is suggested based on similar product data and/or industry experience:

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Xylene	1330-20-7	TWA	100 ppm 435 mg/m3	OSHA Z1
		TWA	100 ppm	ACGIH
		STEL	150 ppm	ACGIH
2,6-Di-tert-Butyl-4-Methylphenol	128-37-0	TWA (Inhalable fraction and vapor)	2 mg/m3	ACGIH
		TWA	10 mg/m3	NIOSH REL
Ethylbenzene	100-41-4	TWA	20 ppm	ACGIH
		TWA	100 ppm 435 mg/m3	NIOSH REL
		STEL	125 ppm 545 mg/m3	NIOSH REL
Isobutanol	78-83-1	TWA	100 ppm 435 mg/m3	OSHA Z1
		TWA	50 ppm	ACGIH
		TWA	50 ppm 150 mg/m3	NIOSH REL
		TWA	100 ppm 300 mg/m3	OSHA Z1

Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

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Eye protection	: Safety goggles Face-shield
Hand protection	: Wear the following personal protective equipment: Viton® gloves Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Skin protection	: Wear suitable protective clothing.
Respiratory protection	: When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. An organic vapor cartridge may be used.
Hygiene measures	: Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: clear colourless to amber
Odour	: aromatic, Hydrocarbon
Flash point	: 27 °C, Method: ASTM D 93, Pensky-Martens closed cup
pH	: no data available
Odour Threshold	: no data available
Melting point/freezing point	: Pour point: -51 °C, ASTM D-97
Initial boiling point and boiling range	: 135.9 °C
Evaporation rate	: no data available
Flammability (solid, gas)	: Not applicable.
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: 14 mm Hg, (37.8 °C),
Relative vapour density	: no data available
Relative density	: 0.89, (15.6 °C),
Density	: 0.89 g/cm ³ , 7.4 lb/gal
Water solubility	: insoluble
Solubility in other solvents	: no data available

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Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	no data available
Thermal decomposition	:	no data available
Viscosity, dynamic	:	no data available
Viscosity, kinematic	:	1 mm ² /s (40 °C), estimated 0.75 mm ² /s (66 °C), estimated
Molecular weight	:	no data available
VOC	:	no data available

Section: 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Strong oxidizing agents
Hazardous decomposition products	:	In case of fire, hazardous decomposition products may be produced such as: Carbon oxides

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes	:	Causes serious eye damage.
Skin	:	Causes skin irritation.
Ingestion	:	May be fatal if swallowed and enters airways.
Inhalation	:	May cause respiratory tract irritation. May cause nose, throat, and lung irritation. Inhalation may cause central nervous system effects.
Chronic Exposure	:	Suspected of causing cancer.

Experience with human exposure

Eye contact	:	Redness, Pain, Corrosion
Skin contact	:	Redness, Irritation
Ingestion	:	Vomiting

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Inhalation : Respiratory irritation, Cough, Dizziness, Drowsiness

Toxicity

Product

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg

Acute inhalation toxicity : Acute toxicity estimate: 132.42 mg/l
Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : Acute toxicity estimate: 2,093 mg/kg

Skin corrosion/irritation : no data available

Serious eye damage/eye irritation : no data available

Respiratory or skin sensitization : no data available

Carcinogenicity

IARC

Group 2B: Possibly carcinogenic to humans

Ethylbenzene 100-41-4

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive effects : no data available

Germ cell mutagenicity : no data available

Teratogenicity : no data available

STOT - single exposure : no data available

STOT - repeated exposure : no data available

Aspiration toxicity : no data available

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : Very toxic to aquatic life with long lasting effects.

Components

Toxicity to fish : 2,6-Di-tert-Butyl-4-Methylphenol
LC50 Danio rerio (zebra fish): > 0.57 mg/l
Exposure time: 96 h

Components

Toxicity to daphnia and other aquatic invertebrates : 2,6-Di-tert-Butyl-4-Methylphenol
EC50 Daphnia magna (Water flea): 0.48 mg/l

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Exposure time: 48 h

Ethylbenzene
EC50 Daphnia: 1.81 mg/l
Exposure time: 48 h

Components

Toxicity to algae : 2,6-Di-tert-Butyl-4-Methylphenol
EC50 Desmodesmus subspicatus (green algae): > 0.40 mg/l
Exposure time: 72 h

Components

Toxicity to fish (Chronic toxicity) : 2,6-Di-tert-Butyl-4-Methylphenol
NOEC: 0.053 mg/l
Exposure time: 30 d
Species: Oryzias latipes (Japanese medaka)

Components

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : 2,6-Di-tert-Butyl-4-Methylphenol
NOEC: 0.069 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

Persistence and degradability

The organic portion of this preparation is expected to be inherently biodegradable.

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air : 5 - 10%
Water : 30 - 50%
Soil : 50 - 70%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

Component substances have a potential to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

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If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

The presence of an RQ component (Reportable Quantity for U.S. DOT) in this product causes it to be regulated with an additional description of RQ for road, or as Environmentally hazardous for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

Land transport (DOT)

Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : Xylene, Ethylbenzene
UN/ID No. : UN 1993
Transport hazard class(es) : 3
Packing group : III
Reportable Quantity (per package) : 190 lbs
RQ Component : Xylene

Air transport (IATA)

Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : Xylene, Ethylbenzene
UN/ID No. : UN 1993
Transport hazard class(es) : 3
Packing group : III
Reportable Quantity (per package) : 190 lbs
RQ Component : Xylene

Sea transport (IMDG/IMO)

Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : Xylene, Ethylbenzene
UN/ID No. : UN 1993
Transport hazard class(es) : 3
Packing group : III

*Marine pollutant : 2,6-Di-tert-Butyl-4-Methylphenol

* Note: This product is regulated as a Marine Pollutant when shipped by Rail or Highway (in bulk quantities), and when shipped by water in all quantities.

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FORTIS® EC3071A

Section: 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Xylene	1330-20-7	100	190

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.


SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Skin corrosion or irritation
Serious eye damage or eye irritation
Carcinogenicity
Specific target organ toxicity (single or repeated exposure)
Aspiration hazard

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Xylene	1330-20-7	50 - 70 %
Ethylbenzene	100-41-4	10 - 20 %

California Prop. 65

 **WARNING:** Cancer - www.P65Warnings.ca.gov

Ethylbenzene	100-41-4
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INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

Australia. Industrial Chemical (Notification and Assessment) Act

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

Japan. ENCS - Existing and New Chemical Substances Inventory

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FORTIS® EC3071A

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

Korea. Korean Existing Chemicals Inventory (KECI)

All substances in this product comply with the Chemical Control Act (CCA) and are listed on the Existing Chemicals List (ECL)

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

China Inventory of Existing Chemical Substances

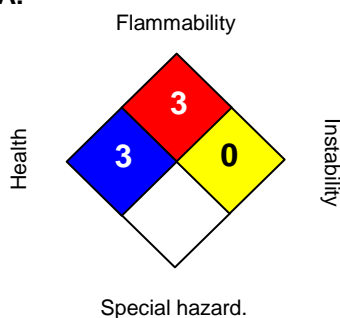
All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	3*
FLAMMABILITY	3
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 02/04/2020
Version Number : 1.4
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.nalco.com and request access.

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PRIMACT™ EC3072A PM 29912-00

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : PRIMACT™ EC3072A

Other means of identification : Not applicable.

Recommended use : PROCESS ANTIFOULANT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630) 305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 07/06/2021

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3

Skin corrosion : Category 1B

Serious eye damage : Category 1

Skin sensitization : Category 1

Carcinogenicity : Category 2

Reproductive toxicity : Category 2

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

Aspiration hazard : Category 1

GHS Label element

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause respiratory irritation.
Suspected of causing cancer.
Suspected of damaging fertility or the unborn child.

Precautionary Statements : **Prevention:**
Obtain special instructions before use. Do not handle until all safety precautions

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have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wear protective gloves/ protective clothing/ eye protection/ face protection. Contaminated work clothing should not be allowed out of the workplace. Wash skin thoroughly after handling. Ground/bond container and receiving equipment. Use explosion-proof electrical/ ventilating/ lighting/ equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Use only outdoors or in a well-ventilated area.

Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/ physician. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician. IF exposed or concerned: Get medical advice/attention. Immediately call a POISON CENTER or doctor/ physician. If skin irritation or rash occurs: Get medical advice/ attention. Take off contaminated clothing and wash before reuse. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage:

Store in a well-ventilated place. Protect product from freezing.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Heavy Aromatic Naphtha	64742-94-5	10 - 30
Butanol	71-36-3	5 - 10
Monoethanolamine	141-43-5	5 - 10
Phosphoric acid ester salt	Proprietary	1 - 5
Naphthalene	91-20-3	1 - 5
1,2,4-Trimethylbenzene	95-63-6	1 - 5
Nonylphenol	25154-52-3	0.1 - 1

Section: 4. FIRST AID MEASURES

- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
- If swallowed : Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Aspiration hazard if swallowed - can enter

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- lungs and cause damage. Get medical attention immediately.
- If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.
- Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Foam
Carbon dioxide
Dry powder
Other extinguishing agent suitable for Class B fires
For large fires, use water spray or fog, thoroughly drenching the burning material.
- Unsuitable extinguishing media : None known.
- Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.
Flash back possible over considerable distance.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
- Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides
nitrogen oxides (NOx) Sulphur oxides Oxides of phosphorus
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Use water spray to cool unopened containers. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Remove all sources of ignition. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for : Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain

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containment and cleaning up spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Avoid contact with skin and eyes. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Do not ingest. Keep away from fire, sparks and heated surfaces. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Conditions for safe storage : Keep away from heat and sources of ignition. Keep in a cool, well-ventilated place. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Stainless Steel 304, Stainless Steel 316L, Carbon Steel C1018, TFE, EPDM, FEP (encapsulated), PTFE, HDPE (high density polyethylene), Fluoroelastomer, Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.
- Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Nitrile, Neoprene, MDPE (medium density polyethylene), Surface-modified HDPE (high density polyethylene)

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Heavy Aromatic Naphtha	64742-94-5	TWA	500 ppm 2,000 mg/m ³	OSHA Z1
		TWA	200 mg/m ³ (as total hydrocarbon vapor)	ACGIH
Butanol	71-36-3	TWA	20 ppm	ACGIH
		Ceiling	50 ppm 150 mg/m ³	NIOSH REL
Monoethanolamine	141-43-5	TWA	100 ppm 300 mg/m ³	OSHA Z1
		TWA	3 ppm	ACGIH
		STEL	6 ppm	ACGIH
		TWA	3 ppm 8 mg/m ³	NIOSH REL
Naphthalene	91-20-3	STEL	6 ppm 15 mg/m ³	NIOSH REL
		TWA	3 ppm 6 mg/m ³	OSHA Z1
Naphthalene	91-20-3	TWA	10 ppm	ACGIH

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		TWA	10 ppm 50 mg/m3	NIOSH REL
		STEL	15 ppm 75 mg/m3	NIOSH REL
		TWA	10 ppm 50 mg/m3	OSHA Z1
1,2,4-Trimethylbenzene	95-63-6	TWA	25 ppm 125 mg/m3	NIOSH REL
		TWA	25 ppm	ACGIH

Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety goggles
Face-shield

Hand protection : Wear impervious chemical-resistant gloves when handling this product. The following glove types are recommended based on our review of glove manufacturer information and/or other available sources.
Nitrile rubber
Viton® gloves
Other glove types may be used for short term, incidental contact if determined by testing to provide adequate worker protection.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

Respiratory protection : Use local exhaust ventilation or other engineering controls as necessary to control airborne mist and vapor.
Where concentrations in air may exceed the limits given in this section or when significant mists, vapors, aerosols are generated, an approved air purifying respirator equipped with suitable filter cartridges is recommended.
Use a particulate pre-filter where operations generate significant mists or aerosols.
Recommended gas and vapour cartridge:
Organic vapor cartridge.
Ammonia / amine cartridge.
In event of emergency or planned entry into unknown concentrations, a positive pressure, full-facepiece SCBA or supplied-air respirator should be used.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance	: Liquid
Colour	: clear
Odour	: hydrocarbon-like
Flash point	: 48 °C, Method: ASTM D 93, Pensky-Martens closed cup
pH	: no data available
Odour Threshold	: no data available
Melting point/freezing point	: Freezing Point: -3 °C
Initial boiling point and boiling range	: no data available
Evaporation rate	: no data available
Flammability (solid, gas)	: Not applicable.
Upper explosion limit	: no data available
Lower explosion limit	: no data available
Vapour pressure	: 8.963 hPa, (20 °C),
Relative vapour density	: no data available
Relative density	: 0.9, (15 °C),
Density	: 7.48 lb/gal
Water solubility	: no data available
Solubility in other solvents	: no data available
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Thermal decomposition	: no data available
Viscosity, dynamic	: no data available
Viscosity, kinematic	: 11 mm ² /s (40 °C)
Molecular weight	: no data available
VOC	: no data available

Section: 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: Heat, flames and sparks.
Incompatible materials	: Strong oxidizing agents
Hazardous decomposition	: Decomposition products may include the following materials:

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OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP	Reasonably anticipated to be a human carcinogen Naphthalene 91-20-3
Reproductive effects	: no data available
Germ cell mutagenicity	: no data available
Teratogenicity	: no data available
STOT - single exposure	: no data available
STOT - repeated exposure	: no data available
Aspiration toxicity	: no data available

Section: 12. ECOLOGICAL INFORMATION

Toxicity

Environmental Effects : Toxic to aquatic life with long lasting effects.

Components

Toxicity to fish : Heavy Aromatic Naphtha
LC50 Oncorhynchus mykiss (rainbow trout): 3.5 mg/l
Exposure time: 96 h

Butanol
LC50 Pimephales promelas (fathead minnow): 1,376 mg/l
Exposure time: 96 h

1,2,4-Trimethylbenzene
LC50 Pimephales promelas (fathead minnow): 7.72 mg/l
Exposure time: 96 h

Components

Toxicity to daphnia and other aquatic invertebrates : Butanol
EC50 Daphnia magna (Water flea): 1,328 mg/l
Exposure time: 48 h

Monoethanolamine
LC50 Daphnia magna (Water flea): 65 mg/l
Exposure time: 48 h

1,2,4-Trimethylbenzene
LC50 Daphnia magna (Water flea): 3.6 mg/l
Exposure time: 48 h

Components

Toxicity to algae : Butanol
EC50 Pseudokirchneriella subcapitata (green algae): 225 mg/l
Exposure time: 96 h

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Components

Toxicity to bacteria : Butanol
4,390 mg/l

Components

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Butanol
NOEC: 4.1 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

Monoethanolamine
NOEC: 0.85 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

Persistence and degradability

The organic portion of this preparation is expected to be inherently biodegradable.

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air : <5%
Water : 10 - 30%
Soil : 70 - 90%

The portion in water is expected to float on the surface.

Bioaccumulative potential

Component substances have a potential to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

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Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

The presence of an RQ component (Reportable Quantity for U.S. DOT) in this product causes it to be regulated with an additional description of RQ for road, or as Environmentally hazardous for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

Land transport (DOT)

Proper shipping name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.
Technical name(s) : Butanol, 1,2,4-Trimethylbenzene, Monoethanolamine
UN/ID No. : UN 2924
Transport hazard class(es) : 3, 8
Packing group : III
Reportable Quantity (per package) : 3,230 lbs
RQ Component : Naphthalene

Air transport (IATA)

Proper shipping name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.
Technical name(s) : Butanol, 1,2,4-Trimethylbenzene, Monoethanolamine
UN/ID No. : UN 2924
Transport hazard class(es) : 3, 8
Packing group : III
Reportable Quantity (per package) : 3,230 lbs
RQ Component : Naphthalene

Sea transport (IMDG/IMO)

Proper shipping name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.
Technical name(s) : Butanol, 1,2,4-Trimethylbenzene, Monoethanolamine
UN/ID No. : UN 2924
Transport hazard class(es) : 3, 8
Packing group : III

*Marine pollutant : Naphthalene

* Note: This product is regulated as a Marine Pollutant when shipped by Rail or Highway (in bulk quantities), and when shipped by water in all quantities.

Section: 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

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EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Naphthalene	91-20-3	100	3235

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.


SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitisation
Carcinogenicity
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)
Aspiration hazard

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Butanol	71-36-3	5 - 10 %
Naphthalene	91-20-3	1 - 5 %
1,2,4-Trimethylbenzene	95-63-6	1 - 5 %

California Prop. 65

 **WARNING:** Cancer - www.P65Warnings.ca.gov

Naphthalene 91-20-3

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

On or in compliance with the active portion of the TSCA inventory

Australia. Australian Industrial Chemicals Introduction Scheme (AICIS)

All substances in this product comply with the Australian Industrial Chemicals Introduction Scheme (AICIS)

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

Japan. ENCS - Existing and New Chemical Substances Inventory

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

Korea. Korean Existing Chemicals Inventory (KECI)

All substances in this product comply with the Chemical Control Act (CCA) and are listed on the Existing Chemicals List (ECL)

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China Inventory of Existing Chemical Substances

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

Taiwan Chemical Substance Inventory

All substances in this product comply with the Taiwan Existing Chemical Substances Inventory (EC SI).

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

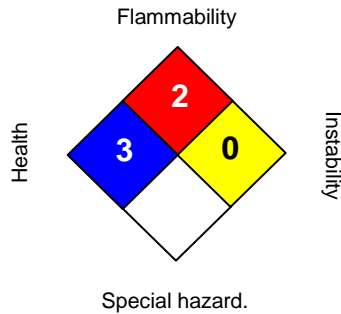
All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	3*
FLAMMABILITY	2
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 07/06/2021
Version Number : 1.4
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.nalco.com and request access.

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : COMPTRENE™ EC3205A

Other means of identification : Not applicable. PM 32914-00

Recommended use : PROCESS ANTIFOULANT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630) 305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 02/03/2020

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3

Skin irritation : Category 2

Eye irritation : Category 2B

Skin sensitization : Category 1

Carcinogenicity : Category 2

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

Aspiration hazard : Category 1

GHS Label element

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes skin and eye irritation.
May cause an allergic skin reaction.
May cause respiratory irritation.
Suspected of causing cancer.

Precautionary Statements : **Prevention:**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wear protective gloves/ protective clothing/ eye protection/ face protection.

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COMPTRENE™ EC3205A

Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/ physician. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage:

Store in a well-ventilated place.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Heavy Aromatic Naphtha	64742-94-5	60 - 100
Diethylhydroxylamine	3710-84-7	10 - 30
Naphthalene	91-20-3	5 - 10
1,2,4-Trimethylbenzene	95-63-6	5 - 10
Substituted aromatic amine	Proprietary	1 - 5

Section: 4. FIRST AID MEASURES

- In case of eye contact : Rinse with plenty of water. Get medical attention if symptoms occur.
- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
- If swallowed : Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Aspiration hazard if swallowed - can enter lungs and cause damage. Get medical attention immediately.
- If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.
- Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

SAFETY DATA SHEET

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- Suitable extinguishing media : Foam
Carbon dioxide
Dry powder
Other extinguishing agent suitable for Class B fires
For large fires, use water spray or fog, thoroughly drenching the burning material.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.
Flash back possible over considerable distance.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
- Hazardous combustion products : Carbon oxides nitrogen oxides (NOx)
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Remove all sources of ignition. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Do not flush into surface water or sanitary sewer system.

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Avoid contact with skin and eyes. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away from fire, sparks and heated surfaces. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Conditions for safe storage : Keep away from heat and sources of ignition. Keep in a cool, well-ventilated place. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.

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- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Aluminum, Mild steel, Carbon Steel C1018, Stainless Steel 304, Stainless Steel 316L, Hastelloy C-276, Perfluoroelastomer, FEP (encapsulated)
- Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Copper, Chlorosulfonated polyethylene rubber, Fluoroelastomer, Neoprene, Ethylene propylene, Polypropylene, MDPE (medium density polyethylene), Nitrile, Plexiglass, EPDM, TFE, Brass, Polytetrafluoroethylene/polypropylene copolymer, Nylon, PVC, Buna-N, HDPE (high density polyethylene), Natural rubber, Polyurethane, Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Heavy Aromatic Naphtha	64742-94-5	TWA	500 ppm 2,000 mg/m ³	OSHA Z1
		TWA	200 mg/m ³ (as total hydrocarbon vapor)	ACGIH
Diethylhydroxylamine	3710-84-7	TWA	2 ppm	ACGIH
Naphthalene	91-20-3	TWA	10 ppm	ACGIH
		TWA	10 ppm 50 mg/m ³	NIOSH REL
		STEL	15 ppm 75 mg/m ³	NIOSH REL
		TWA	10 ppm 50 mg/m ³	OSHA Z1
1,2,4-Trimethylbenzene	95-63-6	TWA	25 ppm 125 mg/m ³	NIOSH REL
		TWA	25 ppm	ACGIH

- Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

- Eye protection : Safety goggles
Face-shield
- Hand protection : Wear the following personal protective equipment:
Standard glove type.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Skin protection : Wear suitable protective clothing.
- Respiratory protection : When workers are facing concentrations above the exposure limit they must use

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appropriate certified respirators.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid
Colour : dark amber
Odour : aromatic, Hydrocarbon, amine-like
Flash point : 50 °C, Method: ASTM D 93, Pensky-Martens closed cup
pH : Not applicable.
Odour Threshold : no data available
Melting point/freezing point : no data available
Initial boiling point and boiling range : 134 °C, Method: ASTM D 86
Evaporation rate : no data available
Flammability (solid, gas) : Not applicable.
Upper explosion limit : no data available
Lower explosion limit : no data available
Vapour pressure : < 5.2 mm Hg, (38 °C), ASTM D 5191,
Relative vapour density : no data available
Relative density : 0.9, (16 °C),
Density : 7.49 lb/gal
Water solubility : insoluble
Solubility in other solvents : no data available
Partition coefficient: n-octanol/water : no data available
Auto-ignition temperature : no data available
Thermal decomposition : no data available
Viscosity, dynamic : no data available
Viscosity, kinematic : 1.31 mm²/s (40 °C), Method: ASTM D 445
Molecular weight : no data available
VOC : no data available

Section: 10. STABILITY AND REACTIVITY

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Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reaction known under conditions of normal use.
Conditions to avoid	: Heat, flames and sparks.
Incompatible materials	: Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.
Hazardous decomposition products	: In case of fire, hazardous decomposition products may be produced such as: Carbon oxides nitrogen oxides (NOx)

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes	: Causes eye irritation.
Skin	: Causes skin irritation. May cause allergic skin reaction.
Ingestion	: May be fatal if swallowed and enters airways.
Inhalation	: May cause respiratory tract irritation. May cause nose, throat, and lung irritation.
Chronic Exposure	: Suspected of causing cancer.

Experience with human exposure

Eye contact	: Redness, Irritation
Skin contact	: Redness, Irritation, Allergic reactions
Ingestion	: Vomiting
Inhalation	: Respiratory irritation, Cough

Toxicity

Product

Acute oral toxicity	: Acute toxicity estimate: 4,412 mg/kg
Acute inhalation toxicity	: Acute toxicity estimate: 58.34 mg/l Exposure time: 4 h Test atmosphere: vapour
Acute dermal toxicity	: Acute toxicity estimate: > 5,000 mg/kg

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Skin corrosion/irritation	:	no data available
Serious eye damage/eye irritation	:	Result: Mild eye irritation
Respiratory or skin sensitization	:	no data available
Carcinogenicity		
IARC		Group 2B: Possibly carcinogenic to humans Naphthalene 91-20-3
OSHA		No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP		Reasonably anticipated to be a human carcinogen Naphthalene 91-20-3
Reproductive effects	:	no data available
Germ cell mutagenicity	:	no data available
Teratogenicity	:	no data available
STOT - single exposure	:	no data available
STOT - repeated exposure	:	no data available
Aspiration toxicity	:	May be fatal if swallowed and enters airways.

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : Very toxic to aquatic life with long lasting effects.

Product

Toxicity to fish : LC50 Fish: 1.9 mg/l
Exposure time: 96 hrs

Toxicity to daphnia and other aquatic invertebrates : LC50 Crustacean: 1.9 mg/l
Exposure time: 48 hrs

Components

Toxicity to algae : Diethylhydroxylamine
EC50 Pseudokirchneriella subcapitata (algae): > 101 mg/l
Exposure time: 72 h

Persistence and degradability

no data available

Mobility

no data available

Bioaccumulative potential

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no data available

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

The information presented only applies to the material as supplied. The classification or waste code may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated at the time of disposal to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

The presence of an RQ component (Reportable Quantity for U.S. DOT) in this product causes it to be regulated with an additional description of RQ for road, or as Environmentally hazardous for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

Land transport (DOT)

Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : Substituted alkylamine, 1,2,4-Trimethylbenzene
UN/ID No. : UN 1993
Transport hazard class(es) : 3
Packing group : III
Reportable Quantity (per package) : 1,260 lbs
RQ Component : Naphthalene

Air transport (IATA)

Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : Substituted alkylamine, 1,2,4-Trimethylbenzene
UN/ID No. : UN 1993
Transport hazard class(es) : 3
Packing group : III
Reportable Quantity (per package) : 1,260 lbs
RQ Component : Naphthalene

Sea transport (IMDG/IMO)

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Proper shipping name : FLAMMABLE LIQUID, N.O.S.
Technical name(s) : Substituted alkylamine, 1,2,4-Trimethylbenzene
UN/ID No. : UN 1993
Transport hazard class(es) : 3
Packing group : III

*Marine pollutant : Heavy Aromatic Naphtha, Naphthalene

* Note: This product is regulated as a Marine Pollutant when shipped by Rail or Highway (in bulk quantities), and when shipped by water in all quantities.

Section: 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Naphthalene	91-20-3	100	1263

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.


SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitisation
Carcinogenicity
Specific target organ toxicity (single or repeated exposure)
Aspiration hazard

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Naphthalene	91-20-3	5 - 10 %
1,2,4-Trimethylbenzene	95-63-6	5 - 10 %

California Prop. 65

 **WARNING:** Cancer - www.P65Warnings.ca.gov

Naphthalene 91-20-3

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

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The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

Australia. Industrial Chemical (Notification and Assessment) Act

This product contains substance(s) which are not in compliance with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS) and may require additional review.

Canadian Domestic Substances List (DSL)

This product contains substance(s) which are not listed on the Domestic Substances List (DSL) or the Non-Domestic Substances List (NDSL).

Japan. ENCS - Existing and New Chemical Substances Inventory

This product contains substance(s) which are not in compliance with the Law Regulating the Manufacture and Importation Of Chemical Substances and are not listed on the Existing and New Chemical Substances list (ENCS).

Korea. Korean Existing Chemicals Inventory (KECI)

This product contains substance(s) which are not in compliance with the Chemical Control Act (CCA) and may require additional review.

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

This product contains substance(s) which are not in compliance with the Republic Act 6969 (RA 6969) and may require additional review.

China Inventory of Existing Chemical Substances

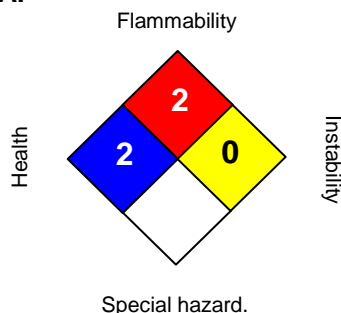
All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	2*
FLAMMABILITY	2
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 02/03/2020
Version Number : 1.3
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

SAFETY DATA SHEET

COMPTRENE™ EC3205A

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.nalco.com and request access.

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : ACTRENE® EC3267A

Other means of identification : Not applicable.

Recommended use : PROCESS ANTIFOULANT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Company
1601 W. Diehl Road
Naperville, Illinois 60563-1198
USA
TEL: (630) 305-1000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 02/03/2020

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3

Acute toxicity (Inhalation) : Category 4

Skin corrosion : Category 1C

Serious eye damage : Category 1

Skin sensitization : Category 1

Carcinogenicity : Category 2

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

Specific target organ toxicity - repeated exposure (Oral) : Category 2 (Liver)

Aspiration hazard : Category 1

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Harmful if inhaled.
May cause respiratory irritation.
Suspected of causing cancer.
May cause damage to organs (Liver) through prolonged or repeated exposure if

SAFETY DATA SHEET

ACTRENE® EC3267A

swallowed.

Precautionary Statements : **Prevention:**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not breathe dust/fume/gas/mist/vapours/spray. Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/ physician. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
Storage:
Store in a well-ventilated place.
Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Heavy Aromatic Naphtha	64742-94-5	30 - 60
Diethylhydroxylamine	3710-84-7	10 - 30
Substituted aromatic amine	Proprietary	10 - 30
Substituted phenol 1	Proprietary	5 - 10
Naphthalene	91-20-3	5 - 10
1,2,4-Trimethylbenzene	95-63-6	1 - 5
Substituted phenol 2	Proprietary	1 - 5

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

If swallowed : Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Aspiration hazard if swallowed - can enter lungs and cause damage. Get medical attention immediately.

If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention.

Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.

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- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Foam
Carbon dioxide
Dry powder
Other extinguishing agent suitable for Class B fires
For large fires, use water spray or fog, thoroughly drenching the burning material.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.
Flash back possible over considerable distance.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
- Hazardous combustion products : Carbon oxides nitrogen oxides (NOx)
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Use water spray to cool unopened containers. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Remove all sources of ignition. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Do not flush into surface water or sanitary sewer system.

Section: 7. HANDLING AND STORAGE

SAFETY DATA SHEET

ACTRENE® EC3267A

- Advice on safe handling : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Do not ingest. Keep away from fire, sparks and heated surfaces. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Conditions for safe storage : Keep away from heat and sources of ignition. Keep in a cool, well-ventilated place. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: FEP (encapsulated), Aluminum, Mild steel, Carbon Steel C1018, Stainless Steel 304, Stainless Steel 316L, Hastelloy C-276, PTFE, Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use., Perfluoroelastomer
- Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Copper, Neoprene, Ethylene propylene, Polypropylene, Polyethylene, MDPE (medium density polyethylene), Nitrile, Plexiglass, EPDM, TFE, Brass, Nylon, PVC, Buna-N, HDPE (high density polyethylene), Natural rubber, Polyurethane, Polytetrafluoroethylene/polypropylene copolymer, Chlorosulfonated polyethylene rubber, Fluoroelastomer

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Heavy Aromatic Naphtha	64742-94-5	TWA	500 ppm 2,000 mg/m ³	OSHA Z1
		TWA	200 mg/m ³ (as total hydrocarbon vapor)	ACGIH
Diethylhydroxylamine	3710-84-7	TWA	2 ppm	ACGIH
Naphthalene	91-20-3	TWA	10 ppm	ACGIH
		TWA	10 ppm 50 mg/m ³	NIOSH REL
		STEL	15 ppm 75 mg/m ³	NIOSH REL
		TWA	10 ppm 50 mg/m ³	OSHA Z1
1,2,4-Trimethylbenzene	95-63-6	TWA	25 ppm 125 mg/m ³	NIOSH REL
		TWA	25 ppm	ACGIH

- Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

- Eye protection : Safety goggles
Face-shield

SAFETY DATA SHEET

ACTRENE® EC3267A

- Hand protection : Wear the following personal protective equipment:
Viton® gloves
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Skin protection : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing
- Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
An organic vapor cartridge may be used.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

The Personal Protective Equipment (PPE) recommendations provided above have been made in good faith based on typical expected conditions of use. PPE selection should always be completed in conjunction with a proper risk assessment and in accordance with a PPE management program.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Liquid
- Colour : Dark red
- Odour : Aromatic Hydrocarbon
- Flash point : 49 °C, Method: ASTM D 93, Pensky-Martens closed cup
- pH : Not applicable.
- Odour Threshold : no data available
- Melting point/freezing point : MELTING POINT: -40 °C, ASTM D-97
- Initial boiling point and boiling range : no data available
- Evaporation rate : no data available
- Flammability (solid, gas) : Not applicable.
- Upper explosion limit : no data available
- Lower explosion limit : no data available
- Vapour pressure : no data available
- Relative vapour density : no data available
- Relative density : 0.89 - 0.9, (15.6 °C), ASTM D-1298
- Density : 7.4 - 7.5 lb/gal
- Water solubility : insoluble
- Solubility in other solvents : no data available
- Partition coefficient: n-octanol/water : no data available

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Auto-ignition temperature	:	no data available
Thermal decomposition	:	no data available
Viscosity, dynamic	:	no data available
Viscosity, kinematic	:	1.6 mm ² /s (40 °C), Method: ASTM D 445
Molecular weight	:	no data available
VOC	:	no data available

Section: 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Oxidizing agents Certain amines in contact with nitrous acid, organic or inorganic nitrites or atmospheres with high nitrous oxide concentrations may produce N-nitrosamines, many of which are cancer-causing agents to laboratory animals.
Hazardous decomposition products	:	In case of fire, hazardous decomposition products may be produced such as: Carbon oxides nitrogen oxides (NO _x)

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes	:	Causes serious eye damage.
Skin	:	Causes severe skin burns. May cause allergic skin reaction.
Ingestion	:	May be fatal if swallowed and enters airways. Causes digestive tract burns.
Inhalation	:	May cause respiratory tract irritation. Harmful if inhaled. May cause nose, throat, and lung irritation.
Chronic Exposure	:	Suspected of causing cancer.

Experience with human exposure

Eye contact	:	Redness, Pain, Corrosion
Skin contact	:	Redness, Pain, Irritation, Corrosion, Allergic reactions
Ingestion	:	Corrosion, Vomiting, Abdominal pain

SAFETY DATA SHEET

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Inhalation : Respiratory irritation, Cough

Toxicity

Product

Acute oral toxicity : Acute toxicity estimate: 2,328 mg/kg

Acute inhalation toxicity : Acute toxicity estimate: 3.04 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : Acute toxicity estimate: 2,477 mg/kg

Skin corrosion/irritation : no data available

Serious eye damage/eye irritation : no data available

Respiratory or skin sensitization : no data available

Carcinogenicity

IARC **Group 2B: Possibly carcinogenic to humans**
Naphthalene 91-20-3

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP **Reasonably anticipated to be a human carcinogen**
Naphthalene 91-20-3

Reproductive effects : no data available

Germ cell mutagenicity : no data available

Teratogenicity : no data available

STOT - single exposure : no data available

STOT - repeated exposure : May cause damage to organs through prolonged or repeated exposure.

Aspiration toxicity : no data available

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : Toxic to aquatic life.
Very toxic to aquatic life with long lasting effects.

Components

Toxicity to fish : Heavy Aromatic Naphtha
LC50 Oncorhynchus mykiss (rainbow trout): 3.5 mg/l
Exposure time: 96 h

Diethylhydroxylamine
LC50 Pimephales promelas (fathead minnow): > 134 mg/l

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Exposure time: 96 h

Substituted aromatic amine
LC50 Fish: 0.202 mg/l
Exposure time: 96 h

Components

Toxicity to daphnia and other aquatic invertebrates : Diethylhydroxylamine
EC50 *Daphnia magna* (Water flea): 8.2 mg/l
Exposure time: 48 h

Substituted phenol 2
Daphnia magna (Water flea): 0.5 mg/l
Exposure time: 48 h

Components

Toxicity to algae : Diethylhydroxylamine
EC50 *Pseudokirchneriella subcapitata* (algae): > 101 mg/l
Exposure time: 72 h

Substituted phenol 2
Desmodesmus subspicatus (green algae): 0.13 mg/l
Exposure time: 72 h

Persistence and degradability

The organic portion of this preparation is expected to be inherently biodegradable.

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	:	<5%
Water	:	10 - 30%
Soil	:	70 - 90%

The portion in water is expected to float on the surface.

Bioaccumulative potential

Component substances have a potential to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

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If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

- Hazardous Waste: : D001, D018
- Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.
- Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

The presence of an RQ component (Reportable Quantity for U.S. DOT) in this product causes it to be regulated with an additional description of RQ for road, or as Environmentally hazardous for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

Land transport (DOT)

- Proper shipping name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.
Technical name(s) : Substituted alkylamine, Substituted aromatic amine
UN/ID No. : UN 2924
Transport hazard class(es) : 3, 8
Packing group : III
Reportable Quantity (per package) : 2,000 lbs
RQ Component : NAPHTHALENE

Air transport (IATA)

- Proper shipping name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.
Technical name(s) : Substituted alkylamine, Substituted aromatic amine
UN/ID No. : UN 2924
Transport hazard class(es) : 3, 8
Packing group : III
Reportable Quantity (per package) : 2,000 lbs
RQ Component : NAPHTHALENE

Sea transport (IMDG/IMO)

- Proper shipping name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.
Technical name(s) : Substituted alkylamine, Substituted aromatic amine
UN/ID No. : UN 2924
Transport hazard class(es) : 3, 8
Packing group : III

- *Marine pollutant : Substituted aromatic amine, Substituted phenol 1

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* Note: This product is regulated as a Marine Pollutant when shipped by Rail or Highway (in bulk quantities), and when shipped by water in all quantities.

Section: 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Naphthalene	91-20-3	100	2000

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.


SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Carcinogenicity
Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitisation
Specific target organ toxicity (single or repeated exposure)
Aspiration hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Naphthalene	91-20-3	5 %
1,2,4-Trimethylbenzene	95-63-6	3.2 %

California Prop. 65

 **WARNING:** Cancer - www.P65Warnings.ca.gov

Naphthalene 91-20-3

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

Canadian Domestic Substances List (DSL)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

China Inventory of Existing Chemical Substances

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All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

Korea. Korean Existing Chemicals Inventory (KECI)

All substances in this product comply with the Chemical Control Act (CCA) and are listed on the Existing Chemicals List (ECL)

Japan. ENCS - Existing and New Chemical Substances Inventory

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

Australia. Industrial Chemical (Notification and Assessment) Act

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

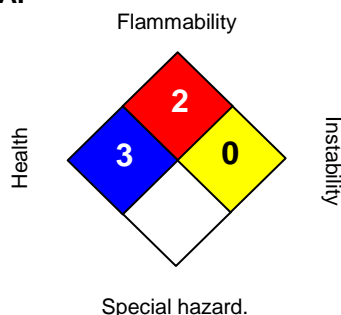
All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

Taiwan Chemical Substance Inventory

All substances in this product comply with the Taiwan Existing Chemical Substances Inventory (ECSI).

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	3*
FLAMMABILITY	2
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 02/03/2020
Version Number : 1.4
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality

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specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. For additional copies of an SDS visit www.nalco.com and request access.

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ACTRENE® EC3269A

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : ACTRENE® EC3269A

Other means of identification : Not applicable.

Recommended use : PROCESS ANTIFOULANT
ANTIFOULANT

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company : Nalco Champion Company
7705 Highway 90-A
Sugar Land, Texas 77478
USA
TEL: (281) 263-7000

Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC

Issuing date : 03/02/2015

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3
Skin corrosion : Category 1C
Serious eye damage : Category 1
Skin sensitization : Category 1
Carcinogenicity : Category 2
Aspiration hazard : Category 1

GHS Label element

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Suspected of causing cancer.

Precautionary Statements : **Prevention:**
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ ventilating/ lighting/ equipment. Use only non-sparking tools. Take precautionary

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measures against static discharge. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wash skin thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/ protective clothing/ eye protection/ face protection. Use personal protective equipment as required.

Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/attention. Immediately call a POISON CENTER or doctor/physician. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage:

Store in a well-ventilated place. Keep cool. Store locked up.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration: (%)
Heavy Aromatic Naphtha	64742-94-5	60 - 100
Substituted alkylamine	Proprietary	10 - 30
Naphthalene	91-20-3	5 - 10
Substituted aromatic amine	Proprietary	5 - 10
1,2,4-Trimethylbenzene	95-63-6	1 - 5
Substituted phenol 1	Proprietary	1 - 5
Paraffinic oil	64742-65-0	1 - 5

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

If swallowed : Do NOT induce vomiting. Rinse mouth with water. Never give anything by mouth to an unconscious person. Aspiration hazard if swallowed - can enter lungs and cause damage. Get medical attention immediately.

If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.

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- Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Fire Hazard
Keep away from heat and sources of ignition.
Flash back possible over considerable distance.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
- Hazardous combustion products : Decomposition products may include the following materials:
Carbon oxides nitrogen oxides (NOx)
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Use water spray to cool unopened containers. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Remove all sources of ignition. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Do not flush into surface water or sanitary sewer system.

Section: 7. HANDLING AND STORAGE

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- Advice on safe handling : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Do not ingest. Keep away from fire, sparks and heated surfaces. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Conditions for safe storage : Keep away from heat and sources of ignition. Keep in a cool, well-ventilated place. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers.
- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: PTFE, FEP (encapsulated), Aluminum, Mild steel, Carbon Steel C1018, Stainless Steel 304, Stainless Steel 316L, Hastelloy C-276, Perfluoroelastomer, Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use., Surface-modified HDPE (high density polyethylene)
- Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Copper, Neoprene, Ethylene propylene, Polypropylene, Polyethylene, MDPE (medium density polyethylene), Nitrile, Plexiglass, EPDM, TFE, Brass, Nylon, PVC, Buna-N, HDPE (high density polyethylene), Natural rubber, Polyurethane, Polytetrafluoroethylene/polypropylene copolymer, Chlorosulfonated polyethylene rubber, Fluoroelastomer, Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Heavy Aromatic Naphtha	64742-94-5	TWA	500 ppm 2,000 mg/m ³	OSHA Z1
		TWA	200 mg/m ³	ACGIH
Naphthalene	91-20-3	TWA	10 ppm	ACGIH
		STEL	15 ppm	ACGIH
		TWA	10 ppm 50 mg/m ³	NIOSH REL
		STEL	15 ppm 75 mg/m ³	NIOSH REL
		TWA	10 ppm 50 mg/m ³	OSHA Z1
1,2,4-Trimethylbenzene	95-63-6	TWA	25 ppm 125 mg/m ³	NIOSH REL
Paraffinic oil	64742-65-0	TWA (Inhalable fraction)	5 mg/m ³	ACGIH
		TWA (Mist)	5 mg/m ³	NIOSH REL
		STEL (Mist)	10 mg/m ³	NIOSH REL
		TWA (Mist)	5 mg/m ³	OSHA Z1

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Engineering measures : Effective exhaust ventilation system Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety goggles
Face-shield

Hand protection : Wear the following personal protective equipment:
Standard glove type.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid

Colour : red

Odour : hydrocarbon-like

Flash point : 53.9 °C
Method: Pensky-Martens closed cup

pH : Not applicable.

Odour Threshold : no data available

Melting point/freezing point : MELTING POINT: -40 °C, ASTM D-97

Initial boiling point and boiling range : no data available

Evaporation rate : no data available

Flammability (solid, gas) : no data available

Upper explosion limit : no data available

Lower explosion limit : no data available

Vapour pressure : no data available

Relative vapour density : no data available

Relative density : 0.89 - 0.9 (15.6 °C) ASTM D-1298

Density : 7.4 - 7.5 lb/gal

Water solubility : insoluble

Solubility in other solvents : no data available

Partition coefficient: n- : no data available

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octanol/water

- Auto-ignition temperature : no data available
- Thermal decomposition temperature : no data available
- Viscosity, dynamic : no data available
- Viscosity, kinematic : 3.2 mm²/s (40 °C)
Method: ASTM D 445
- VOC : no data available

Section: 10. STABILITY AND REACTIVITY

- Chemical stability : Stable under normal conditions.
- Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.
- Conditions to avoid : Heat, flames and sparks.
- Incompatible materials : Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.
Strong acids
Certain amines in contact with nitrous acid, organic or inorganic nitrites or atmospheres with high nitrous oxide concentrations may produce N-nitrosamines, many of which are cancer-causing agents to laboratory animals.
- Hazardous decomposition products : Decomposition products may include the following materials:
Carbon oxides
nitrogen oxides (NO_x)

Section: 11. TOXICOLOGICAL INFORMATION

- Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

- Eyes : Causes serious eye damage.
- Skin : Causes severe skin burns. May cause allergic skin reaction.
- Ingestion : May be fatal if swallowed and enters airways. Causes digestive tract burns.
- Inhalation : May cause nose, throat, and lung irritation.
- Chronic Exposure : Suspected of causing cancer.

Experience with human exposure

- Eye contact : Redness, Pain, Corrosion
- Skin contact : Redness, Pain, Irritation, Corrosion, Allergic reactions
- Ingestion : Corrosion, Vomiting, Abdominal pain

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Inhalation : Respiratory irritation, Cough

Toxicity

Product

Acute oral toxicity : Acute toxicity estimate : 2,867 mg/kg

Acute inhalation toxicity : Acute toxicity estimate : > 40 mg/l
Exposure time: 4 h

Acute dermal toxicity : Acute toxicity estimate : > 5,000 mg/kg

Skin corrosion/irritation : no data available

Serious eye damage/eye irritation : no data available

Respiratory or skin sensitization : no data available

Carcinogenicity

IARC

Group 2B: Possibly carcinogenic to humans

Naphthalene 91-20-3

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

Reasonably anticipated to be a human carcinogen

Naphthalene 91-20-3

Reproductive effects : no data available

Germ cell mutagenicity : no data available

Teratogenicity : no data available

STOT - single exposure : no data available

STOT - repeated exposure : no data available

Aspiration toxicity : no data available

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : Very toxic to aquatic life with long lasting effects.

Components

Toxicity to fish : Heavy Aromatic Naphtha
LC50 : 3.5 mg/l
Exposure time: 96 h

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Substituted aromatic amine
LC50 : 0.202 mg/l
Exposure time: 96 h

Persistence and degradability

The organic portion of this preparation is expected to be inherently biodegradable.

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	:	<5%
Water	:	10 - 30%
Soil	:	70 - 90%

The portion in water is expected to float on the surface.

Bioaccumulative potential

Component substances have a potential to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

The information presented only applies to the material as supplied. The classification or waste code may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

The presence of an RQ component (Reportable Quantity for U.S. EPA and DOT) in this product causes it to be regulated with an additional description of RQ for road, or as a class 9 for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

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Proper shipping name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.
Technical name(s) : Substituted alkylamine, Substituted aromatic amine
UN/ID No. : UN 2924
Transport hazard class(es) : 3, 8
Packing group : III
Reportable Quantity (per package) : 1,370 lbs
RQ Component : NAPHTHALENE

Air transport (IATA)

The presence of an RQ component (Reportable Quantity for U.S. EPA and DOT) in this product causes it to be regulated with an additional description of RQ for road, or as a class 9 for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

Proper shipping name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.
Technical name(s) : Substituted alkylamine, Substituted aromatic amine
UN/ID No. : UN 2924
Transport hazard class(es) : 3, 8
Packing group : III
Reportable Quantity (per package) : 1,370 lbs
RQ Component : NAPHTHALENE

Sea transport (IMDG/IMO)

Proper shipping name : FLAMMABLE LIQUID, CORROSIVE, N.O.S.
Technical name(s) : Substituted alkylamine, Substituted aromatic amine
UN/ID No. : UN 2924
Transport hazard class(es) : 3, 8
Packing group : III

*Marine pollutant : Substituted aromatic amine

*Note: This product is regulated as a Marine Pollutant when shipped by Rail, Highway (in bulk quantities), or Air (if no other hazard class applies), and when shipped by water in all quantities.

Section: 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Naphthalene	91-20-3	100	1370

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard
Chronic Health Hazard
Fire Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SAFETY DATA SHEET

ACTRENE® EC3269A

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Naphthalene	91-20-3	5 - 10 %
1,2,4-Trimethylbenzene	95-63-6	1 - 5 %

California Prop 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

Naphthalene	91-20-3
Paraffinic oil	64742-65-0

INTERNATIONAL CHEMICAL CONTROL LAWS :

TOXIC SUBSTANCES CONTROL ACT (TSCA)

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

AUSTRALIA

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

CHINA

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

EUROPE

The substances in this preparation have been reviewed for compliance with the EINECS or ELINCS inventories.

JAPAN

All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

KOREA

All substances in this product comply with the Toxic Chemical Control Law (TCCL) and are listed on the Existing Chemicals List (ECL)

NEW ZEALAND

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

PHILIPPINES

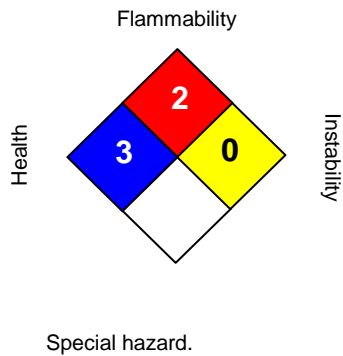
This product contains substance(s) which are not in compliance with the Republic Act 6969 (RA 6969) and may require additional review.

Section: 16. OTHER INFORMATION

SAFETY DATA SHEET

ACTRENE® EC3269A

NFPA:



HMIS III:

HEALTH	3*
FLAMMABILITY	2
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 03/02/2015
Version Number : 1.0
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

For additional copies of an MSDS visit www.nalco.com and request access.

NALCO® EC3332W

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : NALCO® EC3332W 36337-00
 Other means of identification : Not applicable.
 Recommended use : ANTIFOULANT
 Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.
 Company : Nalco Champion Company
 7705 Highway 90-A
 Sugar Land, Texas 77478
 USA
 TEL: (281) 263-7000
 Emergency telephone number : (800) 424-9300 (24 Hours) CHEMTREC
 Issuing date : 03/06/2015

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 4
 Acute toxicity (Inhalation) : Category 4
 Aspiration hazard : Category 1

GHS Label element

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : Combustible liquid
 May be fatal if swallowed and enters airways.
 Harmful if inhaled.

Precautionary Statements : **Prevention:**
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Use only outdoors or in a well-ventilated area. Wear protective gloves/ eye protection/ face protection.
Response:
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell. Do NOT induce vomiting. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
Storage:

Store in a well-ventilated place. Keep cool. Store locked up.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Concentration: (%)
Straight Run Middle Distillate	64741-44-2	30 - 60
Hydrotreated Light Distillate	64742-47-8	10 - 30
Polypropylene Glycol	25322-69-4	10 - 30
Ethoxylated Tall Oil	61791-00-2	1 - 5
Aliphatic alcohol	Proprietary	1 - 5

Section: 4. FIRST AID MEASURES

In case of eye contact	: Rinse with plenty of water. Get medical attention if symptoms occur.
In case of skin contact	: Wash off with soap and plenty of water. Get medical attention if symptoms occur.
If swallowed	: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Aspiration hazard if swallowed - can enter lungs and cause damage. Get medical attention immediately.
If inhaled	: Remove to fresh air. Treat symptomatically. Get medical attention.
Protection of first-aiders	: In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
Notes to physician	: Treat symptomatically.
Most important symptoms and effects, both acute and delayed	: See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	: High volume water jet
Specific hazards during firefighting	: Fire Hazard Keep away from heat and sources of ignition. Flash back possible over considerable distance.
Hazardous combustion products	: Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) Sulphur oxides Oxides of phosphorus
Special protective equipment for firefighters	: Use personal protective equipment.

Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Remove all sources of ignition. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Do not allow contact with soil, surface or ground water.

Methods and materials for containment and cleaning up : Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Do not flush into surface water or sanitary sewer system.

Section: 7. HANDLING AND STORAGE

Advice on safe handling : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away from fire, sparks and heated surfaces. Do not breathe dust/fume/gas/mist/vapours/spray. Wash hands thoroughly after handling. Use only with adequate ventilation.

Conditions for safe storage : Keep away from heat and sources of ignition. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers.

Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

Unsuitable material : not determined

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Hydrotreated Light Distillate	64742-47-8	TWA	500 ppm 2,000 mg/m ³	OSHA Z1
		TWA	200 mg/m ³	ACGIH
		TWA (Mist)	5 mg/m ³	OSHA Z1
		TWA (Mist)	5 mg/m ³	NIOSH REL
		STEL (Mist)	10 mg/m ³	NIOSH REL
Polypropylene Glycol	25322-69-4	TWA (Aerosol.)	10 mg/m ³	WEEL

Engineering measures : Effective exhaust ventilation system Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety glasses

Hand protection : Wear protective gloves.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Wear suitable protective clothing.

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid

Colour : off-white

Odour : hydrocarbon-like

Flash point : 93.0 °C

pH : no data available

Odour Threshold : no data available

Melting point/freezing point : FREEZING POINT: -16 °C

Initial boiling point and boiling range : no data available

Evaporation rate : no data available

Flammability (solid, gas) : no data available

Upper explosion limit : no data available

Lower explosion limit : no data available

Vapour pressure : no data available

Relative vapour density : no data available

Relative density : 0.84 (15.6 °C)

Density : 7.0 lb/gal

Water solubility : immiscible

Solubility in other solvents : no data available

Partition coefficient: n-octanol/water : no data available

Auto-ignition temperature : no data available

Thermal decomposition temperature : no data available

Viscosity, dynamic : 4.7 mPa.s (40 °C)

Viscosity, kinematic : no data available
VOC : no data available

Section: 10. STABILITY AND REACTIVITY

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.
Conditions to avoid : Heat, flames and sparks.

Incompatible materials : Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.

Hazardous decomposition products : Decomposition products may include the following materials:
Carbon oxides
nitrogen oxides (NO_x)
Sulphur oxides
Oxides of phosphorus

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes : Health injuries are not known or expected under normal use.

Skin : Health injuries are not known or expected under normal use.

Ingestion : May be fatal if swallowed and enters airways.

Inhalation : Harmful if inhaled.

Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact : No symptoms known or expected.

Skin contact : No symptoms known or expected.

Ingestion : Vomiting

Inhalation : No information available.

Toxicity**Product**

Acute oral toxicity : no data available

Acute inhalation toxicity	: Acute toxicity estimate : 18.49 mg/l Exposure time: 4 h
Acute dermal toxicity	: Acute toxicity estimate : > 5,000 mg/kg
Skin corrosion/irritation	: no data available
Serious eye damage/eye irritation	: no data available
Respiratory or skin sensitization	: no data available
Carcinogenicity	
IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
Reproductive effects	: no data available
Germ cell mutagenicity	: no data available
Teratogenicity	: no data available
STOT - single exposure	: no data available
STOT - repeated exposure	: no data available
Aspiration toxicity	: no data available

Components

Acute oral toxicity	: Straight Run Middle Distillate LD50 rat > 5,000 mg/kg
	Hydrotreated Light Distillate LD50 rat > 5,000 mg/kg
	Polypropylene Glycol LD50 rat > 2,000 mg/kg
	Ethoxylated Tall Oil LD50 rat > 6,400 mg/kg
	Aliphatic alcohol LD50 rat > 5,000 mg/kg

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects : Toxic to aquatic life with long lasting effects.

Components

Toxicity to fish : Straight Run Middle Distillate
LC50 Fish: 44 mg/l
Exposure time: 96 h

Hydrotreated Light Distillate
LC50 : > 1,000 mg/l
Exposure time: 96 h

Ethoxylated Tall Oil
LC50 : 7.8 mg/l
Exposure time: 96 h

Aliphatic alcohol
LC50 Fish: 4.9 mg/l
Exposure time: 96 h

Components

Toxicity to daphnia and other aquatic invertebrates : Hydrotreated Light Distillate
EC50 : > 1,000 mg/l
Exposure time: 72 h

Polypropylene Glycol
EC50 Daphnia: 105.8 mg/l
Exposure time: 48 h

Components

Toxicity to algae : Hydrotreated Light Distillate
EC50 : > 1,000 mg/l
Exposure time: 48 h

Components

Toxicity to bacteria : Hydrotreated Light Distillate
> 1,000 mg/l

Persistence and degradability

The organic portion of this preparation is expected to be inherently biodegradable.

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air : 10 - 30%

Water : 30 - 50%
Soil : 30 - 50%

The portion in water is expected to float on the surface.

Bioaccumulative potential

Component substances have a potential to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it is not a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

For Packages Less Than Or Equal To 119 Gallons:

Proper shipping name : PRODUCT IS NOT REGULATED DURING
TRANSPORTATION

For Packages Greater Than 119 Gallons:

Proper shipping name : COMBUSTIBLE LIQUID, N.O.S.
Technical name(s) : Aliphatic hydrocarbon
UN/ID No. : NA 1993
Hazard Class - Primary : COMBUSTIBLE LIQUID
Packing group : III

Air transport (IATA)

Proper shipping name : PRODUCT IS NOT REGULATED DURING
TRANSPORTATION

Sea transport (IMDG/IMO)

Proper shipping name : PRODUCT IS NOT REGULATED DURING
TRANSPORTATION

Section: 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know Act****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

- SARA 311/312 Hazards** : Fire Hazard
Acute Health Hazard
- SARA 302** : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
- SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :**TOXIC SUBSTANCES CONTROL ACT (TSCA)**

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

AUSTRALIA

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

CHINA

All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

EUROPE

The substance(s) in this preparation are included in or exempted from the EINECS or ELINCS inventories

JAPAN

This product contains substance(s) which are not in compliance with the Law Regulating the Manufacture and Importation Of Chemical Substances and are not listed on the Existing and New Chemical Substances list (ENCS).

KOREA

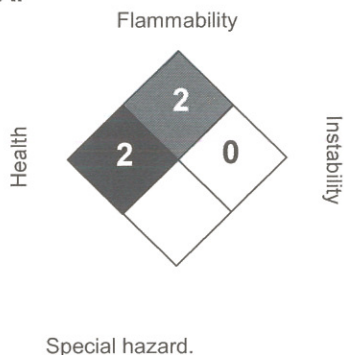
All substances in this product comply with the Toxic Chemical Control Law (TCCL) and are listed on the Existing Chemicals List (ECL)

NEW ZEALAND

All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996, and are listed on or are exempt from the New Zealand Inventory of Chemicals.

PHILIPPINES

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

Section: 16. OTHER INFORMATION**NFPA:****HMIS III:**

HEALTH	2
FLAMMABILITY	2
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date : 03/06/2015
Version Number : 1.0
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

For additional copies of an MSDS visit www.nalco.com and request access.

EC5210A FUEL ANTIOXIDANT

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : EC5210A FUEL ANTIOXIDANT

Other means of identification : Not applicable.

Restrictions on use : Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.

Company :

Nalco Argentina S.R.L., -Victoria Ocampo, 360 Piso 3° - Capital Federal, Buenos Aires, Argentina, C1107AAP, (54) 11 5166-2566
 Ecolab Química Ltda, Rod. Indio Tibirica, 3201 - Bairro do Raffo, Suzano, SP, Brazil, 08655-000, (11) 4745-4700
 Nalco Industrial Services Chile Ltda., Avenida Las Esteras Norte 2341, Quilicura, Santiago, Chile
 Nalco de Colombia Ltda., Calle 18 # 35 - 280, Soledad, Atlantico, Colombia, (57) 5 - 3748887 Ext: 110
 Nalco de México S. de R.L. de C.V., Km 52.5 Carretera México-Toluca, Lerma, Edo. México, Mexico, 52000, (728) 285-0522

Emergency telephone number :

Argentina: Ciquime 0800-222-2933/ 011 4613-1100; Nalco 011-15-5409-6868.
 Brazil: ABIQUIM/PROQUÍMICA: 0800-118270;
 Colombia, Bogotá: 288-6012 (24 hours)
 Colombia, Fuera de Bogotá: 01 800 09 16012 (24 hours)
 Chile: CITUC (56-2) 2635-3800 (24 hours), Nalco (56-2) 2640-2000 / Fax (56-2) 2624-1908
 Mexico SETIQ-ANIQ: 01-800-002-1400 & 01-55-5559-1588 (24 hours)
 USA: 703-527-3887 (Chemtrec, accepts calls by collect - 24 hours)
 Uruguay: 703-527-3887 (Chemtrec, accepts calls by collect - 24 hours); CIQUIME 54-11-46112007

Issuing date : 18.01.2017

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity - oral : Category 3
 Acute toxicity - skin : Category 3
 Skin corrosion/irritation : Category 1C
 Serious eye damage/eye irritation : Category 1
 Skin sensitization : Category 1
 Chronic aquatic toxicity : Category 1

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : Toxic if swallowed.
 Toxic in contact with skin.
 Causes severe skin burns and eye damage.
 Causes serious eye damage.
 May cause an allergic skin reaction.
 Very toxic to aquatic life with long lasting effects.

SAFETY DATA SHEET

EC5210A FUEL ANTIOXIDANT

Precautionary Statements : **Prevention:**
Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Do not take internally. Do not eat, drink or smoke when using this product. Keep away from food. Wash hands before eating. Do not inhale. Use only outdoors or in a well-ventilated area. Do not breathe dust/fume/gas/mist/vapours/spray. No smoking. Wear protective gloves/protective clothing. Contaminated work clothing should not be allowed out of the workplace. Discard contaminated clothing or wash before reuse. Eye wash station and safety shower are necessary. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Avoid release to the environment. For additional information consult MSDS Section 8.

Response:
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/ physician. Rinse mouth. If conscious, washout mouth and give water to drink. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Treat symptomatically. Call a POISON CENTER or doctor/ physician. IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. Wash with plenty of soap and water. Immediately call a POISON CENTER or doctor/ physician. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician. Collect spillage. IN CASE OF FIRE: for extinction use: Foam Carbon dioxide Dry powder Other extinguishing agent suitable for Class B fires For large fires, use water spray or fog, thoroughly drenching the burning material. Water mist may be used to cool closed containers. For additional information consult MSDS Sections 4, 5 and 6.

Storage:
Store in a well-ventilated place. Keep container tightly closed. Keep the containers closed when not in use. Avoid extremes of temperature. Store in suitable labeled containers. Store separately from acids. Store separately from oxidizers. Avoid contact with SO₂ or acidic bisulfite products, which may react to form visible airborne amine salt particles. For additional information consult MSDS Sections 7 and 10.

Disposal:
Dispose of product, waste product and product packaging should follow the Federal, State, Municipal and local current regulation. Consult the environmental official organ if necessary. The classification of waste should be determined according to Brazilian Normative 10004 "Solid waste - Classification." The transport and disposal should be performed by a properly licensed company. Do not reuse container for any purpose. DO NOT DUMP INTO SEWERS, ON THE SOIL OR INTO ANY WATER COURSE. For additional information consult MSDS Section 13.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Substance

Chemical Name	CAS-No.	Concentration: (%)
N,N'-Di-Sec-Butyl-1,4-Phenylenediamine	101-96-2	60 - 100

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

SAFETY DATA SHEET

EC5210A FUEL ANTIOXIDANT

- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
- If swallowed : Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.
- Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Not flammable or combustible.
- Hazardous combustion products : Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) Sulphur oxides Oxides of phosphorus
- Special protective equipment for firefighters : Use personal protective equipment.
- Specific extinguishing methods : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Do not allow contact with soil, surface or ground water.
- Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Do not flush into surface water or sanitary sewer system.

SAFETY DATA SHEET

EC5210A FUEL ANTIOXIDANT

Section: 7. HANDLING AND STORAGE

- Advice on safe handling : Do not ingest. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.
- Conditions for safe storage : Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
- Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Mild steel, Stainless Steel 304, Stainless Steel 316L, Aluminum, Hastelloy C-276, HDPE (high density polyethylene), PVC, PTFE, Perfluoroelastomer
- Unsuitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Copper, Brass, Natural rubber, Buna-N, Nylon, Polyethylene, Polypropylene, Ethylene propylene, EPDM, Neoprene, Plexiglass, Fluoroelastomer, Chlorosulfonated polyethylene rubber, Polytetrafluoroethylene/polypropylene copolymer

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

- Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

- Eye protection : Safety goggles
Face-shield
- Hand protection : Wear the following personal protective equipment:
Standard glove type.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Skin protection : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing
- Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Liquid
- Colour : Dark red
- Odour : Amine
- Flash point : 143 °C, Method: ASTM D 56, Tag closed cup
- pH : no data available

SAFETY DATA SHEET

EC5210A FUEL ANTIOXIDANT

Odour Threshold	:	no data available
Melting point/freezing point	:	POUR POINT: -17 °C
Initial boiling point and boiling range	:	128 °C, (1 mm Hg)
Evaporation rate	:	no data available
Flammability (solid, gas)	:	no data available
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available
Vapour pressure	:	1 mm Hg, (128 °C),
Relative vapour density	:	no data available
Relative density	:	0,94, (15 °C),
Density	:	no data available
Water solubility	:	insoluble
Solubility in other solvents	:	< 0,1 %
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	no data available
Thermal decomposition temperature	:	no data available
Viscosity, dynamic	:	no data available
Viscosity, kinematic	:	no data available
Molecular weight	:	no data available
VOC	:	no data available

Section: 10. STABILITY AND REACTIVITY

Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	None known.
Incompatible materials	:	Avoid contact with SO ₂ or acidic bisulfite products, which may react to form visible airborne amine salt particles. Contact with strong acids (e.g. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) may generate heat, splattering or boiling and toxic vapors. Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.
Hazardous decomposition products	:	Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NO _x) Sulphur oxides Oxides of phosphorus

Section: 11. TOXICOLOGICAL INFORMATION

SAFETY DATA SHEET

EC5210A FUEL ANTIOXIDANT

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes : Causes serious eye damage.

Skin : Toxic in contact with skin. Causes severe skin burns. May cause allergic skin reaction.

Ingestion : Toxic if swallowed. Causes digestive tract burns.

Inhalation : May cause nose, throat, and lung irritation.

Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact : Redness, Pain, Corrosion

Skin contact : Redness, Pain, Irritation, Corrosion, Allergic reactions

Ingestion : Corrosion, Abdominal pain

Inhalation : Respiratory irritation, Cough

Toxicity

Product

Acute oral toxicity : LD50 rat: 271 mg/kg

Acute inhalation toxicity : no data available

Acute dermal toxicity : LD50 rabbit: 2.806 mg/kg

Skin corrosion/irritation : no data available

Serious eye damage/eye irritation : no data available

Respiratory or skin sensitization : no data available

Carcinogenicity : No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive effects : no data available

Germ cell mutagenicity : no data available

Teratogenicity : no data available

STOT - single exposure : no data available

STOT - repeated exposure : no data available

Aspiration toxicity : no data available

Components

Acute inhalation toxicity : N,N'-Di-Sec-Butyl-1,4-Phenylenediamine
LC50 rat: > 0,9 mg/l

Section: 12. ECOLOGICAL INFORMATION

SAFETY DATA SHEET

EC5210A FUEL ANTIOXIDANT

Ecotoxicity

Environmental Effects : Very toxic to aquatic life with long lasting effects.

Product

Toxicity to fish : LC50 Rainbow Trout: 0,13 mg/l
Exposure time: 96 hrs

LC50 Bluegill Sunfish: 0,18 mg/l
Exposure time: 96 hrs

LC50 Fathead Minnow: 0,13 mg/l
Exposure time: 96 hrs

Toxicity to daphnia and other aquatic invertebrates : LC50 Daphnia magna: 1,4 mg/l
Exposure time: 48 hrs

Toxicity to algae : no data available

Persistence and degradability

no data available

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.

If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air : <5%
Water : 10 - 30%
Soil : 70 - 90%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

This preparation or material is not expected to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

Disposal methods : Dispose of product, waste product and product packaging should follow the Federal, State, Municipal and local current regulation. Consult the environmental official organ if necessary. The classification of waste should be determined according to Brazilian Normative 10004 "Solid waste - Classification." The transport and disposal should be performed by a properly licensed company. Do not reuse

SAFETY DATA SHEET

EC5210A FUEL ANTIOXIDANT

container for any purpose. DO NOT DUMP INTO SEWERS,
ON THE SOIL OR INTO ANY WATER COURSE.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (ANTT)

Proper shipping name : CORROSIVE LIQUID, TOXIC, N.O.S
Technical name(s) : N,N-DI-SEC-BUTYL-P-PHENYLENEDIAMINE
UN/ID No. : 2922
Transport hazard class(es) : 8, 6.1
Risk Number : 86
Packing group : III

Air transport (IATA)

Proper shipping name : CORROSIVE LIQUID, TOXIC, N.O.S
Technical name(s) : N,N-DI-SEC-BUTYL-P-PHENYLENEDIAMINE
UN/ID No. : UN 2922
Transport hazard class(es) : 8, 6.1
Packing group : III

Sea transport (IMDG/IMO)

Proper shipping name : CORROSIVE LIQUID, TOXIC, N.O.S
Technical name(s) : N,N-DI-SEC-BUTYL-P-PHENYLENEDIAMINE
UN/ID No. : UN 2922
Transport hazard class(es) : 8, 6.1
Packing group : III
Marine pollutant :

Section: 15. REGULATORY INFORMATION

NATIONAL REGULATIONS, BRAZIL

Registrations and Certifications

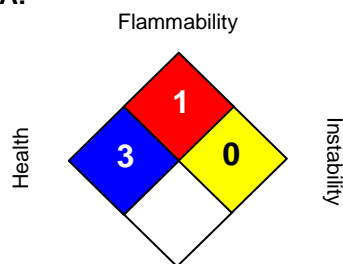
Brazil: Our FISPQ complies with the Brazilian Rule ABNT NBR 14725.

Section: 16. OTHER INFORMATION

SAFETY DATA SHEET

EC5210A FUEL ANTIOXIDANT

NFPA:



Special hazard.

HMIS III:

HEALTH	3*
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

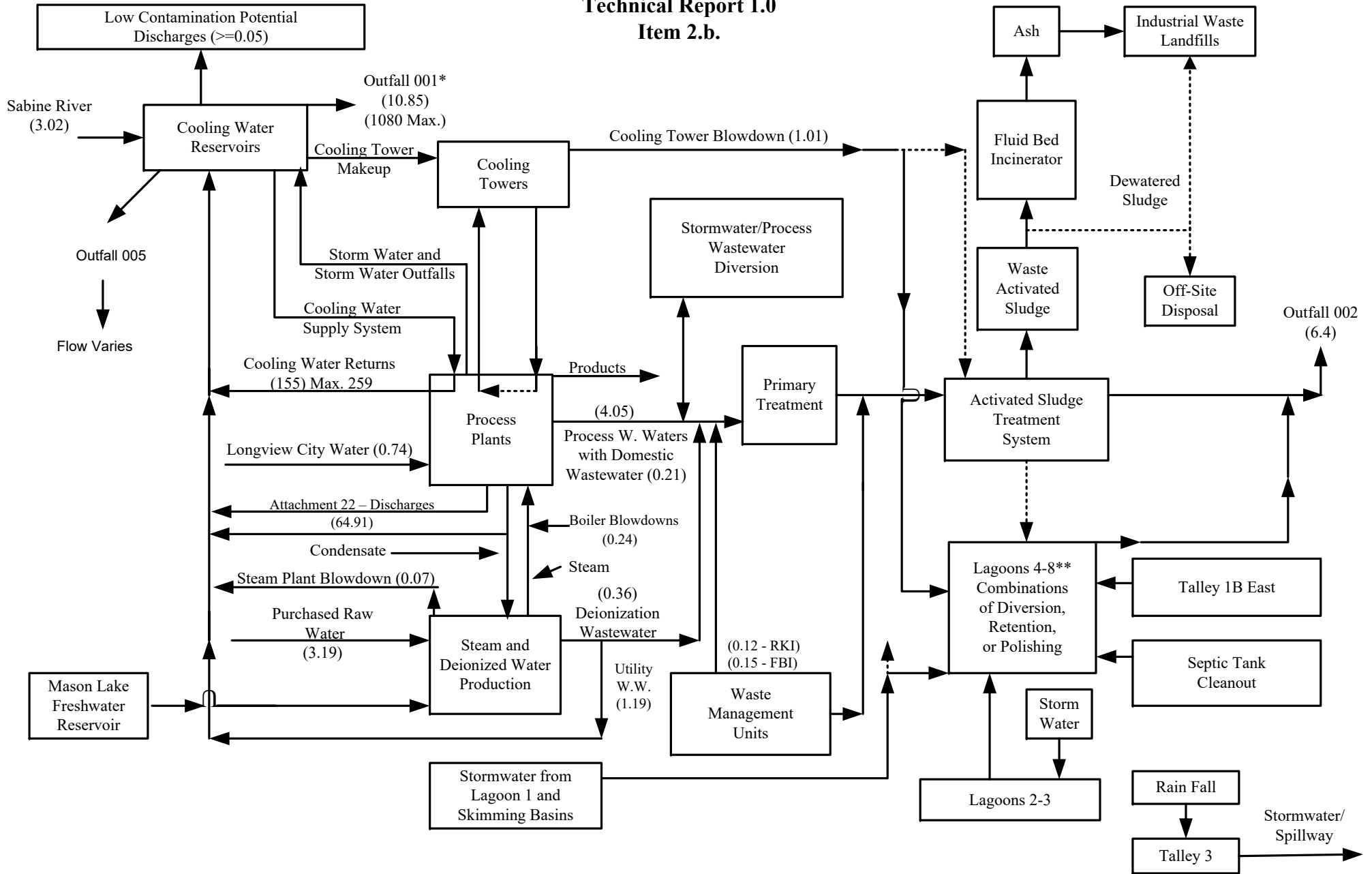
Revision Date : 18.01.2017
Version Number : 1.0
Prepared By : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Flow Schematic

Wastewater Flows Technical Report 1.0 Item 2.b.



LEGEND

Normal Flow Path -
 Alternate Path -

*Outfall 001 and makeup water flows are based on 2013-March 22, 2016 averages.
 () Indicates flow; all flows shown in million gallons per day average flow.
 ** Any or all Lagoons may be used in various combinations and flow to Outfall from Lagoon 8 will vary.

Eastman Chemical Company
Attachment T-1
Technical Report 1.0, Item 1.c.
Materials List

Raw Materials	CAS No.	Intermediate Products	CAS No.
Propane	000074-98-6	Propylene	000115-07-1
Ethane	000074-84-0	Ethylene	74-85-1
Butane	18875-00	Carbon monoxide	000630-08-0
Natural Gas	800614-2	Hydrogen	1333-74-0
Hexene	592-41-6	Propanol	71-23-8
Ammonia	007664-41-7	Butanol	71-36-3
Natural Gasoline	mixture	2-Ethylhexanol	104-76-7
Formaldehyde	50-00-0	Molten Resin	69430-35-9
Hydrochloric Acid	7647-01-0	Molten DSW wax	Westlake Chemical
n-Butyric Acid	107-92-6	Molten Polyethylene	9002-88-4
Acetic Acid	64-19-7	Acetaldehyde	75-07-0
Pyrolysis Gasoline	mixture	Isobutyraldehyde	78-84-2
Methyl Acrylate	96-33-3	Propionaldehyde	000123-38-6
Butyl Acrylate	141-32-2	Ethylene Oxide	000075-21-8
Maleic Anhydride	108-31-6	n-Butyraldehyde	123-72-8
Ethanol	64-17-5	De-butanized Aromatic Concentrate (DAC-C)	69430-33-7, 1330-20-7, 108- 88-3, 100-41-4, 100-42-5
Ethylene	74-85-1		
Propylene	115-07-1		

Final Products	CAS No.
Polyethylene	Westlake Chemical
Isobutyric Acid	79-31-2
Acetaldehyde	75-07-0
Diethylene Glycol Monoethyl Ether (DE)	111-90-0
Ethylene Glycol Monobutyl Ether (EB)	111-76-2
DTB (mixture if di & tri ethylene glycol monobutyl ether), DTE (mixture if di & tri ethylene glycol monoethyl ether) , DTP (mixture if di & tri ethylene glycol monopropyl ether)	143-22-6, 112-34-5
Ethylene Glycol Monopropyl Ether (EP)	2807-30-9
Diethylene Glycol Monopropyl Ether (DP)	6881-94-3
Ethylene Glycol Mono-2-Ethylhexyl Ether (EEH)	1559-35-9, 1559-36-0, 1559-37-1
Diethylene Glycol Monobutyl Ether (DB)	112-34-5
Triethylene Glycol (TEG)	112-27-6
Crude Butadiene	106-99-0, 106-98-9, 115-11-7, 624- 64-6, 106-97-8, 590-18-1
Glycol High Boilers	107-21-1, 111-46-6, 7732-18-5, 112-27-6, 112-60-7

Eastman Chemical Company
Attachment T-1
Technical Report 1.0, Item 1.c.
Materials List

Final Products (continued)	CAS No.
2-Ethylhexanol (2-EH)	104-76-7
n-Propanol	71-23-8
Isobutanol	78-83-1
Neopentyl Glycol (NPG)	126-30-7
Butyraldehyde	123-72-8
Isobutyraldehyde	78-84-2
Ethylene Glycol	107-21-1
2-Ethylhexaldehyde	123-05-7
n-butanol	71-36-3
Acetone	67-64-1
Propionaldehyde	123-38-6
Hydrocarbon Resin (Eastotac™ & Epolene®)	68131-77-1
Methyl Isopropyl Ketone	563-80-4
Ethyl Acetate	141-78-6
Isobutyl Acetate	110-19-0
Isobutyl Isobutyrate (IBIB)	97-85-8
2,2,4-Trimethylpentane-1,3-pentane diol (TMPD™)	144-19-4
2,2,4-Trimethylpentane-1,3-diol Monoisobutyrate (Texanol™)	025265-77-4
2,2,4-Trimethylpentane-1,3-pentane diol Diisobutyrate (TXIB)	6846-50-0
Propionic Acid	79-09-4
3,4 Epoxy-1-Butene	000930-22-3
Pyrolysis Gasoline	68606-10-0
Pyrolysis Tar	64742-90-1
Butylenes	106-98-9, 624-64-6, 115-11-7, 590-18-1, 106-99-0, 106-97-8, 75-28-5
Ethylene	74-85-1
Propylene	115-07-1
Di-isopropyl Ketone	565-80-0
Solvent 85	68476-45-9
Solvent R	None (C9-C12, C14-C16, C18-C20)
Plasticizer H	69430-35-9
Solvent 140	2040-96-2
Crude Heptane	142-82-5, 108-87-2, 108-88-3
Mixed Glycol 90	Varies
Waxes	Westlake Chemical
Amorphous Poly Olefins (Eastoflex™)	9003-07-0 , 9010-79-1
n-butyronitrile	109-74-0
i-butyronitrile	78-82-0
Polypropylene non-maleated	9003-07-0
Polypropylene maleated (Epolene®)	Westlake Chemical

Eastman Chemical Company
Attachment T-1
Technical Report 1.0, Item 1.c.
Materials List

Final Products (continued)	CAS No.
Polyethylene maleated (Epolene®)	Westlake Chemical
Diethylene Glycol	111-46-6
2-Ethylhexaldehyde	123-05-7
Isopropyl Acetate (bought, stored & sold)	108-21-4
N-propyl acetate (bought, stored & sold)	109-60-4
Methyl amyl ketone (bought, stored & sold)	110-43-0
Dibutyl phthalate (bought, stored & sold)	84-74-2
Methyl Isobutyl Ketone (MIBK)	108-10-1
N- butyl acetate (bought, stored & sold)	123-86-4
CTA (Mix of TMPD, TXIB, IBIB & Texanol™)	See CAS above
Solvent MTE	6846-50-0, 25265-77-4, 144-19-4, 78-83-1, 15904-30-0, 3494-69-7
Triethylene Glycol	112-27-6
EEH High Boiler	26468-86-0, 1559-37-1, 1559-36-0, 1559-35-9, 1310-73-2
Glycol Ether High Boilers	112-50-5, 23305-64-8, 143-22-6, 5650-20-4, 23307-36-0, 1559-34-8, 111-90-0, 6881-94-3, 112-34-5, 141-52-6, 6819-41-6, 2372-45-4, 4353-29-1, 1786-94-3
Resin Oil C	68513-69-9, 77-73-6 , 100-42-5 95-13-6, 108-88-3
Tetra Glycols	112-60-7, 112-27-6, 25322-68-3
Acetic Acid	64-19-7
Acetic Anhydride	108-24-7
Ethyl-3-ethoxypropionate (Eastman (TM) EEP)	763-69-9
2-methoxy-1-methylethyl acetate (PM Acetate)	108-65-6
Polypropylene	Flint Hills Resources
Carbon monoxide*, Hydrogen*, Oxygen	Air Liquide
Pelletized Amorphous Olefins	3D Plastics Production
Texas Technologies **	Miscellaneous
Msc. Plant Chemicals	Unknown until needed

* CO & H2 are not produced by reforming, but by oxidation, so 40 CFR, Part 415, Subpart AG is not applicable.

** Eastman uses and develops various chemicals at this location.

Eastman Chemical Company

Attachment T-2

Technical Report 1.0

Item 1.d.

List of Wastewater Treatment Units and Associated Units

		NOR #	Capacity (gal.)
1	Bld 30 Wastewater Catalyst Basin	1	4,730
2	Co-Gen Neutralization Tank (NOR 86483)	5	26,000
3	Bld. 91 Wastewater Catalyst Basin	7	23,870
4	Sanitary Waste Landfill	8	35 Acres
5	Talley Landfill	15	48 Acres
6	Hazardous Waste Landfill	19	11.7 Acres
7	HAc WWT Unit (55F516, 55F517 & 55F518)	20	41,000
8	Bldg 71 (HCC-3B) API Separator	22	15,000
9	Copper Settling Basin	33	1.1 M
10	B-106 Primary Wastewater Treatment System	37	202,821
11	B-107 Activated Sludge Wastewater Treat Plant	39	19,400,000
12	Talley 1A & Area Groundwater Recovery (89TK-1)	15/44	5,000
13	Bld 52TK-35	45	2.8 M
14	Deionized Wastewater Tank 52tk-33	47	42,400
15	Wastewater Decanter Tank 27Tk-154	48	1,200
16	Wastewater Decanter Tank 13Tk-47	49	6,000
17	Sanitary Waste Landfill WaterCollection Tank	53	2,300
18	Hazardous Waste Landfill Leachate Collection Tank	54	2,000
19	Lagoon 4	58	18M
20	Lagoon 5	59	28M
21	Lagoon 6	60	20M
22	Lagoon 7	61	29M
23	Lagoon 8	62	10 M
24	Bld 106 Primary Treatments Systems	79	4 yd. 3
25	Deionized Wastewater Tank 10Tk-51	84	21,200
26	Deionized Wastewater Tank 10Tk-52	85	21,200
27	Bldg 106 Stormwater Tank 1	89	1,290,000
28	Bldg 106 Stormwater Tank 2	90	1,290,000
29	Deionized Wastewater Tank 10Tk-34	91	42,400
30	HOB/WOB Groundwater Recovery tank 117Tk-1	92	2,000
31	Bldg 13 Wastewater Removal Column 13D-20	101	3,500
32	Bldg 55 Wastewater Decanter 55F-515	102	360
33	Bldg 55 Wastewater Concentrator Column 55E-305	103	10,000
34	Bldg 55 Wastewater Stripper 55E-507	104	2,200
35	Bldg 54 Wastewater Tank 54T-80	114	500
36	Bldg 54 (HCC-3) API Separator	115	15,000
37	Bldg 54 (HCC-3A) API Separator	116	15,000
38	Bldg 74 (HCC-4) CPI Separator	117	11,000
39	Bldg 25 API Separator	118	21,000
40	Bld 84 Garage wastewater sumps	126	2,000
41	Westlake Wastewater Sump	137	144,000
42	Bld. 122, Catalyst Reagent Deactivation Basin	138	32,600
43	Bldg 105 Wastewater Tank 105Tk-5	145	10,200
44	Bldg 56 Wastewater Tank 56T-161	146	25,000
45	Bldg 106 Tk-7 Spill collection tank	158	5,264
46	Bld. 55, Acetaldehyde Catalyst Pit No. 1	165	2,700
47	Bld. 55, Acetaldehyde Catalyst Pit No. 1	166	2,700
48	B-35 Wastewater Sump	167	20,200
49	122Tk-215 Hydrolysis Tank	170	1,700
50	Bld 24, Flare knockout wastewater container	173	300
51	Bldg 50 wastewater sump	175	750
52	Wastewater Lift Station Tank 26Tk-86A	178	8,000
53	Wastewater Lift Station Tank 108Tk-61	179	19,000
54	Bldg 62 Groundwater Sump	199	550
55	B-26 Wash Pad Sump	204	6,000
56	Co-Gen Sump	205	22,900
57	Air Liquide Sump (Their NOR)	206	4,480
58	Eastoflex D-4 Sludge Waterwater Tank	206	6,460
59	Bld 26 Washpad	208	6,000
60	Bld 74 Flare Knockout Wastewater	269	6,140

Eastman Chemical Company
Attachment T-3
Technical Report 1.0, Item 1.f.
100-year Flood Determination

All portions of Eastman Chemical Company's, Texas Operations (Eastman) wastewater treatment facilities are located above the 100-year frequency flood level except for the diversions/retention/polishing surface impoundments. The 100-year flood plain level is 263 feet elevation per the C Thomas Koch, Inc. report¹ dated August 26, 2014, which included the use of Freese and Nichols, Inc. reports². Lagoons 4, 5 and 8 which border the Sabine River have a lowest dike elevation of 254 feet. The Tom Koch, Inc. report dated August 26, 2014 was required by our year 2014 RCRA Part B permit renewal application. The Koch study concluded that there is no potential health and ecological impact associated with a washout of the Texas Eastman lagoon system from a major flood event in the Sabine River during a 100-year frequency flood.

Since the May 28, 1997 washout demonstration analysis by C. Thomas Koch, Inc., Lagoons 1-3 have received no process wastewater. Lagoon Number 1 has been emptied of water and the only water entering the facility is by rain fall/runoff. Lagoon Numbers 2 and 3 receive no process wastewaters and only collect rain fall/runoff. Lagoon 2 and Lagoon 3 are RCRA closed. Since, 1990, Lagoons 4, 5 and 8 are used as needed to treat wastewater from the activated sludge treatment plant (ASP), cooling tower blowdown and domestic sewage/septage. Lagoon Numbers 6 and 7 can be used as diversion basins to treat wastewater from the ASP on an "as needed" basis, but they normally remain empty of any water, other than stormwater.

Eastman maintains the dike integrity to reduce the potential for unauthorized discharges or failure of the Lagoon dike structures. Depending on the severity of a 100-year flood, Eastman may take actions to increase the dike height, if feasible, to keep the Lagoons from filling with Sabine River water and then overflowing back to the Sabine River basin. As indicated in the Koch study, releases of wastewater would pose not threat to human health or the environment.

¹ Eastman Chemical Company Washout Analysis, C Thomas Koch, PE. August 26, 2014.

² Eastman Levee Review, Freese and Nichols, Inc., Forth Worth, Texas, August 18, 2014. And, Geotechnical Investigation, Dike Stability, Texas Eastman Company, Longview, Texas, Freese and Nichols, Inc., Forth Worth, Texas, by McClelland Engineers, Ince. Geotechnical Consultants, Houston, Texas, September 1985. Freese – Nichols, May 12, 1997.

Attachment T-5.
 Technical Report 1.0. Item 3a.
 Additional Impoundments

Parameter	Pond # L8	Pond # CB
Use Designation: (T) (D) (C) or (E)	T	T
Associated Outfall Number	002	002
Liner Type (C) (I) (S) or (A)	None	None
Alt. Liner Attachment Reference	N/A	N/A
Leak Detection System, Y/N	N	N
Groundwater Monitoring Wells, Y/N	*	*
Groundwater Monitoring Data Attachment	*Groundwater monitoring program covered under RCRA permit 50043	
Pond Bottom Located Above The Seasonal High-Water Table, Y/N	y	y
Length (ft)	608	220
Width (ft)	278	66
Max Depth From Water Surface (ft), Not Including Freeboard	13.5	8
Freeboard (ft)	≥2	≥2
Surface Area (acres)	3.9	0.33
Storage Capacity (gallons)	10 M	1.1 M
40 CFR Part 257, Subpart D, Y/N	N	N
Date of Construction	1969	c.1975

ATTACHMENT T-7
 Technical Report 1.0
 Item 10b
 Off-site/Third Party Wastes

List of Wastes/Characterization	Volume (gpm) Est. Avg.	Compatibility
1. On-site – INVISTA Longview (captured facility)¹ <ul style="list-style-type: none"> • Domestic wastewater • Process wastewaters • Storm Water 	2 96 Varies	Compatible with Eastman Wastewaters
2. On-site - Eastman Credit Union (captured facility)² <ul style="list-style-type: none"> • Domestic wastewater • Storm Water 	<1 Varies	Compatible with Eastman Wastewaters
3. On-site - Air Liquide Corporation (captured facility)³ <ul style="list-style-type: none"> • Cooling tower blowdown wastewater • Boiler Blowdown wastewater • Domestic wastewater • Storm Water 	100 28 <1 Varies	Compatible with Eastman Wastewaters
4. On-site – Synthomer Adhesive Technologies LLC⁴ (captured facility) <ul style="list-style-type: none"> • Process wastewater • Domestic wastewater • Storm Water 	~1 <1 Varies	Compatible with Eastman Wastewaters
5. On-site - Westlake Longview Corporation⁵ (captured facility) <ul style="list-style-type: none"> • Process wastewater • Domestic wastewater • Storm Water 	175 6 Varies	Compatible with Eastman Wastewaters
6. Off-site - Tyler Terminal – Eastman⁶ Chemical Company, owner <ul style="list-style-type: none"> • Oily water with salts wastewater 	No contributions since 2016	Compatible with Eastman Wastewaters
7. Off-site – Eastman Chemical Company, owner⁷ - Miscellaneous wastewaters from other Eastman Chemical Company off-site operations <ul style="list-style-type: none"> • Process wastewater (organic/inorganic) • Domestic wastewater • Storm Water 	Varies Varies Varies	Compatible with Eastman Wastewaters

Items 1-5, above, are physically located on Eastman Chemical Company (Eastman) owned property. Items 6-7, above, are physically located off-site.

ATTACHMENT T-7
Technical Report 1.0
Item 10b
Off-site/Third Party Wastes

Footnotes:

1. This facility was previously owned by Eastman and then sold to Huntsman Corporation. The facility was sold to Flint Hills Resources, L.P. on August 1, 2007 and is operated by Eastman personnel. Flint Hills Resources, L.P. became Flint Hills Resources Polymers, LLC in November 2010. The facility is now named INVISTA Longview.
2. An Eastman Credit Union facility has been located at this facility since 1979. However, a new banking facility was built at another location on Eastman's property.
3. Air-Liquide Corporation produces synthesis gas (i.e., carbon monoxide, hydrogen and oxygen) for Eastman operational needs. Eastman no longer produces synthesis gas at our closed Synthesis Gas plant.
4. This facility was previously owned by Eastman and sold to Synthomer Adhesives Technologies in 2022.
5. Westlake Longview Corporation, a subsidiary of Westlake Chemical Corporation (Westlake), purchased Eastman facilities on December 1, 2006. Polyethylene Plants 1, 2 & 3 and Epolene Plants 1, 2 & 7 were previously owned by Eastman Ethylene Polymers Company, a subsidiary of Eastman Chemical Company. This plant is operated by Eastman personnel.
6. The Tyler Terminal is a wholly owned subsidiary of Eastman Chemical Company and periodically transports, by truck, oily water with the potential for salts to be in the oily water mixture. Eastman's other process wastewaters have sodium and chloride. These volumes are manageable in Eastman's wastewater system.
7. Eastman may manage organic and inorganic wastewater from other off-site Eastman Chemical Company owned facilities. These wastewaters would have to be compatible with the existing wastewater plant operations and consideration given as to our representations to Texas Commission on Environmental Quality.

Names and Mailing Addresses of Generators Physically Located on Eastman Property:

INVISTA Longview

118 Huntsman Way
Longview, TX 75602

Eastman Credit Union

P.O. Box 7444
Longview, Texas 75607

Air Liquide Corporation

P.O. Box 7817
Longview, Texas 75607

Synthomer Adhesive Technologies, LLC

25435 Harvard Rd

ATTACHMENT T-7
Technical Report 1.0
Item 10b
Off-site/Third Party Wastes

Beachwood, OH 44122

Westlake Longview Corporation

P.O. Box 8388

Longview, Texas 75607

Tyler Terminal (Owner - Eastman Chemical Company)

P.O. Box 2022

Tyler, Texas 75710

Physical Location Address: 2146 NNE Loop 323, Tyler, Texas 75708

Attachment T-8 Contract Laboratory Contact Information
Worksheet 2.0, Item 1.C

a&b Labs
10100 East Freeway Suit 100
Houston, TX 77029
Tel: 713-453-6060

1,2,4,5-Tetrachlorobenzene	Fluorene
1,2,4-Trichlorobenzene	Hexachlorobenzene
1,2-Diphenylhydrazine (as Azobenzene)	Hexachlorobutadiene
1,4 Naphthoquinone	Hexachlorocyclopentadiene
2,4,6-Trichlorophenol	Hexachloroethane
2,4-Dichlorophenol	Indeno(1,2,3-cd)pyrene
2,4-Dimethylphenol	Isophorone
2,4-Dinitrophenol	m- & p-Cresol
2,4-Dinitrotoluene	Naphthalene
2,6-Dinitrotoluene	Nitrobenzene
2-Chloronaphthalene	N-Nitrosodiethylamine
2-Chlorophenol	N-Nitrosodimethylamine
2-Nitrophenol	N-Nitroso-di-n-butylamine
3,3'-Dichlorobenzidine	N-Nitrosodi-n-propylamine
3,4-Benzofluoranthene	N-Nitrosodiphenylamine
4,6-Dinitro-o-cresol	o-Cresol
4-Bromophenyl phenyl ether	Oil and grease
4-Chlorophenyl phenyl ether	p-Chloro-m-cresol
4-Nitrophenol	p-Cresol
Acenaphthene	Pentachlorobenzene
Acenaphthylene	Pentachlorophenol
Anthracene	Phenanthrene
Benzidine	Phenol
Benzo(a)anthracene	Pyrene
Benzo(a)pyrene	Pyridine
Benzo(g,h,i)perylene	2,4,5-Trichlorophenol
Benzo(k)fluoranthene	Ethyl Ether
Benzyl alcohol	Dibenzo(a,h)anthracene
Bis(2-chloroethoxy)methane	Diethyl phthalate
Bis(2-chloroethyl)ether	Dimethyl phthalate
Bis(2-chloroisopropyl)ether	Di-n-Butyl phthalate
Bis(2-ethylhexyl)phthalate	Di-n-octyl phthalate
Butylbenzyl phthalate	Fluoranthene
Chrysene	

SPL
 2600 Dudley Rd
 Kilgore, TX 75662
 903-984-0551

1,1,1-Trichloroethane	Dissolved oxygen	1,2-Trans-dichloroethylene	PCB 1254
1,1,2,2-Tetrachloroethane	<i>E. coli</i> (cfu or MPN/100 mL)	2-Chloroethylvinyl ether	PCB 126
1,1,2-Trichloroethane	Epichlorohydrin	Acrolein	PCB 1260
1,1-Dichloroethene	Ethylbenzene	Aldrin	PCB 169
1,2-Dibromoethane	Ethylene Glycol	butyl acetate	PCB 77
1,2-Dichloroethane	Fluoride	Calcium	PCB 81
1,2-Dichloropropane	Hexane	Chlordane	Potassium
1,3 Butadiene	Lead, total	Chloroethane	Sodium
1,3-Dichloropropene	m-Dichlorobenzene	Cobalt, total	Palladium
4-Methyl 2-Pentanone	Mercury, total	Color (PCU)	Toxaphene
Acetone	Methyl ethyl ketone	Dieldrin	Vanadium
Acetonitrile	Methyl tert-butyl ether (MTBE)	Endosulfan I (alpha)	Zirconium
Acrylonitrile	Nickel, total	Endosulfan II (beta)	4,4'-Isopropylidenediphenol (bisphenol A)
Aluminum, total	Nitrate-Nitrogen Total	Endosulfan sulfate	4,4'-DDD
Ammonia nitrogen	Nitrogen, Total Organic (as N)	Endrin	4,4'-DDE
Antimony, total	Nonylphenol	Endrin aldehyde	4,4'-DDT
Arsenic, total	o-Dichlorobenzene	Ethyl acetate	Abestos
Barium, total	p-Dichlorobenzene	Heptachlor	Dissolved Silicon
Benzene	pH (standard units)*	Heptachlor epoxide	Ethylene glycol monoethyl ether
Beryllium, total	Phosphorus	Heptane	1,2,3,4,6,7,8-HpCDD
Biochemical Oxygen Demand (BOD5)	Selenium, total	Hexachlorocyclohexane (alpha)	1,2,3,7,8-PeCDD
BOD Carbonaceous	Silver, total	Hexachlorocyclohexane (beta)	1,2,3,7,8-PeCDF
Bromodichloromethane	Styrene	Hexachlorocyclohexane (delta)	2,3,4,7,8-HpCDFs
Bromoform	Sulfate	Hexachlorocyclohexane (gamma)	2,3,4,7,8-PeCDF
Cadmium, total	Temperature (°F)*	Iron, total	2,3,7,8-HxCDDs
Carbon disulfide	Tetrachloroethene	Lithium	2,3,7,8-HxCDFs
Carbon tetrachloride	Thallium, total	Nitrate-Nitrite (as N)	2,3,7,8-TCDD
Chemical oxygen demand	Toluene	Molybdenum, total	2,3,7,8-TCDF
Chloride	Total Alkalinity (as CaCO ₃)	Methyl chloride	Acetaldehyde
Chlorobenzene	Total dissolved solids	Methyl bromide	Cesium
Chlorodibromomethane	Total organic carbon	Methanol	Iodine
Chloroform	Total residual chlorine	Magnesium, total	isobutanol
Chromium, hexavalent	Total suspended solids	Manganese, total	Isopropyl alcohol
Chromium, total	Trichloroethene	PCB 1016	Surfactants
Chromium, trivalent	TTHM (Total Trihalomethanes)	PCB 1221	Tert-butanol
Copper, total	Vinyl chloride	PCB 1232	n-butanol
Cyanide, available	Xylenes	PCB 1242	OCDD
Dichloromethane	Zinc, total	PCB 1248	OCDF
			o-phosphate

Eastman Chemical Company
Attachment T-9
Outfalls 001 & 005 Volumes and Percents
Worksheet 1.0, Item 3

Outfalls 001 & 005	Volume MGD	% of Total Flow
Process Wastewaters		
<i>Specific Process Wastewater:</i>		
OCPSF:		
Subpart D	0.31	
Subpart F	1.04	
Subpart G	0.45	
Subpart H	<u>0.02</u>	
Subtotal	1.82	0.82
Cooling Water Returns	63.09	28.52
40 CFR 415, Subpart AW	0.001	0.0003
Other Wastewaters		
Once through cooling waters*** (Maximum ~259 MGD)	155.00	70.07
Low Contamination Potential/ Msc. Process Wastewaters	0.05	0.02
Boiler Blowdowns	0.07	0.03
Utility	1.19	0.54
Total	221.22	100.00

* Flow into reservoir system, but not necessarily discharging to outfalls.

** Also includes metals, process area contaminated rainwater and stormwater & reservoir water supply

*** Estimated circulation rate in Ferguson/Tanyard Reservoirs, not a discharge rate at Outfall 001

**Eastman Chemical Company
Attachment T-10
Outfall 002 Volume & Percent
Worksheet 1.0, Item 3**

Outfall 002	Volume MGD	% of Total Flow
Process Wastewaters		
<i>Specific Process Wastewater:</i>		
Nickel Bearing WW	0.02	0.28
Copper Bearing WW	0.43	6.78
Zinc Bearing WW	0.002	0.03
RKI Incinerator Blowdown	0.12	1.84
FBI Incinerator Blowdown	0.14	2.20
Lagoon 8*	0.24	3.80
Process WW**	3.73	58.25
Subtotal	4.68	73.18
Non-Process Wastewater		
Cooling Tower Blowdown	0.96	14.93
Deionizer Regenerate WW	0.34	5.27
Domestic Wastewater	0.20	3.08
Boiler Blowdowns	0.23	3.54
Subtotal	1.72	26.82
Total	6.40	100.00

*Flow can vary based on ASP needs or needed flow from lagoon.

** Includes Trace Metals

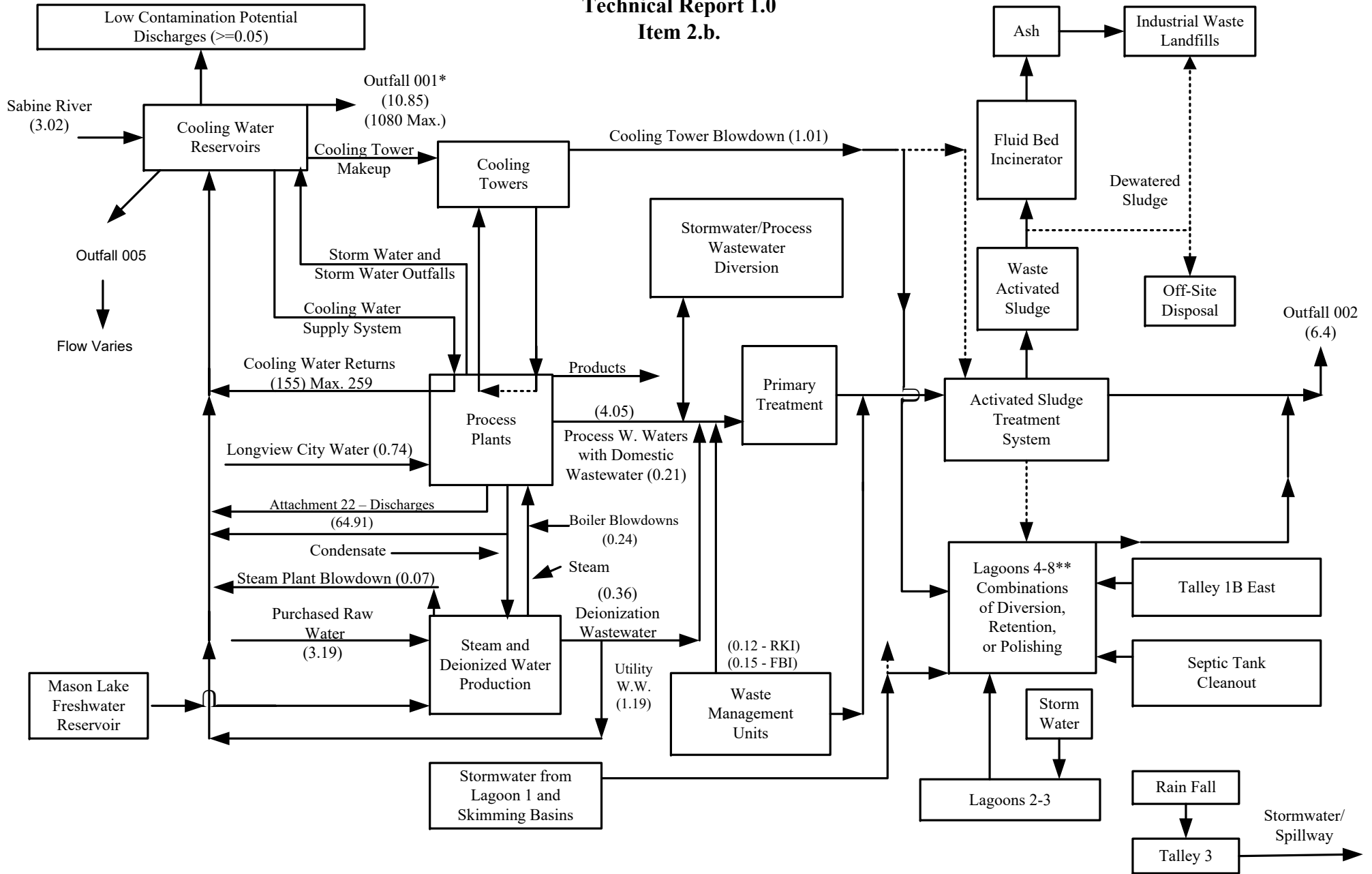
Trace Metals are also present in process wastewater, rainwater and stormwater

Attachment T-11
Worksheet 1.0
OCPSF Manufacturing Data/Appendix A
Section 2.b.

Subcategory	Metal	Process	Metal Bearing Waste Stream Flow, gallons/minute Current
F-Commodity Organic Chemicals	Copper	Acetaldehyde/Oxidation of ethylene with cupric chloride Catalyst (Wacker)	250*
G-Bulk Organic Chemicals	Nickel	n-butanol/Hydrogenation of n butyraldehyde, OXO process	3
G-Bulk Organic Chemicals	Nickel	2-Ethylhexanol/from n-butyraldehyde by Aldol condensation and hydrogenation	3.5
G-Bulk Organic Chemicals	Nickel	Isobutanol/Hydrogenation of isobutyraldehyde, OXO process	2
D-Thermoplastic Resins	Nickel	Petroleum hydrocarbon resins, hydrogenated/hydrogenation of petroleum hydrocarbon resin products	6
H-Specialty Organic Chemicals	Nickel	Neopentyl glycol (2,2-Dimethyl-1,3 propanediol)/Aldol condensation of formaldehyde and isobutyraldehyde and hydrogenation	2
H-Specialty Organic Chemicals	Zinc	Ethyl acetate/Redox reaction (Tschenko) of acetaldehyde	3
<i>* This flow normally contains no copper, but the potential exists for copper to occasionally be present at low parts per million levels.</i>			

Flow Schematic

Wastewater Flows Technical Report 1.0 Item 2.b.



LEGEND

Normal Flow Path -
 Alternate Path -

*Outfall 001 and makeup water flows are based on 2013-March 22, 2016 averages.
 () Indicates flow; all flows shown in million gallons per day average flow.
 ** Any or all Lagoons may be used in various combinations and flow to Outfall from Lagoon 8 will vary.

Candice Calhoun

From: Alex Claiborne (US) <JonathanA.Claiborne@eastman.com>
Sent: Monday, December 8, 2025 11:31 AM
To: Candice Calhoun; Joel Murry (US)
Cc: Michelle Carder (US)
Subject: RE: [EXTERNAL] RE: Application to Renew Permit No. WQ0000471000 [Eastman Chemical Company] - Notice of Deficiency
Attachments: wq0000471000-nod1.pdf; Industrial Discharge Renewal Spanish NORI.docx

Hello Ms. Courville,

I can help, here is the correct email rmurry@eastman.com and I have also added him to this email with your original attachments.

From: Candice Calhoun <Candice.Calhoun@tceq.texas.gov>
Sent: Monday, December 8, 2025 11:27 AM
To: Michelle Carder (US) <michellectarder@eastman.com>
Cc: Alex Claiborne (US) <jonathana.claiborne@eastman.com>
Subject: [EXTERNAL] RE: Application to Renew Permit No. WQ0000471000 [Eastman Chemical Company] - Notice of Deficiency

Some people who received this message don't often get email from candice.calhoun@tceq.texas.gov. [Learn why this is important](#)

CAUTION: External Email

Michelle,

It seems the email provided for Mr. Murry is not correct. Can you please provide a valid email address for Mr. Murry?

Regards,



Candice Courville

License & Permit Specialist
ARP Team | Water Quality Division
Texas Commission on Environmental
Quality
512-239-4312
candice.calhoun@tceq.texas.gov

How is our customer service? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

From: Candice Calhoun
Sent: Monday, December 8, 2025 11:26 AM

To: 'michellectarder@eastman.com' <michellectarder@eastman.com>

Cc: 'murry@eastman.com' <murry@eastman.com>; 'jonathana.claiborne@eastman.com' <jonathana.claiborne@eastman.com>

Subject: Application to Renew Permit No. WQ0000471000 [Eastman Chemical Company] - Notice of Deficiency

Importance: High

Good morning, Ms. Carder,

The attached Notice of Deficiency (NOD) letter dated **December 8, 2025**, requests additional information needed to declare the application administratively complete. Please send complete response no later than **December 22, 2025**.

If you have any questions, please let me know.

Regards,



Candice Courville

License & Permit Specialist

ARP Team | Water Quality Division

Texas Commission on Environmental
Quality

512-239-4312

candice.calhoun@tceq.texas.gov

How is our customer service? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey

Candice Calhoun

From: Joel Murry (US) <rmurry@eastman.com>
Sent: Monday, December 8, 2025 2:27 PM
To: Candice Calhoun
Subject: RE: [EXTERNAL] RE: Application to Renew Permit No. WQ0000471000 [Eastman Chemical Company] - Notice of Deficiency
Attachments: Fig 1 - Lakeport Quad HL.jpg; Fig 2 Lakeport Quad.jpg

Ms. Courville,

The coordinates should be 32°26'16.8"N 94°41'39.1"W or 32.438059, -94.694222.

I've attached a higher resolution USGS map, however it's not 8.5"X11". Please let me know if that is more legible.

I suggest the below changes to the NORI in red below:

Eastman Chemical Company, P.O. Box 7444, Longview, Texas 75607, which owns a plant manufacturing chemicals and plastics, has applied to the Texas Commission on Environmental Quality (TCEQ) to renew Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0000471000 EPA I.D. No. TX0000949) to authorize the discharge of **utility wastewaters, stormwater, miscellaneous wastewaters, and de minimis process wastewater** at an intermittent and flow-variable basis via Outfall 001 and at a volume not to exceed a daily average flow of 6,400,000 gallons per day via Outfall 002, **stormwater, river water, and water from Mason Lake at an intermittent and flow-variable basis via Outfall 004, and utility wastewater, stormwater, miscellaneous wastewater, and de minimis process wastewater at an intermittent and flow-variable basis via Outfall 005**. The facility is located at [**300 Kodak Boulevard**], near the city of Longview, in Gregg County, Texas 75602. The discharge route is from the plant site via Outfall 001 to Long Creek; thence to the Sabine River above Toledo Bend Reservoir; via Outfalls 002 and 005 to an unnamed tributary; thence to the Sabine River above Toledo Bend Reservoir; and via Outfall 004 directly to the Sabine River above Toledo Bend Reservoir.

Regards,

Joel Murry | Eastman
Environmental Specialist
Pronouns: he/him/his
Office: 903.237.6181

From: Candice Calhoun <Candice.Calhoun@tceq.texas.gov>
Sent: Monday, December 8, 2025 11:32 AM
To: Alex Claiborne (US) <JonathanA.Claiborne@eastman.com>; Joel Murry (US) <rmurry@eastman.com>
Cc: Michelle Carder (US) <michellicarder@eastman.com>
Subject: RE: [EXTERNAL] RE: Application to Renew Permit No. WQ0000471000 [Eastman Chemical Company] - Notice of Deficiency

Some people who received this message don't often get email from candice.calhoun@tceq.texas.gov. [Learn why this is important](#)

Perfect, thank you Alex!

Regards,

Candice Calhoun

From: Joel Murry (US) <rmurry@eastman.com>
Sent: Wednesday, December 10, 2025 10:16 AM
To: Candice Calhoun
Subject: RE: [EXTERNAL] RE: Application to Renew Permit No. WQ0000471000 [Eastman Chemical Company] - Notice of Deficiency
Attachments: A2-10400 Core Data Form TPDES Renewal 2025.docx; Easton Quad.pdf; Lakeport Quad.pdf

If that's boiler plate, it is fine with me. The original didn't mention Outfalls 004 and 005 in the first sentences, but are there now. Here is the translation:

Eastman Chemical Company, P.O. Box 7444, Longview, Texas 75607, propietaria de una planta que fabrica productos químicos y plásticos, ha solicitado a la Texas Commission on Environmental Quality (TCEQ) la renovación del Permiso TPDES No. WQ0000471000 (EPA I.D. No. TX0000949) para autorizar la descarga de aguas residuales tratadas y aguas pluviales en volumen intermitente y variable mediante los efluentes 001 y 005; la descarga de aguas residuales tratadas y aguas pluviales en un volumen que no exceda un caudal medio diario de 6,400,000 galones por día mediante el efluente 002; y la descarga de aguas pluviales en un volumen intermitente y variable mediante el efluente 004. La instalación se encuentra en 300 Kodak Boulevard, cerca de la ciudad de Longview, en el condado de Gregg, Texas 75602. La ruta de descarga es desde el sitio de la planta a través del efluente 001 hacia Long Creek; de ahí al río Sabine por encima del embalse Toledo Bend; vía los efluentes 002 y 005 a un afluente sin nombre; de ahí al río Sabine por encima del embalse Toledo Bend; y vía el efluente 004 directamente al río Sabine por encima del embalse Toledo Bend. La TCEQ recibió esta solicitud el 4 de diciembre de 2025. La solicitud de permiso estará disponible para revisión y copia en la Marshall Public Library, Sección de Avisos Públicos, 300 South Alamo Boulevard, Marshall, en el condado de Harrison, Texas, y en la Longview Public Library, Sección de Avisos Públicos, 222 West Cotton Street, Longview, en el condado de Gregg, Texas, antes de la fecha en que este aviso se publique en el periódico. La solicitud y los avisos asociados están disponibles electrónicamente en la siguiente página web: <https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications1>

Este enlace a un mapa electrónico de la ubicación general del sitio o de la instalación se proporciona como una cortesía pública y no forma parte de la solicitud ni del aviso. Para la ubicación exacta, consulte la solicitud. <https://gisweb.tceq.texas.gov/LocationMapper/?marker=-94.6785,32.4287&level=182>

I've attached the updated CDF as well as PDFs of the USGS maps. Please let me know if they're still illegible.

Joel Murry | Eastman

External Use

From: Candice Calhoun <Candice.Calhoun@tceq.texas.gov>
Sent: Wednesday, December 10, 2025 9:53 AM
To: Joel Murry (US) <rmurry@eastman.com>
Subject: RE: [EXTERNAL] RE: Application to Renew Permit No. WQ0000471000 [Eastman Chemical Company] - Notice of Deficiency

You don't often get email from candice.calhoun@tceq.texas.gov. [Learn why this is important](#)

Joel,

After looking into the suggested changes a bit further, I'd like to note that the NORI language intentionally uses the general phrases of 'wastewater and stormwater' to encompass all types. However, the second notice will go into more detail. If you would prefer the first notice to go into more detail, I will need to have our industrial team review it further to approve the requested language. In addition, I also realized that I had left out 'stormwater' as well as left out outfalls 004 and 005 from the notice. I have revised the notice and placed it below. I also highlighted the updated section, for easier review.

APPLICATION. Eastman Chemical Company, P.O. Box 7444, Longview, Texas 75607, which owns a plant manufacturing chemicals and plastics, has applied to the Texas Commission on Environmental Quality (TCEQ) to renew Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0000471000 (EPA I.D. No. TX0000949) to authorize the discharge of treated wastewater and stormwater at an intermittent and flow-variable volume via Outfalls 001 and 005; the discharge of treated wastewater and stormwater at a volume not to exceed a daily average flow of 6,400,000 gallons per day via Outfall 002; and the discharge of stormwater at an intermittent flow-variable volume via Outfall 004. The facility is located at 300 Kodak Boulevard, near the city of Longview, in Gregg County, Texas 75602. The discharge route is from the plant site via Outfall 001 to Long Creek; thence to the Sabine River above Toledo Bend Reservoir; via Outfalls 002 and 005 to an unnamed tributary; thence to the Sabine River above Toledo Bend Reservoir; and via Outfall 004 directly to the Sabine River above Toledo Bend Reservoir. TCEQ received this application on December 4, 2025. The permit application will be available for viewing and copying at Marshall Public Library, Public Notice Section, 300 South Alamo Boulevard, Marshall, in Harrison County, Texas and at Longview Public Library, Public Notice Section, 222 West Cotton Street, Longview, in Gregg County, Texas prior to the date this notice is published in the newspaper. The application and associated notices are available electronically at the following webpage:

<https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications>.
This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For the exact location, refer to the application.

<https://gisweb.tceq.texas.gov/LocationMapper/?marker=-94.6785,32.4287&level=18>

Please let me know if there's any additional questions or concerns.

In addition, the Spanish translated NORI, in a Microsoft Word document is still needed. This is the final item needed for the NOD.

Regards,

Candice Calhoun

From: Joel Murry (US) <rmurry@eastman.com>
Sent: Thursday, December 11, 2025 2:19 PM
To: Candice Calhoun
Subject: RE: [EXTERNAL] RE: Application to Renew Permit No. WQ0000471000 [Eastman Chemical Company] - Notice of Deficiency
Attachments: WQ0000471000 Spanish NORI.docx

Ms. Courville,

Please see the attached Spanish NORI.

Also, in translating I realized there's an issue with the English. The plant is just outside the city of Longview which is in Gregg County, however the plant itself is located in Harrison County.

The facility is located at 300 Kodak Boulevard, near the city of Longview, in **Harrison** County, Texas 75602.

Joel Murry | Eastman

External Use

From: Candice Calhoun <Candice.Calhoun@tceq.texas.gov>
Sent: Thursday, December 11, 2025 10:44 AM
To: Joel Murry (US) <rmurry@eastman.com>
Subject: RE: [EXTERNAL] RE: Application to Renew Permit No. WQ0000471000 [Eastman Chemical Company] - Notice of Deficiency

Joel,

The CDF and USGS maps provided are sufficient. Additionally, the translated portion should be provided in the Microsoft Word document originally provided. I have attached the document to this email.

If you have any additional questions, please let me know.

Regards,



TCEQ Core Data Form

For detailed instructions on completing this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. Reason for Submission (If other is checked please describe in space provided.)		
<input type="checkbox"/> New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)		
<input checked="" type="checkbox"/> Renewal (Core Data Form should be submitted with the renewal form)		<input type="checkbox"/> Other
2. Customer Reference Number (if issued)	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number (if issued)
CN 601214406		RN 100219815

SECTION II: Customer Information

4. General Customer Information		5. Effective Date for Customer Information Updates (mm/dd/yyyy)		12/5/2025	
<input type="checkbox"/> New Customer		<input checked="" type="checkbox"/> Update to Customer Information		<input type="checkbox"/> Change in Regulated Entity Ownership	
<input type="checkbox"/> Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)					
<i>The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).</i>					
6. Customer Legal Name (If an individual, print last name first: eg: Doe, John) <i>If new Customer, enter previous Customer below:</i>					
Eastman Chemcial Company					
7. TX SOS/CPA Filing Number		8. TX State Tax ID (11 digits)		9. Federal Tax ID (9 digits)	
9719306		16215393592		621539359	
10. DUNS Number (if applicable)		39108279			
11. Type of Customer:		<input checked="" type="checkbox"/> Corporation		<input type="checkbox"/> Individual	
Government: <input type="checkbox"/> City <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> Local <input type="checkbox"/> State <input type="checkbox"/> Other		<input type="checkbox"/> Sole Proprietorship		Partnership: <input type="checkbox"/> General <input type="checkbox"/> Limited	
12. Number of Employees		<input type="checkbox"/> 0-20 <input type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input checked="" type="checkbox"/> 501 and higher		13. Independently Owned and Operated?	
				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
14. Customer Role (Proposed or Actual) - as it relates to the Regulated Entity listed on this form. Please check one of the following					
<input type="checkbox"/> Owner		<input type="checkbox"/> Operator		<input checked="" type="checkbox"/> Owner & Operator	
<input type="checkbox"/> Occupational Licensee		<input type="checkbox"/> Responsible Party		<input type="checkbox"/> VCP/BSA Applicant	
				<input type="checkbox"/> Other:	
15. Mailing Address:	PO Box 7444				
	City	Longview	State	TX	ZIP
				75607	ZIP + 4
					7444
16. Country Mailing Information (if outside USA)			17. E-Mail Address (if applicable)		
18. Telephone Number		19. Extension or Code		20. Fax Number (if applicable)	
(903) 237-5000				() -	

SECTION III: Regulated Entity Information

21. General Regulated Entity Information (If 'New Regulated Entity' is selected, a new permit application is also required.)	
<input type="checkbox"/> New Regulated Entity <input checked="" type="checkbox"/> Update to Regulated Entity Name <input type="checkbox"/> Update to Regulated Entity Information	
<i>The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).</i>	
22. Regulated Entity Name (Enter name of the site where the regulated action is taking place.)	
Eastman Chemical Company	

23. Street Address of the Regulated Entity: (No PO Boxes)	300 Kodak Blvd						
	City	Longview	State	TX	ZIP	75602	ZIP + 4
24. County	Harrison						

If no Street Address is provided, fields 25-28 are required.

25. Description to Physical Location:							
26. Nearest City	State			Nearest ZIP Code			
<i>Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).</i>							
27. Latitude (N) In Decimal:	32.438059			28. Longitude (W) In Decimal:	-94.694222		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds		
32	26	16.8	94	41	39.1		
29. Primary SIC Code (4 digits)	30. Secondary SIC Code (4 digits)	31. Primary NAICS Code (5 or 6 digits)	32. Secondary NAICS Code (5 or 6 digits)				
2869	2821	325199	325211				
33. What is the Primary Business of this entity? (Do not repeat the SIC or NAICS description.)							
Plant manufacturing chemicals and plasti							
34. Mailing Address:	Eastman Chemical Company						
	PO BOX 7444						
	City	Longview	State	TX	ZIP	75607	ZIP + 4
35. E-Mail Address:							
36. Telephone Number			37. Extension or Code		38. Fax Number (if applicable)		
(903) 237-5000					() -		

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

<input type="checkbox"/> Dam Safety	<input type="checkbox"/> Districts	<input type="checkbox"/> Edwards Aquifer	<input type="checkbox"/> Emissions Inventory Air	<input type="checkbox"/> Industrial Hazardous Waste
<input type="checkbox"/> Municipal Solid Waste	<input type="checkbox"/> New Source Review Air	<input type="checkbox"/> OSSF	<input type="checkbox"/> Petroleum Storage Tank	<input type="checkbox"/> PWS
<input type="checkbox"/> Sludge	<input type="checkbox"/> Storm Water	<input type="checkbox"/> Title V Air	<input type="checkbox"/> Tires	<input type="checkbox"/> Used Oil
<input type="checkbox"/> Voluntary Cleanup	<input checked="" type="checkbox"/> Wastewater	<input type="checkbox"/> Wastewater Agriculture	<input type="checkbox"/> Water Rights	<input type="checkbox"/> Other:
WQ0000471000				

SECTION IV: Preparer Information

40. Name:	Rucker Murry	41. Title:	Environmental Representative
42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(903) 237-6181		() -	rmurry@eastman.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

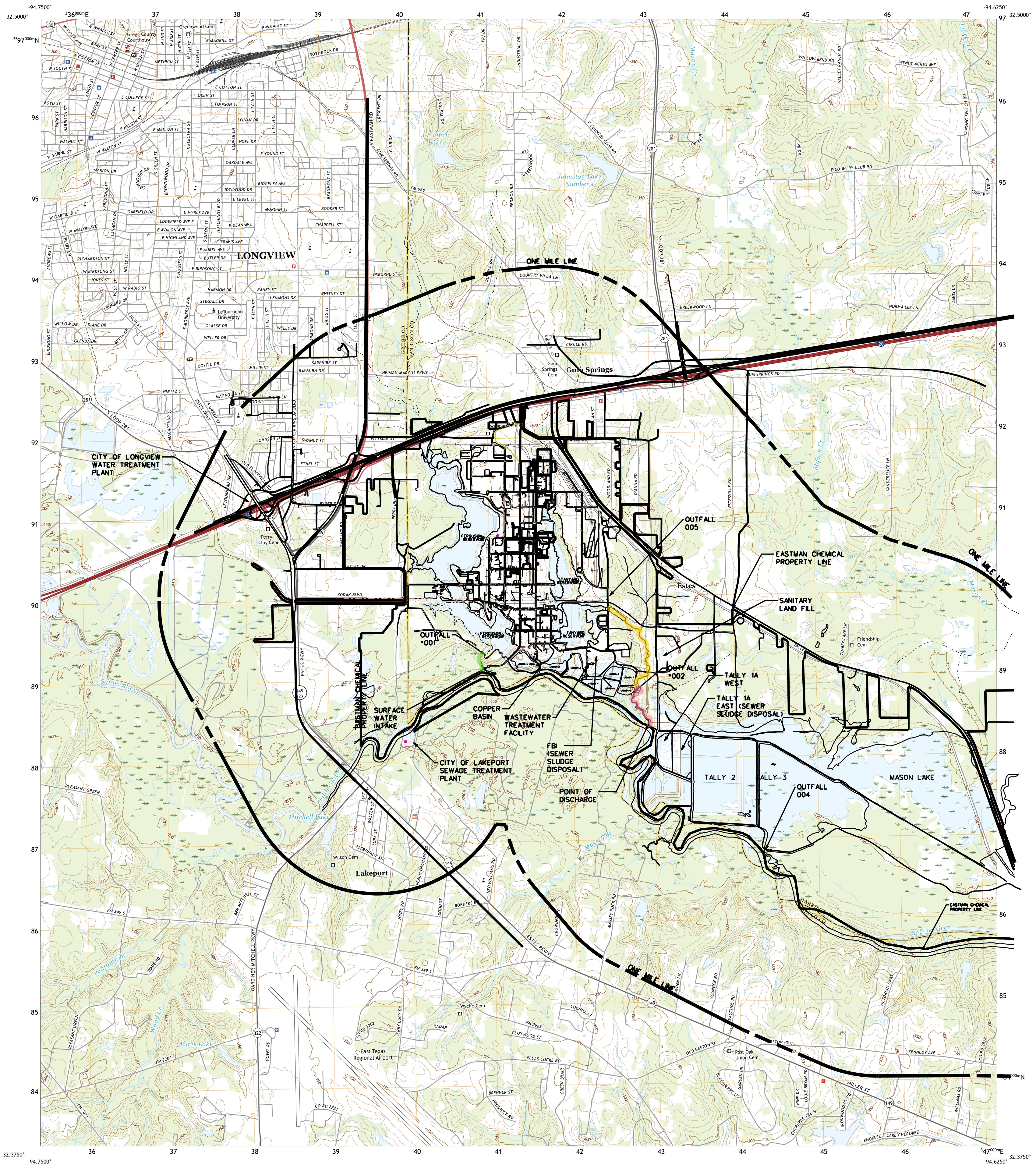
Company:	Eastman Chemical Company	Job Title:	Director, Ethylene Products Dept
Name (In Print):	Eriik Rowland	Phone:	(903) 237- 3753
Signature:		Date:	



U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY



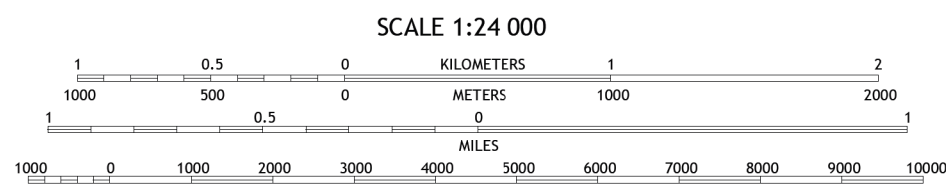
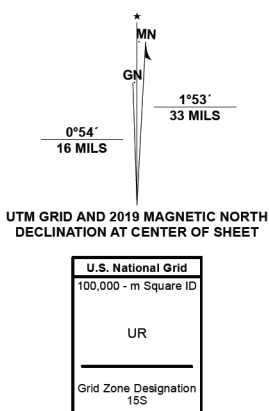
LAKEPORT QUADRANGLE
TEXAS
7.5-MINUTE SERIES



Produced by the United States Geological Survey

North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1000-meter grid universal Transverse Mercator, Zone 15S
This map is not a legal document. Boundaries may be
generalized for this map scale. Private lands within government
reservations may not be shown. Obtain permission before
entering private lands.

Imagery:.....NAIP, September 2016 - November 2016
Roads:.....U.S. Census Bureau, 2015 - 2016
Names:.....GNS, 1979 - 2022
Hydrography:.....National Hydrography Dataset, 2004 - 2022
Contours:.....National Elevation Dataset, 2019
Boundaries:.....Multiple sources; see metadata file, 2019 - 2021
Wetlands:.....FWS National Wetlands Inventory Not Available



QUADRANGLE LOCATION

1	2	3
4	5	6
7	8	9

ADJACENT QUADRANGLES

- White Oak
- Longview Heights
- Haltomville
- Kilgore NE
- Easton
- Kilgore SE
- Haltomville
- Tatum

ROAD CLASSIFICATION

Expressway	Local Connector
Secondary Hwy	Local Road
Ramp	4WD
Interstate Route	US Route
	State Route

LAKEPORT, TX
2022

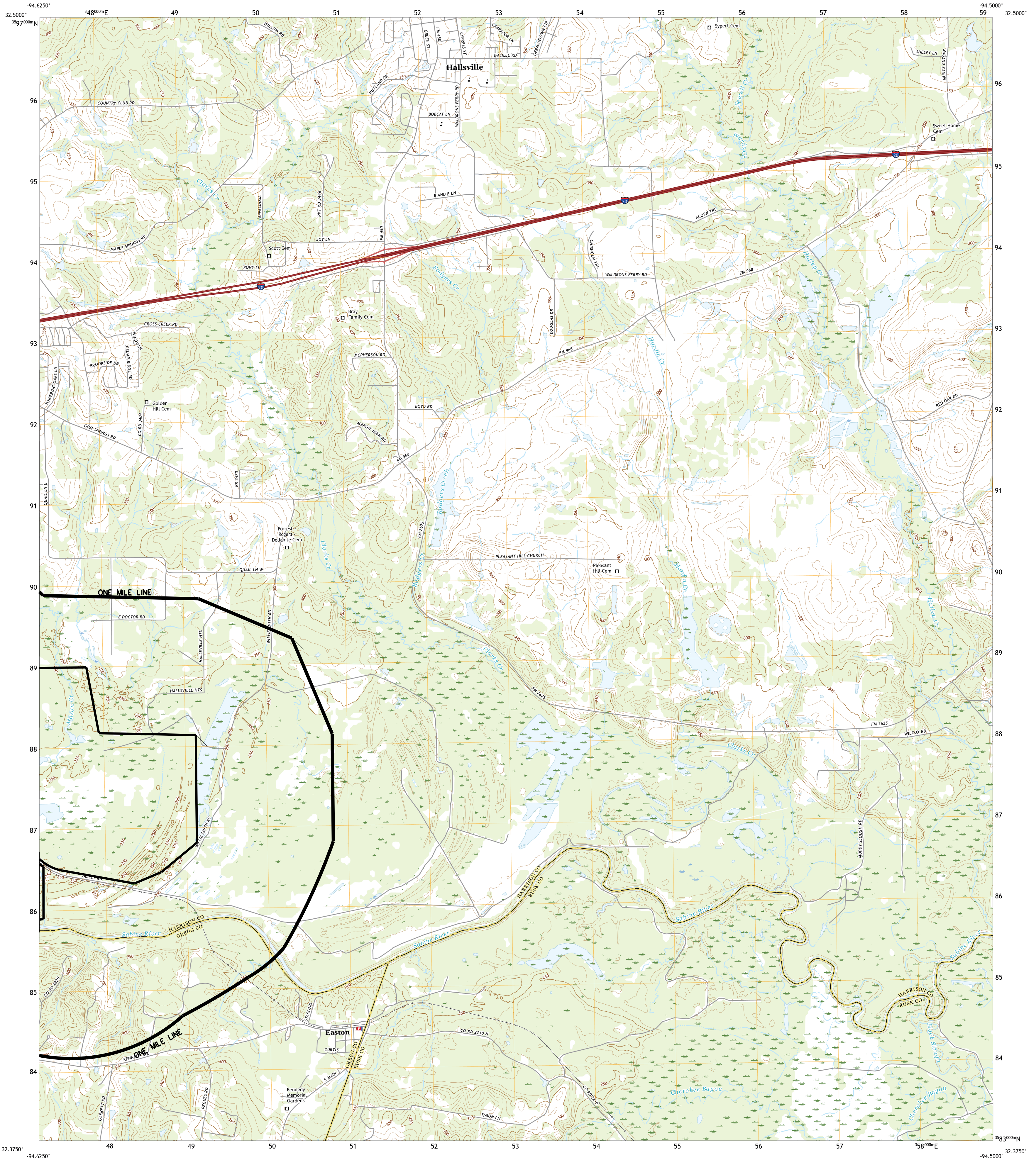




U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

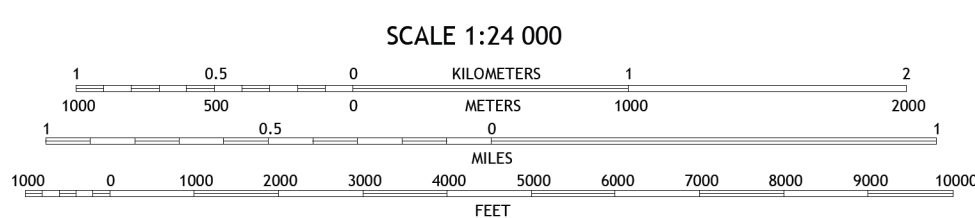
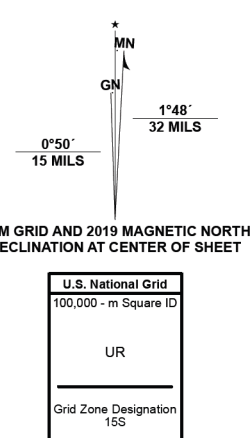


EASTON QUADRANGLE
TEXAS
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid (Universal Transverse Mercator, Zone 15S)
This map is not a legal document. Boundaries may be
generalized for this map scale. Private lands within government
reservations may not be shown. Obtain permission before
entering private lands.

Imagery: N.A.I.P., September 2016 - November 2016
Roads: U.S. Census Bureau, 2015 - 2018
Names: GNS, 1979 - 2022
Hydrography: National Hydrography Dataset, 2004 - 2022
Contours: National Elevation Dataset, 2019
Boundaries: Multiple sources; see metadata file 2019 - 2021
Wetlands: FWS National Wetlands Inventory Not Available



QUADRANGLE LOCATION

1	2	3
4	5	6
7	8	9

ADJOINING QUADRANGLES

ROAD CLASSIFICATION

Expressway
Secondary Hwy
Ramp

Local Connector
Local Road
AND
US Route
State Route

EASTON, TX
2022

