



## MATERIAL SAFETY DATA SHEET

### DIETHYLENETRIAMINE (DETA)

#### 1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

**Chemical Name:** Diethylenetriamine, DETA

**Manufacturer Information:**

Delamine B.V.

Barchman Wuytierslaan 10

3818 LH Amersfoort

PO Box 473

3800 AL Amersfoort, The Netherlands

Tel: +31 33 4676897

**FOR EMERGENCIES, CONTACT CHEMTREC 1-800-424-9300 OR 1-703-527-3887**

#### 2. COMPOSITION/INGREDIENT DESCRIPTION

<u>Chemical Name</u>	<u>CAS #</u>	OSHA	<u>Concentration (%)</u>
		<u>Hazardous(Y/N)</u>	
Diethylenetriamine	111-40-0	Y	approx. 100

#### 3. HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW:** CORROSIVE TO EYES, SKIN, AND RESPIRATORY TRACT. HARMFUL IF SWALLOWED OR ABSORBED THROUGH SKIN. INHALATION OF AEROSOLS MAY BE TOXIC. CHEMICALS OF THIS TYPE MAY CAUSE SENSITIZATION BY INHALATION OR SKIN CONTACT.

**Physical Appearance and Odor:** Clear liquid, ammonia-like odor

**POTENTIAL HEALTH EFFECTS:**

**Acute Eye:** May cause severe irritation or burns. May produce temporary and reversible blurred or hazy vision. May cause conjunctivitis and corneal damage.

**Acute Skin:** Corrosive. Chemicals of this type may cause sensitization upon prolonged or repeated exposure. Material may be absorbed through the skin.

**Acute Inhalation:** May cause severe irritation to respiratory tract, with coughing and nasal discharge. Chemicals of this type may cause sensitization upon prolonged or repeated exposure.

**Acute Ingestion:** Corrosive to mouth, throat, and gastrointestinal tract. May cause abdominal pain, nausea, vomiting and diarrhea.

**Chronic Effects:** None known.



#### 4. FIRST AID MEASURES

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**Eye Contact:** Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek immediate medical attention.

**Skin Exposure:** Remove contaminated clothing and shoes. Wash with plenty of soap and water, for at least 15 minutes. Seek immediate medical attention. Launder contaminated clothing and shoes before re-use.

**Inhalation:** If respiratory irritation or distress occurs, remove victim to fresh air. Seek medical attention if respiratory irritation or distress continues.

**Ingestion:** Do not induce vomiting. If victim is conscious and alert, give 1-2 glasses of water to drink. Do not give anything by mouth to an unconscious person. Seek immediate medical attention. Do not leave victim unattended. Do not give anything by mouth to an unconscious person.

**Medical Conditions Possibly Aggravated by Exposure:** 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. Treat symptomatically. No specific antidote available.

#### 5. FIRE FIGHTING MEASURES

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**Flash point:** 208F (98C)

**Autoignition Temperature:** approx 743F (395C)

**Flammability limits (vol/vol%):** Lower: Not determined Upper: Not determined

**Extinguishing Media:** water spray, fog, dry chemical, foam, CO<sub>2</sub>

**Special Fire Fighting Procedures:** Firefighters should wear NIOSH/MSHA-approved self-contained breathing apparatus and full protective clothing. Cool containers exposed to fire with water.

**Unusual Fire and Explosion Hazards:** Closed containers may rupture due to buildup of pressure when exposed to extreme heat. Do not direct a steady stream of water onto burning material.

**Hazardous Decomposition Materials Under Fire Conditions:** Oxides of carbon, oxides of nitrogen, ammonia

#### 6. ACCIDENTAL RELEASE MEASURES

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**Evacuation Procedures and Safety:** Wear appropriate protective gear for the situation. (See Personal Protection information in Section 8).

**Cleanup and Disposal of Spill:** Extinguish or remove all sources of ignition. Absorb with an inert absorbent. Sweep up and place in an appropriate closed container for disposal and/or incineration, avoiding contact with spilled material. Clean up residual material by washing area with water. Collect washings for disposal.

**Environmental and Regulatory Reporting:** Do not flush to drain. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.



## 7. HANDLING AND STORAGE

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**Maximum Storage Temperatures:** Store at <40C (<104F)

**Handling:** Persons with a history of dermal or respiratory sensitization should not work with, or near, this material. Avoid breathing vapors. Avoid direct or prolonged contact with skin and eyes. Do not use copper and copper-containing materials in process equipment.

**Storage:** Store in tightly-closed, original container. Store in an area that is cool, dry, dark and well-ventilated. Do not re-use container.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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**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.

**Exposure Guidelines:** The following limits apply to components of this material.

### Chemical

Diethylenetriamine                      1 ppm (4.3 mg/M<sup>3</sup>) - ACGIH TWA (skin)

**Engineering Controls:** General area dilution/exhaust ventilation.

**Respiratory Protection:** When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with regulatory standards and/or industrial recommendations. Self-contained or supplied-air respiratory equipment is recommended.

**Eye/Face Protection:** Safety glasses with side shields, goggles or face shield are recommended.

**Skin Protection:** Skin contact should be minimized through the use of chemical-resistant gloves and boots, and suitable protective clothing.

**Work Practice Controls:** The following general measures should be taken when working 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 of contact with this material.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

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Physical and Chemical properties here represent typical properties of this product. Contact the manufacturer for exact specifications.

**Physical Appearance:** Clear liquid

**Odor:** Ammonia-like odor

**pH:** approx. 12 (10% aq. 68F (20C))

**Specific Gravity:** 0.952



## 9. PHYSICAL AND CHEMICAL PROPERTIES (continued)

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**Water Solubility:** Soluble

**Melting Point Range:** -39F (-39C)

**Boiling Point Range:** 405F (207C)

**Freezing Point Range:** Not determined

**Vapor Pressure:** <0.03 kPa (at 68F, 20C)

**Vapor Density:** 3.48

**Viscosity:** 7 mPas (at 68F, 20C)

## 10. STABILITY AND REACTIVITY

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**Chemical Stability:** This material is stable under normal handling and storage conditions described in Section 7.

**Conditions to be Avoided:** Heat, open flame, sparks.

**Materials/Chemicals to be Avoided:** Strong oxidizing agents, acids, halogenated organic compounds, aldehydes, copper and copper alloys, nickel and cobalt.

**Hazardous Decomposition Products:** Oxides of carbon, oxides of nitrogen, ammonia.

**Hazardous Polymerization:** Not applicable

**DRAFT**

## 11. TOXICOLOGICAL INFORMATION

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**Acute Eye Irritation:** Severely irritating, rabbit. Solutions from 15-100% resulted in permanent corneal damage, human.

**Acute Skin Irritation:** Corrosive, rabbit. May cause sensitization.

**Acute Dermal Toxicity:** LD<sub>50</sub>=1090 mg/kg, rabbit.

**Acute Respiratory Irritation:** No data available. May cause sensitization.

**Acute Inhalation Toxicity:** LC<sub>50</sub>=0.07-0.3 mg/m<sup>3</sup>/4-Hour, rat. This material, like many corrosive substances, when present in an aerosol form, may present a risk of pulmonary edema, which may be fatal.

**Acute Oral Toxicity:** LD<sub>50</sub>=1080 mg/kg, rat.

**Chronic Toxicity:** NOEL, rat 90-day oral = 70-80 mg/kg/day. Negative in the Ames and Chinese hamster ovary tests. In a lifetime dermal oncogenicity study in mice, no treatment-related tumors were observed at dosing levels of 5% (aqueous). 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

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**Ecotoxicological Information:** 96hr LC<sub>50</sub> = 430 mg/L (rainbow trout). 48hr EC<sub>50</sub> = 65 mg/L (daphnia.) 72hr IC<sub>50</sub> = 187 mg/L (algae). NOEL 21d = 5.6 mg/L (daphnia).

**Chemical Fate Information:** Inherently biodegradable (SCAS test). Activated sludge respiration inhibition test EC<sub>50</sub> = 2000 mg/L. Nitrifying bacteria respiration inhibition test EC<sub>50</sub> = 33 mg/L. EC<sub>50</sub> = 1.7 mg/L (*Pseudomonas putida*)



### 13. DISPOSAL CONSIDERATIONS

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**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.

**Container Handling and Disposal:** Rinse containers before disposal. Do not allow rinsate to enter the water systems. **EPA Hazardous Waste = YES**

**EPA RCRA Hazardous Waste Codes:** "C" = Corrosive

### 14. TRANSPORTATION INFORMATION

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**Note:** 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:**

Shipping name: Diethylenetriamine

Hazard Class: 8

ID#: UN2079

Packing Group: II

Labels: Corrosive

Emergency Guide#: 154

### 15. REGULATORY INFORMATION

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**Inventory Status:**

US (TSCA): Yes

Canada (DSL): Yes

Europe (EINECS/ELINCS): Yes

Australia (AICS): Yes

Japan (MITI): Yes

Korea (KECL): Yes

Philippines (PICCS): Yes

Where: Yes = all ingredients are listed on the inventory, Exempt = All ingredients are either on the inventory or exempt from the requirements of listing, No = Not determined, or one or more ingredients are not on the inventory and are not exempt from listing.

**SARA Title III Hazard Classes:**

Fire Hazard: No

Reactive Hazard: No

Release of Pressure: No

Acute Health Hazard: Yes

Chronic Health Hazard: No



## **15. REGULATORY INFORMATION (continued)**

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**SARA Extremely Hazardous Substances/CERCLA Hazardous Substances:** None

**California Proposition 65:** This product does not contain any components that are regulated under Proposition 65.

## **16. OTHER INFORMATION**

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### **National Fire Protection Association (“NFPA”) Hazard Ratings:**

Health: 3 (Severe)

Flammability: 1 (Slight)

Instability: 0 (Minimal)

### **National Paint and Coatings Hazardous Materials Identification System (“HMIS”) Hazard Ratings:**

Health: 3 (Severe)

Flammability: 1 (Slight)

Physical Hazard: 0 (Minimal)

**Reason for Revision(s):** New MSDS

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**END OF MATERIAL SAFETY DATA SHEET**