

Common Name: **DIETHANOLAMINE**

Synonyms: DEA; 2,2'-Dihydroxydiethylamine; Ethanol, 2,2'-Iminobis-

CAS No: 111-42-2

Molecular Formula: $C_4H_{11}NO_2$

RTK Substance No: 0686

Description: White, crystalline solid or colorless to yellow, syrupy liquid with a mild *Ammonia*-like odor

HAZARD DATA

Hazard Rating	Firefighting	Reactivity
3 - Health 1 - Fire 0 - Reactivity DOT#: UN 1760 ERG Guide #: 154 Hazard Class: 8 (Corrosive)	Diethanolamine may burn, but does not readily ignite. Use dry chemical, CO ₂ , water spray or alcohol-resistant foam as extinguishing agents. POISONOUS GASES ARE PRODUCED IN FIRE, including <i>Nitrogen Oxides</i> . Use water spray to keep fire-exposed containers cool.	Diethanolamine reacts violently with OXIDIZING AGENTS (such as PERCHLORATES, PEROXIDES, PERMANGANATES, CHLORATES, NITRATES, CHLORINE, BROMINE and FLUORINE) and STRONG ACIDS (such as HYDROCHLORIC, SULFURIC and NITRIC). Diethanolamine is not compatible with STRONG BASES (such as SODIUM HYDROXIDE and POTASSIUM HYDROXIDE); ALDEHYDES; KETONES; ACRYLATES; ORGANIC ANHYDRIDES; ORGANIC HALIDES; FORMATES; and OXALATES. Diethanolamine reacts with NITROGEN COMPOUNDS (such as SODIUM NITRITE and NITROGEN OXIDES) to form cancer-causing <i>Nitrosamines</i> . Diethanolamine reacts with CARBON DIOXIDE and absorbs MOISTURE in the air. Diethanolamine is corrosive to ALUMINUM, COPPER, ZINC, and GALVANIZED IRON.

SPILL/LEAKS

Isolation Distance:

Spill (solid): 25 meters (75 feet)

Spill (liquid): 50 meters (150 feet)

Fire: 800 meters (1/2 mile)

Absorb liquids in dry sand, earth, or a similar material and place into sealed containers for disposal.

Moisten *solid* spilled material first or use a HEPA-filter vacuum for clean-up and place into sealed containers for disposal.

DO NOT wash into sewer.

Diethanolamine is harmful to aquatic organisms.

PHYSICAL PROPERTIES

Odor Threshold:	0.27 ppm
Flash Point:	273° to 342°F (134° to 172°C)
LEL:	1.6%
UEL:	9.8%
Auto Ignition Temp:	1,224°F (662°C)
Vapor Density:	3.65 (air = 1)
Vapor Pressure:	<0.01 mm Hg at 68°F (20°C)
Specific Gravity:	1.1 (water = 1)
Water Solubility:	Very soluble
Boiling Point:	514°F (268°C)
Melting Point:	82°F (28°C)
Critical Temp:	828°F (442°C)
Molecular Weight:	105.2

EXPOSURE LIMITS

NIOSH: 15 mg/m³, 10-hr TWA

ACGIH: 1 mg/m³, 8-hr TWA

The Protective Action Criteria values are:

PAC-1 = 25 mg/m³ PAC-2 = 150 mg/m³
 PAC-3 = 300 mg/m³

PROTECTIVE EQUIPMENT

Gloves:	Butyl, Nitrile, Neoprene, Polyvinyl Chloride, Viton and Barrier® (>8-hr breakthrough)
Coveralls:	Tychem® CPF 3 and CSM (>8-hr breakthrough)
Respirator:	>1 mg/m ³ - full facepiece APR with <i>Organic vapor</i> and <i>P100 cartridges</i> >10 mg/m ³ or Fire - SCBA

HEALTH EFFECTS

Eyes:	Irritation, burns and possible eye damage
Skin:	Irritation and burns
Inhalation:	Nose and throat irritation with coughing and wheezing

FIRST AID AND DECONTAMINATION

Remove the person from exposure.
Flush eyes with large amounts of water for at least 30 minutes. Remove contact lenses. Seek medical attention.
Quickly remove contaminated clothing and wash contaminated skin with large amounts of water.
Begin artificial respiration if breathing has stopped and CPR if necessary.
Transfer promptly to a medical facility.