MATERIAL SAFETY DATA SHEET

HEPA - S200

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Chemical Name: Amine Blend
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

Chemical Name	CAS #	OSHA Hazardous(Y/N)	Concentration (%)
Polyethylene amines	68131-73-7	Y	50
Pentaethylenehexamine	4067-16-7	Y	40
Tetraethylenepentamine	112-57-2	Y	10

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: CAUSES BURNS. CORROSIVE TO EYES, SKIN AND RESPIRATORY TRACT. MAY BE TOXIC BY INHALTION OF AEROSOL. MAY CAUSE SENSITIZATION BY INHALATION AND SKIN CONTACT.

Physical Appearance and Odor: Dark-yellow liquid, ammonia-like odor

POTENTIAL HEALTH EFFECTS:
Acute Eye: Corrosive to eyes.
Acute Skin: Corrosive to skin. May cause sensitization.
Acute Inhalation: Aerosol may be toxic if inhaled. Corrosive to respiratory tract. May cause sensitization.
Acute Ingestion: Corrosive to gastrointestinal tract.
Chronic Effects: None known.

4. FIRST AID MEASURES

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

4. FIRST AID MEASURES (continued)

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: Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis.
Notes to Physician: All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be give to the possibility that overexposure to materials other than this product may have occurred. Treat symptomatically. If burns are present, treat as any thermal burn after decontamination. If necessary, evacuation of the stomach contents should be undertaken by means carrying the least likelihood of aspiration (e.g. gastric lavage in combination with endotracheal intubation). No specific antidote available.

5. FIRE FIGHTING MEASURES

Flash point: 363F (184C)
Autoignition Temperature: >572F (>300C)
Flammability limits (vol/vol%): Lower: Not determined Upper: Not determined
Extinguishing Media: water spray, fog, dry chemical, foam, CO_2
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. Water used to extinguish fires should not be allowed to enter the drainage system.
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 or foam onto burning material; this may cause splattering and spread of the fire.
Hazardous Decomposition Materials Under Fire Conditions: Oxides of carbon, oxides of nitrogen, ammonia

6. ACCIDENTAL RELEASE MEASURES

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

Maximum Storage Temperatures: Store at <50C (<122F)
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. Transfer and handle product only in a closed system. Do not use copper and copper-containing materials in process equipment.
Storage: Store in tightly-closed, original container under nitrogen. Store in an area that is cool, dry, dark and well-ventilated.

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.

Exposure Guidelines: The following limits apply to components of this material.
Chemical
None

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. When aerosols may be present, a combined organic vapor cartridge/HEPA should be used.
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

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

Physical Appearance: Dark-yellow liquid
Odor: Ammonia-like odor
pH: approx. 12 @ 10% aq.

9. PHYSICAL AND CHEMICAL PROPERTIES (continued)

Specific Gravity: 1.02 g/ml
Water Solubility: Miscible
Melting Point Range: Not determined
Boiling Point Range: >662F (>350C)
Freezing Point Range: Not determined
Vapor Pressure: <0.001 kPa@68F (20C)
Vapor Density: Not determined

10. STABILITY AND REACTIVITY

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. This product may react violently with water.
Hazardous Decomposition Products: Oxides of carbon, oxides of nitrogen, ammonia.
Hazardous Polymerization: Not applicable

11. TOXICOLOGICAL INFORMATION

Acute Eye Irritation: Corrosive. (Data for Polyethylene amines).
Acute Skin Irritation: Corrosive. Positive dermal sensitizer. (Data for Polyethylene amines).
Acute Dermal Toxicity: LD50=660 mg/kg, rabbit (Data for Tetraethylenepentamine).
Acute Respiratory Irritation: Highly irritating. Positive respiratory sensitizer. (Data for Polyethylene amines).
Acute Inhalation Toxicity: No data available. However, 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: LD50 =>2000 mg/kg, male rat, 1350-2000 mg/kg, female rat. (Data for Polyethylene amines).
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: 96hr LC50 = 100 mg/L (guppy). 48hr EC50 = 2 mg/L (daphnia.) 72hr IC50 = 0.2mg/L (algae.) EC50 = 5 mg/L (bacteria = pseudomonas putida) EC50 = 319 mg/L (bacteria = nitrifying bacteria). (All results are data for Polyethylene amines).
Chemical Fate Information: Not readily biodegradable. EC50=3200 mg/L (activated sludge). (Data for Polyethylene amines).

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.

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

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: Polyamines, liquid, corrosive, n.o.s.
Hazard Class: 8
ID#: UN2735
Packing Group: III
Labels: Corrosive
Emergency Guide#: 153

15. REGULATORY INFORMATION

Inventory Status:

US (TSCA): Yes
Canada (DSL): Yes
Europe (EINECS/ELINCS): Yes
Australia (AICS): Yes
Japan (MITI): No
Korea (KECL): No
Philippines (PICCS): No

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.

15. REGULATORY INFORMATION (continued)

SARA Title III Hazard Classes:

Fire Hazard: No

Reactive Hazard: No

Release of Pressure: No

Acute Health Hazard: Yes

Chronic Health Hazard: Yes

SARA Extremely Hazardous Substances/CERCLA Hazardous Substances: Unlisted Hazardous Wastes – Characteristic of Corrosivity (CERCLA/SARA RQ = 100 lbs)

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

16. OTHER INFORMATION

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)

Reactivity: 0 (Minimal)

Reason for Revision(s): New MSDS

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END OF MATERIAL SAFETY DATA SHEET