FACT SHEET

Diethylamine

CAS Number: 109-89-7

This fact sheet provides a summary of the Development Support Document (DSD) created by the TCEQ Toxicology Division (TD) for the development of Regulatory Guidelines (ESLs, AMCVs and ReVs) for ambient exposure to this chemical. For more detailed information, please see the DSD or contact the TD by phone (1-877-992-8370) or e-mail (tox@tceq.texas.gov).

What is diethylamine (DEA)?

DEA is an organic amine with a fishy, ammonia-like odor that occurs naturally in foods and plants. DEA is also produced during the decay of fish. Other names for DEA are diethamine, n,n-diethylamine, ethanamine, n-ethyl, and n-ethylethanamine.

Industrially, DEA is used as an intermediate to produce the corrosion inhibitor n,n-diethylethanolamine. It is widely used in rubber, pharmaceuticals, resins, pesticides, insect repellants, and dye processing. In addition, DEA can be used as a polymerization inhibitor. DEA is considered a high production volume chemical and occurs throughout the world in trace amounts.

How is DEA released into ambient air?

DEA may be released into the ambient air naturally by foods, plants, and decaying fish and industrially by those industries that make or use it. Currently, DEA does not appear on the United States Environmental Protection Agency's (USEPA's) list of hazardous air pollutants. Therefore, it is not measured by the USEPA ambient air quality monitoring program implemented by state and local agencies, including the TCEQ, for non-criteria pollutants.

How can DEA affect my health?

Permitted levels of DEA should not cause short- or long-term adverse health or welfare effects. However, DEA can be a nasal and eye irritant at sufficiently high concentrations during short-term exposures. The short- and long-term observed adverse effect levels are similar, indicating that respiratory irritation from short-term exposure due to long-term exposure may occur at similar concentrations. Again, permitted levels protect the public (including potentially sensitive subpopulations) against adverse health effects from exposure to DEA in ambient air. There are no human or animal studies indicating DEA has the potential to cause cancer when inhaled. DEA has not been classified as causing cancer when inhaled by the International Agency for Research on Cancer or the USEPA.

Is DEA odorous to humans or harmful to plants?

DEA has a characteristic fishy, ammonia-like odor that may be objectionable at high concentrations. Adverse effects to plants from DEA in the ambient air have not been reported.

Why does the TCEQ set Regulatory Guidelines for DEA?

The TCEQ has set various air quality guideline levels (ESLs, AMCVs and ReVs) to protect human health and welfare. Please see Definitions of ESLs, ReVs, and AMCVs located on the TCEQ DSD webpage for more information. The air quality guideline levels for DEA have been designed to protect the general public from short-term and long-term adverse health and welfare effects. The general public includes sensitive populations such as children, the elderly, pregnant women, and people with preexisting health conditions. If you would like to know more about the specific ESLs, AMCVs, and ReVs developed, what the values are, and what they are used for, please see the DSD.