

**DUST CONTROL PLAN  
FACILITY DEMOLITION**

**FOR THE  
EXIDE TECHNOLOGIES FRISCO RECYCLING CENTER  
FRISCO, TEXAS**

**PREPARED BY:**

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Round Rock, Texas 78664  
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**AND**

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Independence, Kansas 67301  
(620) 331-1200**

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**REVISION 2**

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## **1.0 INTRODUCTION**

Remediation Services, Inc. (RSI) and Pastor, Behling & Wheeler, LLC (PBW) have prepared this Dust Control Plan (DCP) to identify the measures that will be taken to reduce the potential for particulate emissions associated with demolition activities at Exide Technologies' Frisco Recycling Center. Prior to demolition, decontamination of the facility is expected to significantly reduce the amount of dust and dust-producing material present. This DCP will be implemented in conjunction with the Air Monitoring Plan prepared for the demolition activities, which describes the air monitoring activities to be performed during the work.

The purpose of this plan is to identify the steps that will be taken to reduce the potential for particulate emissions during demolition activities. The plan includes activity-specific dust control criteria and dust suppression procedures. Best management practices (BMPs) will be implemented throughout the project. BMPs include wetting active demolition areas, minimizing or ceasing activity during periods of high wind (greater than 20 miles per hour), wetting paved areas, wetting unpaved areas, application of dust suppressant materials as well as covering stockpiles. The DCP provides specific information about the generation and control of dust emissions during the demolition of facilities, stockpiling of waste/debris materials, and other activities associated with the demolition activities. This plan is to be used in conjunction with the Decontamination and Demolition Work Plan, Site Health and Safety Plan, and the Air Monitoring Plan developed for the demolition activities. The following sections detail potential dust sources and dust control means and methods.

### **1.1 Project Overview**

The overall project consists of the decontamination and demolition of numerous buildings and associated aboveground piping and ancillary equipment in the former smelter operations area (the Site). The Site is comprised of the furnace buildings, oxide building, battery breaker building, maintenance building, slag stabilization building, waste water treatment building and the crystallizer buildings. The support equipment to be decontaminated and demolished includes eighteen bag houses, an above ground diesel fuel storage tank, a cooling tower, aboveground storage tanks associated with a stormwater pond and waste water treatment facility, storage tanks associated with the crystallizer and other additional ancillary piping, conduit, and equipment.

Control of dust will be a high priority during the project. Demolition activities that have the potential to generate dust include truck traffic; facility demolition; loading, hauling and placement of salvage, debris, and waste; and the use of debris/waste stockpiles. Demolition work areas within the overall Site will be established based on the active demolition activities.

**1.2 Wind Monitoring and Dust Prevention Team**

The following team personnel (RSI employees) have the authority to implement additional dust control provisions and stop work provisions based on the air monitoring program described herein. These team members are also responsible for maintenance and revisions of the plan.

**Table 1. Air Monitoring and Dust Prevention Team**

Employee Name	Employee Title	Designated Air Monitoring Program Responsibility
Bryan Mecom	Project Manager, RSI	On-site project manager responsible to insure Dust Control and Air Monitoring Plans are followed by all project team members.
John Gillman II	Air Monitoring Technician, RSI	Responsible for wind speed and direction monitoring and data recordation; and setup, calibration, maintenance, monitoring, and data recordation for the E-BAM portable particulate monitors. Also responsible for collecting air samples as described in the Perimeter Air Monitoring Plan.
John Gillman	Principal in Charge, RSI	Senior management authority; provide corporate support to ensure availability of necessary resources to maintain compliance with this plan.
Dan Roth	Director of Corporate Health and Safety, RSI	Qualified Individual; review and modify the plan to keep it current; ensure proper record keeping; ensure air monitoring program action level and stop work level requirements are implemented.

## 2.0 DUST CONTROL

Control of dust will be a high priority during demolition activities. The mechanisms for dust control will include the use of water trucks with a spray bar and spray hose(s). In addition, one or more large area misters (e.g., Dust Boss DB 60 with oscillation or equivalent equipment) will be utilized as an airborne dust wet suppression system to ensure full, overlapping coverage of active demolition work areas, mitigating fugitive emissions. The airborne dust wet suppression system resembles a snow making machine and can cover a large area (approximately ½-acre per machine) with a fine mist of water, effectively controlling dust. Descriptive literature on the Dust Boss DB 60 is included in Appendix A. Only potable water will be used for dust control purposes.

Proactive controls will be instituted to reduce the amount of dust generation during Site activities, including enforcement of low speed limits for vehicular traffic, decontamination of trucks leaving the Site, and height limits for debris/waste stock piles.

If Site conditions require increased dust suppression, emulsifiers or surfactants may be added to improve the “wettability” of water sprays, and paper mulch mixed with a tackifier may be used on waste/debris stockpiles. The additional dust control measures to be used are described in Section 3.0 and information on surfactants and paper mulch materials that may be used for these control measures is provided in Appendix B.

If the sustained wind speed (the wind speed obtained by averaging the measured values over a one minute period) exceeds 20 miles per hour, it is a “high wind condition”. When there is a high wind condition, all active facility demolition and debris/waste loading and placement must cease until the sustained wind speed declines to 20 miles per hour or lower. Non dust-producing activities (equipment maintenance, etc.) may still be conducted during these periods.

### 2.1 TRAINING OF PERSONNEL

RSI will implement a dust control training program for all Site personnel. This training program will review the potential sources of dust, individual responsibilities, and actions for controlling dust as described in this plan. The training will emphasize the importance of dust control to the overall success of the demolition activities and familiarize Site personnel with the air monitoring

requirements and appropriate dust control procedures that must be adhered to in accordance with this plan to minimize dust generation.

## **2.2 INSPECTION AND MAINTENANCE**

Dust suppression equipment will be inspected at least once a week and properly maintained. RSI will maintain records of the weekly inspections.

**3.0 POTENTIAL DUST GENERATION ACTIVITIES AND PROPOSED CONTROLS**

Demolition activities will have the potential to generate emissions in the form of fugitive dust. Dust control methods will vary based on the activities occurring at the Site. Dust control methods are summarized by source below. Table 3-1 describes the activities to be conducted during the demolition activities which have the potential to generate dust and the respective dust control measures.

**Table 3-1. Potential Dust Generation Activities and Proposed Control**

Activity	Proposed Controls
General Dust Suppression - All Activities	Use of airborne dust wet suppression system during operating hours for dust generating activities and otherwise as needed. Water spray/mist to wet work areas prior to beginning work and as a supplemental system. Adjust demolition activities. Suspend work under high wind conditions until sustained wind speed is below 20 mph.
Truck Traffic	Wetting unpaved and paved haul roads during working hours.
Facility Demolition	Use of airborne dust wet suppression system. Water spray/mist to wet work areas prior to beginning work and as a supplemental system, Adjust demolition activities. Suspend work under high wind conditions.
Demolition Debris/Waste Stockpiling	Use of airborne dust wet suppression system. Water spray/mist work area prior to beginning work and as a supplemental system. Cover stockpiles at the end of each day and when not in active use.
Demolition Debris/Waste/Salvage Loading, Hauling, and Placement	Use of airborne dust wet suppression system. Water spray mist work area prior to beginning work and a as a supplemental system.

**3.1 Dust Suppression Measures**

**3.1.1 Visible Dust**

If visible dust is present in the demolition work area, increased wetting of the area using water trucks and spray misters will be implemented. If visible dust is observed leaving the active



demolition work area, work will stop and additional dust control measures will be implemented. These additional dust control measures may include:

- Increased wetting/misting of demolition work areas
- Adding surfactant to the water used for dust control
- Adjusting the rate/speed and/or quantity of equipment in the demolition work areas

### 3.1.2 Particulate Take Action Levels

If the thirty-minute (30-minute) average  $PM_{10}$  concentration from the downwind monitors exceeds the applicable Take Action Level set forth in Table 1 of the Air Monitoring Plan, RSI will immediately implement increased dust suppression activities. These increased dust suppression adjustment activities may include, but are not limited to the following:

- Increased wetting/misting of demolition work area(s)
- Adding surfactant to the water used for dust control
- Applying temporary cover (paper mulch with tackifier) to areas not being actively worked
- Adjusting the rate/speed and/or quantity of equipment in the demolition work area(s)
- Covering active stockpiles with plastic sheeting or tarps during high wind

### 3.1.3 Particulate Stop Work Levels

If the one-hour (60-minute) average or thirty-minute (30-minute) average  $PM_{10}$  concentration from the downwind monitors exceeds the applicable Stop Work Level set forth in Table 1 of the Air Monitoring Plan, RSI will immediately stop all facility demolition and debris/waste loading and placement work. During the work stoppage period (minimum 15 minutes), RSI must make dust suppression adjustments to reduce airborne particulate matter concentrations below the Take Action Level concentration for particulate. The dust suppression adjustment activities may include, but are not limited to the following:

- Increased wetting/misting of demolition work area(s)
- Adding surfactant to the water used for dust control
- Applying temporary cover (paper mulch with tackifier) to areas not being actively worked
- Adjusting the rate/speed and/or quantity of equipment in the work area(s)

- Covering active stockpiles with plastic sheeting or tarps during high wind
- Stopping specific dust-generating activities until wind directions and/or wind speeds are more conducive to reduced dust levels
- Mobilize additional dust suppression equipment and initiate its use

### **3.2 Facility Demolition Activities**

Dust control measures will include water spraying/misting to control dust during facility demolition activities. Water to be utilized for dust suppression will be potable municipal water supplied by a fire hydrant located on the Exide property. Water to the hydrant is supplied through the City of Frisco Municipal Water System.

Water trucks will be filled at that on-site water loading area and sent to active facility demolition work areas for dust suppression. Facility demolition activities that are capable of generating dust are not permitted to continue when the water truck is cycling for additional water. The airborne dust wet suppression system will be operated during active facility demolition periods as needed.

No wrecking balls or explosives will be used to demolish any portion of the buildings or structures.

If there is a high wind condition, all building and structure demolition work will cease until the sustained wind speed decreases to less than 20 miles per hour.

Bulk load out of loose salvage or waste material may require the material to be pre-wetted or sprayed as loaded to inhibit fugitive dust emissions.

### **3.3 Traffic – General**

Vehicle travel on unpaved access roads will be limited to 10 miles per hour. Project personnel are required to obey posted speed limits to prevent wind turbulence and associated dust generated at higher vehicle and equipment velocities. Off road travel on unimproved roads will be limited to construction equipment, support vehicles and material delivery trucks.

Unpaved and paved roads will be wetted using a water truck during working hours as appropriate to minimize dust formation without creating runoff or tracking issues.

### **3.4 Traffic – Employee Vehicles**

All project vehicles will enter the Site from the east or north construction entrances and park in the designated parking area on the east side of the facility. No private vehicles will be allowed into the Site.

### **3.5 Traffic – Off-Site Transport Vehicles and Support Vehicles**

The only traffic that will be allowed into the Site is support vehicles and trucks that are removing materials from the Site or delivering materials to the Site. A designated entrance and exit will be established and all other access to the Site blocked using safety fence and/or barricades. Signs will be installed identifying the Site entrances and exits. Traffic will follow marked traffic routes to and from the designated demolition work area(s).

### **3.6 Traffic – Material Track Out**

Track-out of loose materials will be controlled by decontaminating vehicles before they exit the Site. The exterior of vehicles will be decontaminated as required to remove any waste materials on the exterior of the vehicle. The vehicle decontamination area will be established in an area where the decontamination fluids can be collected and the vehicles can exit the Site over clean pavement. The decontamination area will be located at the egress from the Site. Any visible track-out on a paved public road at any location where vehicles exit the Site will be removed. Removal will be accomplished using brooms, wet sweeping, a vacuum device or a combination of these BMPs as needed.

All vehicles that are used to transport solid bulk material and that may produce visible emissions from the load will be equipped with a tarp cover. These vehicles will be decontaminated as described above and tarped prior to exiting the decontamination area. Site decontamination personnel will be responsible for inspecting all vehicles exiting the Site.

### **3.7 Material and Debris Stockpiles**

Fugitive dust emissions from demolition materials or other debris storage piles will be controlled using temporary covers, water sprays, and/or wind breaks. Controls for dust mitigation during debris or waste stockpiling include a water spray/mist from a water truck prior to work beginning and as a supplemental system, operation of the airborne dust wet suppression system and covering stockpiles. The height of stockpiles will be kept to a minimum ( $\leq 8$  feet), with a maximum volume of 50 cubic yards each. The lateral extent of each stock pile will be no greater than 25 feet by 25 feet. Each stockpile will be covered with 6 mil (or thicker) poly sheeting and weighted down by sandbags at the end of each day and when the stockpile is not in active use.

### **3.8 Material and Debris Loading, On-Site Transportation and Placement**

Controls for dust mitigation during material and debris loading will include a water mist/spray during loading and operation of the airborne dust wet suppression system if necessary. Each truck or container will be covered with a tarp immediately upon loading and at the end of each day if the truck or container is to remain on-site overnight.

Each truck will be decontaminated at the designated decontamination area prior to transport to the on-site landfill. A decontamination area will be constructed at the on-site landfill and trucks leaving the landfill area will be decontaminated prior to leaving to prevent track-out onto paved roadways.

A water truck will be stationed at the on-site landfill during the placement and spreading of the demolition debris or waste in the on-site land fill. The water truck will be used to wet the material as it is being dumped or spread. Air monitoring of this area will be conducted utilizing the perimeter monitors as described in the Air Monitoring Plan. Material placed in the landfill will be covered with paper mulch and tackifier to prevent the generation of dust on an as needed basis.

### **3.9 Baghouse Demolition**

For each building to be demolished, the associated baghouse will be kept operational as long as practical. In most cases, the baghouses will be kept operational until wet-decontamination of the building is started e.g., high-pressure washing. Electrical service will be disconnected to each

building prior to wet-decontamination to avoid hazards associated with electrical shock. Decontamination and demolition of the baghouses will be performed utilizing the following processes:

- Bags will be removed by Exide following customary practices for bag removal;
- Baghouse openings, such as exhaust stacks, will be sealed/blinded to prevent the escape of emissions and maintain negative air pressure during decontamination;
- Each baghouse will be decontaminated prior to demolition. A portable high-efficiency particulate air (HEPA)-equipped negative air system will be utilized during the decontamination activities. The HEPA filtration system will be operated at 1900 cubic feet per minute, sufficient to ensure four air exchanges per hour (based on the typical baghouse size).
- Following decontamination, each baghouse will be carefully disassembled in a manner that minimizes dust generation.

#### 4.0 POINTS OF CONTACT

Concerns regarding activities conducted at the Exide Technologies Frisco Recycling Center should be addressed to the following points of contact:

Exide:

Vanessa Coleman  
7471 South Fifth Street  
Frisco, Texas 75034  
Ph: 972-335-2121x26  
Cell: 916-296-4292  
Fax: 972-377-2707  
Vanessa.coleman@Exide.com

Texas Commission on Environmental Quality:

Margaret Ligarde  
Office of Legal Services  
MC-173  
P.O. Box 13087  
Austin, Texas 78711  
Ph: 512-239-3426  
Fax: 512-239-0330  
Margaret.ligarde@tceq.texas.gov

City of Frisco:

Mack Borchardt  
City of Frisco  
6101 Frisco Square Blvd.  
Frisco, Texas 75034  
Ph: 972-292-5127  
Fax: 972-292-6319  
mborchardt@friscotexas.gov

## **APPENDICES**

**APPENDIX A**

**DESCRIPTIVE LITERATURE ON DUST BOSS MISTING EQUIPMENT**





# DB-60 SPECS >



## GENERAL SPECIFICATIONS

- > 30,000 CFM (849.50 CMM) generated by 25 HP fan.
- > 21,000 square feet (1,950 square meters) coverage. Up to 84,000 square feet (7,804 square meters) coverage available with optional 180° oscillation.
- > Oscillator gives 0–40° of movement on standard unit. Unit can also be equipped with optional 180° oscillation.
- > Adjustable angle of throw 0–50° of height adjustment.

## ELECTRICAL SPECIFICATIONS

- > U.S.: 3 Phase / 25 HP fan / 480 Volt / 60 Hertz.  
Full load current is 46 amps. 60 Kw gen set is recommended.  
Motor is designed with a 1.15 service factor capable of operating at +/- 10% of design voltage.
- > Other motor options available, including all international electrical motors:
  - 3 Phase / 25 HP fan / 380 Volt / 50 Hz (Europe, Middle East, N. Japan, Latin America)
  - 3 Phase / 25 HP fan / 400 Volt / 50 Hz (Europe, Japan, New Zealand, Australia)
  - 3 Phase / 25 HP fan / 415 Volt / 50 Hz (Europe, New Zealand, Australia)
  - 3 Phase / 25 HP fan / 575 Volt / 60 Hz (Canada)
  - 3 Phase / 25 HP fan / 380 Volt / 60 Hz Korea)
  - 3 Phase / 25 HP fan / 440 Volt / 60 Hz (Mexico)
- > 380, 400, 415 volt / 50 Hz motors are designed with a 1.00 service factor capable of operating at +/- 10% of design voltage.
- > 10 HP (7.5 Kw) high-pressure booster pump with no lift.
- > 1/8 HP (0.10 Kw) oscillator.
- > 150 foot (45.72 meters) 6/4 electrical cord. Other options available.
- > No male plug, "bare wired" is standard. Any plug is extra cost.
- > Cabinet with control panel.

## WATER SPECIFICATIONS

- > 10PSI (0.69 BAR) constant pressure needs to be delivered to booster pump. Maximum inlet water pressure should not exceed 100 PSI (6.89 BAR) when operating the booster pump.
- > Maximum PSI delivered by booster pump is 200 PSI (13.79 BAR).
- > Filter is included and should be used at all times. Contact us for recommendations when using nonpotable water. (Filter system in-line 30 mesh 595 micron).
- > 1-1/2" (38.10 mm) cam-and-groove quick disconnect female coupling for fire hose provided on machine.
- > 30 brass nozzles (also available in stainless and nylon).
- > Droplet size of 50–200 microns.
- > Throw 200 feet (60 meters).

ENGLISH UNITS	WITHOUT BOOSTER PUMP				WITH BOOSTER PUMP		
	40	60	80	100	160	180	200
Water Pressure, psi	40	60	80	100	160	180	200
Water Flow, gpm	12	14.6	16.9	18.9	23.9	25.4	26.7
METRIC UNITS							
Water Pressure, bar	2.8	4.14	5.5	6.89	11	12.4	13.8
Water Flow, lpm	45.3	55.4	64.0	71.6	90.5	96.0	101.2

1-1/2" FIRE HOSE WATER SUPPLY

## NOISE LEVELS

WITH BOOSTER PUMP	CONTROL PANEL SIDE	BACK SIDE OF FAN	OPPOSITE SIDE	DISCHARGE
0 feet	92	103	92	100
12 feet	86	89	84	88
WITHOUT BOOSTER PUMP	CONTROL PANEL SIDE	BACK SIDE OF FAN	OPPOSITE SIDE	DISCHARGE
0 feet	86	101	88	96
12 feet	80	87	80	84

## DIMENSIONS

### ON STANDARD WHEELED CARRIAGE

- > 6.75 feet (81 inches; or 2.06 meters) wide.
- > 9.75 feet (117 inches; or 2.97 meters) long.
- > 7.17 feet (86 inches; or 2.19 meters) tall.
- > 1800 lbs. (816.50 kilograms).

## MAINTENANCE

- > If using potable water, nozzles need to be inspected once a year.
- > Fan motor and high pressure pump should be greased every 10,000 hours.
- > Oscillator bearing should be greased on a regular maintenance schedule, or as needed.

## CHEMICAL ADDITIVES

- > Can be used with surfactant to improve binding of dust particles or with tackifying agents to seal the ground to prevent dust from becoming airborne.
- > Odor control chemicals can be used to help eliminate odor.

## OPTIONS

- > Unit is available with optional 180° oscillation. Standard oscillation provides 0–40° of movement.
- > Available on frame with skid mount. Unit comes standard on wheeled carriage.
- > Dosing pump can be added to unit for chemical applications.

## WARRANTY

- > Unit is covered by a 3-year/3,000-hour warranty.

> **CALL: 1 (800) 707-2204 (U.S.)**  
+1 (309) 693-8600 (Int'l)

> **24 HR Technical Support: (309) 645-3691**  
[www.dustboss.com](http://www.dustboss.com)

**APPENDIX B**

**DESCRIPTIVE LITERATURE ON DUST SUPPRESSION MATERIAL**

## DESCRIPTION AND USE

XP 355 is a liquid dust suppressant that can be added to dry material at any point in the operation.

XP 355 is effective at low dosage levels providing superior performance and economical treatment.

## TYPICAL PROPERTIES

*These properties are typical. Refer to the MSDS for the most current data.*

Appearance:	Red Liquid
pH:	NA
Solubility in water:	Low

## FEED METHOD & DOSAGE

XP 355 dosage varies depending on plant conditions. Your Plymouth Technology representative will conduct a series of on site testing to determine optimal feed rates for your application.

Typical dosage rates are 20-40 ounces per ton.

The most effective method of application is to spray the liquid through multiple nozzles on the dry material as it is being conveyed.

## MATERIALS OF COMPATIBILITY

*Compatible:* Tanks – HPDE, PP, XLPE  
Fittings – PVC, CPVC, EDPM,  
Viton

*Non-Compatible:* Fittings –Copper, Aluminum

## PACKAGING

Packaging is standard in bulk, one way intermediate bulk containers (totes) and 55-gallon drums.

## STORAGE

Recommended storage periods:  
Material as supplied: 12 months

Protect from freezing.

## HANDLING

For complete safety information, please refer to the Material Safety Data Sheet.

## CHEMICAL EMERGENCY NUMBER:

1-800-535-5050

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Q U A L I T Y T H R O U G H S E R V I C E

# MATERIAL SAFETY DATA SHEET



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**XP 355**

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## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: XP 355

### MANUFACTURER:

PLYMOUTH TECHNOLOGY, INC.  
2925 Waterview Drive  
Rochester Hills, MI 48309  
Customer Service: 248-537-0081

### 24 HR. EMERGENCY TELEPHONE NUMBERS:

Emergency Phone 800-535-5053

	Health	Flammability	Reactivity
HMIS	0	1	0
NFPA	0	1	0

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## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Trade Secret wt.% CAS Registry  
99% NA

### OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

EXPOSURE LIMITS  
OSHA PEL ACGIH TLV Supplier

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## 3. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

Not expected to present a hazard under anticipated conditions of use. If ingestion occurs, do not induce vomiting since aspiration into the lungs may create a hazard.

### POTENTIAL HEALTH EFFECTS

#### EYES:

No significant health hazards identified.

#### SKIN:

No significant health hazards identified.

#### INGESTION:

Negligible effect; may act as a laxative.

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**INHALATION:**  
No significant health hazards identified.

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## 4. FIRST AID MEASURES

**Inhalation:** Seek fresh air. If irritations persist, seek medical attention.

**Ingestion:** May act as a laxative seek medical attention. Do not induce vomiting.

**Eye Contact:** Flush eyes immediately and thoroughly with water. If irritation persists, seek medical attention.

**Skin Contact:** Wash exposed skin with water and mild soap. Seek medical attention in all cases of skin irritation and rash.

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## 5. FIRE FIGHTING MEASURES

**Flash Point:** 280°F Minimum (138°C) Cleveland Open Cup Method

**Flammable Limits:** LEL (% vol. in air): 0.9%  
UEL (% vol. in air): 7.0%

**Flammability Classification:** Slight hazard. Material must be preheated before ignition will occur (OSHA Class III B)

**Extinguishing Media:** Agents approved for Class B Hazards (e.g. dry chemical, carbon dioxide, foam, steam or water fog). Do not use streams of water as this will scatter the liquid and may spread the fire. A water spray may be used to keep fire-exposed containers and surroundings cool.

**Unusual Fire And Explosives Hazards:** May create dense smoke during combustion. Mild fire hazard when heated above its flash point.

**Firefighting equipment:** Firefighters should wear full bunker gear, including a positive pressure selfcontained breathing apparatus.

**Hazardous Combustion Products:** Incomplete burning can produce carbon monoxide and/or carbon dioxide and other toxic gases.

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## 6. ACCIDENTAL RELEASE MEASURES

### GENERAL PROCEDURES:

**Accidental release:** Remove all sources of ignition. Dike around spilled liquid to contain. Use absorbent material such as dry sand or earth.

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# MATERIAL SAFETY DATA SHEET



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## 7. HANDLING AND STORAGE

**Handling:** No special requirements.

**Storage:** Store in a cool well-ventilated area in sealed containers. Do not store in open or unlabeled containers. Store away from strong oxidizing agents or combustible materials.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Eye Protection:** None required; however, use of safety glasses, goggles or face shield is just good industrial practice.

**Skin Protection:** None required; however, use of protective gloves/clothing is good industrial practice.

**Respiratory Protection:** Avoid breathing mist. If local ventilation is not adequate, use a NIOSH/MSHA approved respirator that will protect against dust/mist. A respiratory protection program in accordance with OSHA Standard 29 CFR 1910.134 must be implemented whenever workplace conditions warrant use of a respirator.

**Exposure guidelines:** OSHA PEL: 5 mg/m<sup>3</sup> (oil mist)

ACGIH TLV: 5 mg/m<sup>3</sup> (oil mist)

ACGIH TLV STEL: 5 mg/m<sup>3</sup> (oil mist)

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Red, oily liquid. Slight odor.

**PH:** Not Determined

**Vapor Density (Air = 1):** >1

**Boiling Point:** Not Determined

**Vapor Pressure:** <1.0 mmHg @ 68°F (20°C)

**Specific Gravity (Water = 1):** About 0.875

**Solubility in Water:** Negligible in water (below 0.1%); soluble in hydrocarbons

**Melting Point:** Not Applicable

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## 10. STABILITY AND REACTIVITY

**Stability:** Stable

**Hazardous Decomposition:** None identified

**Hazardous Polymerization:** Will not occur.

**Conditions to avoid:** Avoid excessive heat and open flames.

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**Incompatibility:** Avoid chlorine, fluorine, and other strong oxidizers.

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## 11. TOXICOLOGICAL INFORMATION

**Eye Irritation:** Testing not conducted. See other toxicity Data.

**Skin Irritation:** Testing not conducted. See other toxicity Data.

**Dermal LD50:** Testing not conducted. See other toxicity Data.

**Oral LD50:** Testing not conducted. See other toxicity Data.

**Inhalation LC50:** Testing not conducted. See other toxicity Data.

### **Other Toxicity Data:**

Specific toxicity tests have not been conducted on this product. The hazard evaluation is based on information from similar products, the ingredients, technical literature, and/or professional experience. A similar product produced a Primary Eye Irritation Score (PEIS) of less than 10/110.0 (rabbits), a Primary Skin Irritation Score (PDIS) of less than 4.0/8.0 (rabbits), a Dermal LD50 greater than 2000 mg/kg (rabbits) and an Oral LD50 score greater than 5000 mg/kg (rats). Also, a similar product was not a skin sensitizer when tested.

**Oil Mist:** Repeated exposure to levels of oil mists in excess of the exposure limits may result in accumulation of oil droplets in pulmonary tissue and may lead to irritation of the nose and throat. No adverse health effect is expected to occur at or below the exposure limits.

No component of this product present at levels greater than 0.1% is identified as a carcinogen by the U.S. National Toxicology Program, the U.S. Occupational Safety and Health Act, or the International Agency on Research on Cancer (IARC).

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## 12. ECOLOGICAL INFORMATION

Ecological testing has not been conducted on this product.

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## 13. DISPOSAL CONSIDERATIONS

Disposal of the Material should be in accordance with the applicable federal, state and local laws and regulations.

The above applies to materials as sold by Plymouth Technology. The material may be contaminated during use, and it is the responsibility of the user to assess the appropriate disposal of the used material.

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## 14. TRANSPORT INFORMATION

**General Transport Statement:** This product does not require classification by DOT.

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# MATERIAL SAFETY DATA SHEET



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## 15. REGULATORY INFORMATION

**TSCA:** (Toxic Substance Control Act): Listed on inventory. All components comply with TSCA.

**CERCLA:** Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 40 CFR §302.4 Not Reportable.

**Emergency Planning and Community Right to Know Act (EPCRA):**

**Sara Title III Section 302.** Not regulated as an extremely hazardous substance. (40 CFR Part 355).

**Sara Title III Section 311/312** Hazardous Categorization. Not a toxic chemical. (40 CFR Part 370)

**Sara Title III Section 313.** Not regulated. (40 CFR Part 372)

**OSHA Hazard Communication Standard:** Listed by ACGIH. Listed by OSHA.

**Food contact Status:**

**FDA:** This product is approved for use by the FDA under the following sections of 21 CFR. Part 178.3620 as a component of nonfood articles in contact with food when used in accordance with the specifications of this subpart.

**Part 573.680 in animal feed, subject to the provisions of this subpart.**

**USDA:** H1 Status: This product is acceptable to the SDA as a lubricant with incidental food contact in official meat and poultry establishments.

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## 16. OTHER INFORMATION

Approval date: 03/31/11

### MANUFACTURER DISCLAIMER:

This information is furnished without warranty, expressed or implied, except that it is accurate

to the best knowledge of manufacturer. The data on this sheet relates only to the specific material designated herein. Manufacturer assumes no legal responsibility for use or reliance upon this data.

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# Conwed Fibers®

Family of Hydraulic Mulch Products

Setting the Standards for Erosion Control Since 1965



CONWED FIBERS®

## ■ Conwed Fibers® Is Your Insurance Policy Against the Storm of Phase II



Nothing is changing the face of erosion control more dramatically than the Clean Water Act. Noncompliance with the National Pollution Discharge Elimination System (NPDES) Phase II storm water regulations is subject to administrative orders, civil actions and/or criminal prosecutions on federal, state, county and/or local level. Conwed Fibers® can help ensure you'll be in compliance by helping you calculate the Revised Universal Soil Loss Equation (RUSLE) and select the most effective mulches for your site. Don't leave anything to chance. Ask the Conwed Fibers experts.

## ■ Select the Right Mulch for Your Specific Job

A broad range of Conwed Fibers hydraulic mulches is available for today's hydro-seeder. Each has properties and performance characteristics that make them best suited to different types of sites. You can customize each to meet your specific site requirements.

PRODUCT	APPLICATION	SLOPE	CONTINUOUS MAX. SLOPE LENGTH* (without slope interruption devices)	CONDITIONS	RATE/LBS PER ACRE
Hydro-Blanket® BFM	Erosion Control	≤ 1:1 ≤ 2:1 ≤ 3:1	75 ft	Critical Sites	4,000 3,500 3,000
Conwed Fibers® 2000	Erosion Control	≤ 2:1 ≤ 3:1 ≤ 4:1	30 ft	Moderate	3,000 2,500 1,500-2,000
Conwed Fibers® 1000	General Seeding	≤ 2:1 ≤ 3:1 ≤ 4:1	28 ft	Moderate	3,000 2,500 1,500-2,000
EnviroBlend® with Tack	General Seeding	≤ 3:1 ≤ 4:1	25 ft	Mild	2,500 1,500-2,000
EnviroBlend®	General Seeding	≤ 3:1 ≤ 4:1	23 ft	Mild	2,500 1,500-2,000
Cellulose with Tack	General Seeding	≤ 4:1	20 ft	Mild	1,500-2,000
Cellulose	General Seeding/ Reclamation/ Straw Tacking	≤ 4:1	18 ft	Mild	1,500-2,000

\*Maximum slope length is based on a 4H:1V slope (BFM is 3H:1V). For applications on steeper slopes, the maximum slope length may need to be reduced based on actual site conditions.

## ■ The #1 Choice of Hydro-Seeders

More hydro-seeders choose Conwed Fibers® wood and wood/cellulose hydraulic mulches than any other brands.

Conwed Fibers set the standard for erosion control excellence when it began operations in 1965. Our wood-fiber hydraulic mulch stood head and shoulders above all other mulches at that time, and it still does. Continual research, thorough testing at leading universities, and the commitment to remain the premium mulch producer has kept Conwed Fibers on top of the competition for all of these years. And now we've introduced the first wood and blended products with a new flocculating agent that takes hydraulic mulch performance to an even higher level.



Manufacturing advancements have gone hand-in-hand with advancements in Conwed Fibers' ingredients and mulch performance.

## ■ New SLIKSHOT™ Makes Mulch Shoot Better, Work Better

Conwed Fibers offers the only wood and blend products in the industry with the added value of ProPlus® SlikShot®. It's a proven flocculant that acts as a lubricant to slicken the hose and prevent hose clogs common with competitors' mulches. This innovative, proprietary formulation helps mulch:

- Shoot easier and farther for improved productivity
- Adhere on impact to provide more uniform ground coverage
- Increase water holding capacity to maximize germination and revegetation
- Increase yield to provide an outstanding value

The addition of SlikShot to our mix is just the latest in a long line of new ingredients designed to deliver optimum performance. No matter what type of mulch — wood, blend or cellulose, our unsurpassed expertise in the industry and commitment to total quality continue to make Conwed Fibers hydraulic mulch second to none.



## ■ Superior Fibers Deliver Superior Results for Fewer Callbacks

Nothing illustrates Conwed Fibers superior quality than a comparison of our wood fibers to those of our competitors.

Fibers magnified 45 times by independent lab specializing in fiber analysis.

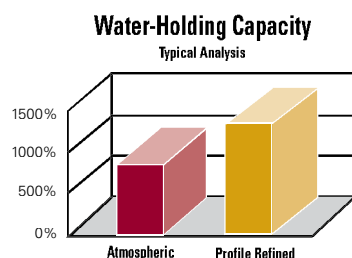


Conwed Fibers' Thermally Refined wood fiber holds 13.5 times its weight in water to promote faster, more complete germination. Say goodbye to callbacks due to washouts or poor turf establishment.



Competitors use atmospherically refined wood fiber which results in up to 50% less water holding capacity and less yield. It's one reason you need extra bales of competitive mulch to equal the performance of Conwed Fibers.

## ■ Thermally Refined® wood fiber holds up to 50% more water than atmospherically refined wood fiber – a critical factor in seed germination.



Thermally Refined wood utilizes heat and pressure that breaks wood down into more fibrous material with greater surface area that results in mulch with:

- Greater yield – reduces the number of bales you buy and load
- Greater coverage – reduces callbacks due to washouts
- Greater water retention – reduces callbacks due to poor turf establishment
- Greater productivity – eliminates clogs from the coarse fiber found in competitive mulches
- Lower total project cost

Ask your Conwed Fibers representative to conduct a side-by-side demonstration that leaves no doubt: Thermally Refined fiber performs better!



## ■ The Best Mulch for Any Job

Conwed Fibers® mulch products are ideal for a wide range of applications including turf establishment, golf courses, landfills, highway work, reclamation projects, airports and recreational areas.

### ■ Convenient 50-lb Bales

BFM



#### Hydro-Blanket® BFM

- The industry's leading Bonded Fiber Matrix (BFM) from Profile Products delivers a much higher level of performance than any standard hydraulic mulch or competitive BFM on the market today.
- Independent testing and years in the field prove Hydro-Blanket is effective on the steepest, roughest sites — a critical consideration for Phase II compliance.
- Hydro-Blanket is ideal for projects where blankets are impractical and/or too expensive, and conventional hydraulic mulches are ineffective.
- Produced from Thermally Refined® wood fiber and combined with 10% cross-linked hydro-colloid tackifier, Hydro-Blanket applies more easily, promotes faster germination and minimizes sediment and water runoff. Its performance is comparable to blankets, yet its cost is significantly less.

WOOD



Conwed Fibers wood and wood with tack products are ideal choices for critical sites with up to 2:1 slopes. Contractors report that our Thermally Refined fiber delivers up to 30% more yield than competitive products, which means money in their pockets.

#### Conwed Fibers® 1000 with SlikShot™

- Contains 100% of the highest quality wood fiber.
- Now with SlikShot for better yield, better shooting and better ground coverage.
- Thermally Refined wood fiber delivers up to 50% more water holding capacity than atmospherically refined wood mulches.

#### Conwed Fibers® 2000

- 100% wood fiber just like Conwed 1000 but with a premium tackifier included.
- Tackifier is a pre-blended high-viscosity, organic guar-gum tackifier.
- Eliminates the extra step and mess of field mixing.

BLEND



Conwed Fibers' EnviroBlend® and EnviroBlend® with Tack combine 100% Thermally Refined wood fiber with the highest quality cellulose mulch in the industry.

- Delivers up to 15% greater yield to contractors versus competitive blend products.
- Covers up to 20% more ground than cellulose and provides superior erosion control and more complete germination without a big jump in price.

#### EnviroBlend with SlikShot

- The #1 selling blend in the industry.
- Now with SlikShot for better yield, less hose clogging and better ground coverage.

#### EnviroBlend with Tack

- Same quality wood and cellulose blend as EnviroBlend but with a pre-blended 3% polymer tackifier for a stronger bond and added holding power.
- Eliminates the extra step and mess of field-mixing tackifier.

CELLULOSE

#### Conwed Fibers® Cellulose

##### Conwed Fibers® Cellulose with Tack

- Exclusive defibration process and new manufacturing process improves water holding capacity by 22%.
- Less percentage of fines greatly reduces maché effect.
- High-quality, clean 100% cellulose fiber mixes in water at an accelerated rate and stays in suspension for more uniform consistency.
- Provides erosion control that is superior to straw for nearly the same cost □ making them ideal for general seeding.
- Darker, richer green color than competing brands gives your work a more professional look from the very beginning.
- Shoots great, allowing hydraulic machinery to run efficiently while providing excellent ground coverage.

##### Conwed Fibers Cellulose with Tack

- Comes pre-blended with 3% polymer tackifier to increase protection from seed washout and erosion.
- Eliminates the extra step and mess of field-mixing tackifier.



## ■ We've Got You Covered

No matter what the site or what the type of hydro-mulch equipment you use, wherever bare soil needs to be covered, Conwed Fibers® has the material best suited to the job. Our complete line provides you with every option you need.



### ■ Jet Spray® with FiberMax™ – Pourable Mulch Flakes Save You Time and Money

- Holds more water for enhanced seed germination and more effective erosion control for more water holding capacity and a stronger bond
- Delivers 50% of FiberMax® for greater yield and better coverage, which means you buy and load less material
- Flocculating tackifier helps increase yield and gives the mulch matrix greater loft
- Designed specifically for the smaller tank openings of jet-agitated hydraulic machines, loads up to 90% faster than traditional hydraulic mulch
- Increases productivity while delivering professional results



### ■ Seed Aide® – Perfect for Small Jobs

- Expanding cellulose/wood fiber mulch granules are ideal for small areas
- Can be applied with a high volume drop spreader, large-opening broadcast spreader or by hand
- Great leave behind for touch ups after hydro-seeding to help eliminate callbacks
- Tests prove that granular properties and texture result in greater water absorption and soil coverage than competing brands for superior seed protection
- Organic tackifier reduces soil erosion, water runoff and seed washout



### ■ Futerra® Revegetative Blankets

- Futerra® F4 Netless® and EnviroNet® blankets are proven to keep soil in place with 99.9% effectiveness, providing better slope protection with faster, thicker vegetative establishment than traditional blankets and nets
- Designed to minimize danger to wildlife or maintenance equipment
- Costs less than half the price of installed sod, including seed and fertilizer
- Takes just one man-hour to lay 3,000 square feet of Futerra versus one man-hour to lay 500 square feet of sod
- Improves site logistics—one truckload of Futerra EnviroNet covers eight acres, compared to a truckload of sod that only covers one-quarter of an acre

## So Effective, It's Almost Perfect

	C-Factor <sup>1</sup>	Effectiveness Rating	Soil Loss/Plot <sup>2</sup>
Futerra® F4 Netless®	0.001	99.9%	0.4 lb
Futerra® EnviroNet®	0.003	99.7%	1.4 lb
Single-Net Straw Blanket	0.073	92.7%	28.9 lb
Single-Net Excelsior Blanket	0.075	92.5%	29.8 lb
Bare Soil Control	1.000	0.0%	397.0 lb

<sup>1</sup>Test Conditions — UWRL Rainfall Simulator, Slope Gradient — 2.5H:1V  
Soil Type — sandy loam, Rainfall Event — 5"/hr, Test Duration — 1 hr

<sup>2</sup>Plot size 4' by 19.5'

### Superior Germination

Futerra® Revegetative Blankets are ideally suited for areas where conventional practices are inadequate for establishing rapid and uniform vegetation. Through its patented design, Futerra is capable of absorbing and holding more water, thereby creating a moisture reservoir that ensures improved germination—nearly double that of straw!

### Get all the Facts

Log on to [www.profileproducts.com](http://www.profileproducts.com).

## Put Added Value in Every Tank with ProPlus® Hydro Mulch® Solutions



Conwed Fibers® offers you the industry's most comprehensive line of hydraulic mulch additives to achieve maximum performance under virtually every condition. These accessory products are specifically designed to solve real-world seeding challenges that contractors face every day. Your Conwed Fibers distributor can help you analyze site conditions and recommend the best mix for the job. ProPlus® hydraulic mulch additives include:

### Soil Amendments

- NEW Aqua-pHix™ Hydro** – Proprietary liquid formula of non-hazardous and non-corrosive, self buffering, chelated organic and inorganic acids that immediately lower pH of alkaline soils. Dramatically enhances seed germination.

**Packaging:** 2-2.5 gal jugs per case

- NEW JumpStart™** – Proprietary liquid reformulation with long-term penetrating agent added to humic acid and beneficial bacteria solution. Proven to promote faster germination and vegetation establishment.

**Packaging:** 2-2.5 gal jugs per case

- NEW BioPrime™** – Granular formulation containing biostimulant, 18-0-0 slow release nitrogen, humic acid and Endo Mycorrhizae. Designed to sustain long-term plant vitality.

**Packaging:** 40-lb bag

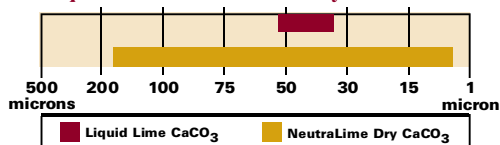
- NeutralLime™ Dry** – Nothing balances soil pH faster – within 6-10 days of application – with the added plus of longer control – up to 18 weeks. Contains 50% more active ingredients than liquid lime.

**Packaging:** 4-10 lb bags per case, 40-lb bag

- NeutralLime™ Liquid** – Balances soil pH and is effective in 7-10 days.

**Packaging:** 2-2.5 gal jugs per case

### Liquid Lime vs NeutralLime Dry Effectiveness



Graduated particle sizing extends minimum effectiveness from 12 to 18 weeks.

- JumpStart™ 5** – Jump start turf establishment with the industry's most complete package of growth stimulants and added polymers.

**Packaging:** 4-10 lb bags per case, 40-lb bag

- AquaGel™ A, B, C, D** – Four ways to hold 400 times the water in a variety of applications, making it an excellent water management tool.

**Packaging:** 6-5 lb pails per case (A and C only), 2-16 lb jugs per case, 25-lb bag and 50-lb drum

### Fiber Mulch Amendments

- FiberBond Ultra™** – Enhances the performance of hydraulically applied fiber mulch materials.

**Packaging:** 4-7.5 lb bags per case

- FiberMax™** – Maximize yield and mulch performance with a stronger bond and the added plus of better shooting.

**Packaging:** 6-5 lb bags per case

- FiberLock™** – Patented, crimped fibers are your key to increased yield and sure success on the really long slopes.

**Packaging:** 10-lb case

- SlikColor™** – The only dye marker with the added plus of a slickifier to improve shooting – now in water soluble bags.

**Packaging:** 2-11 lb jugs per case, 11-1 lb bags per case (water soluble bags)

### Soil Stabilization & Dust Control

- TackDown™** – The binder you need to make sure you've got the job nailed.

**Packaging:** 2-2.5 gal jugs per case, 250 gal tote

- FlocLoc™ (PAM) Dry** – A flocculating soil stabilizer that coagulates suspended soil particles, dropping them from runoff. It reduces soil erosion and improves water infiltration into the seedbed.

**Packaging:** 6-3 lb jugs per case, 40-lb pail

### Tackifiers

- ConTack®** – 100% guar-based organic tackifier reduces the need for reseeded and minimizes soil erosion by stabilizing mulch and straw. It also helps increase the flow and pumping properties of mulch.

**Packaging:** 8-5 lb bags per case, 50-lb bag

- ConTack® AT** – A starch-based agricultural tackifier, ConTack AT is an economical choice for tacking straw or hay mulch to enhance germination by holding seed in place and preventing washouts.

**Packaging:** 50-lb bag

- Tacking Agent 3®** – Requires no cure time to be effective! University tests and field use prove it effectively reduces soil erosion and water runoff immediately after hydro-seeding. Also increases the water holding capacity of all types of hydraulic mulches.

**Packaging:** 4-8 lb bags per case, 25- and 50-lb bag, 7-3 lb bags per case (water soluble bags)

- MPT™ Tack** – A combination of poly-acrylamide and hydro-colloid polymers, MPT is highly viscous and dries to form a strong chemical bond. Ideal for fiber mulch binding, straw and hay mulch tacking.

**Packaging:** 4-12 lb bags per case, 50-lb bag

**Please refer to the ProPlus brochure for specific application rates and conditions.**



Conwed Fibers® • www.conwedfibers.com • 800-508-8681 • Fax 847-215-0577

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