

## MATERIAL SAFETY DATA SHEET

Date Printed: 03/31/2008

Date Updated: 02/02/2006

Version 1.6

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Section 1 - Product and Company Information

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Product Name ETHYLAMINE, 97%  
Product Number 243191  
Brand ALDRICH

Company Sigma-Aldrich  
Address 3050 Spruce Street  
SAINT LOUIS MO 63103 US

Technical Phone: 800-325-5832  
Fax: 800-325-5052  
Emergency Phone: 314-776-6555

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Section 2 - Composition/Information on Ingredient

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Substance Name	CAS #	SARA 313
ETHYLAMINE	75-04-7	No

Formula C2H7N  
Synonyms Aethylamine (German) \* Aminoethane \*  
1-Aminoethane \* Ethylamine (ACGIH:OSHA) \*  
Etilamina (Italian) \* Etyloamina (Polish) \*  
Monoethylamine

RTECS Number: KH2100000

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Section 3 - Hazards Identification

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## EMERGENCY OVERVIEW

Flammable (USA) Extremely Flammable (EU). Toxic.  
Toxic by inhalation, in contact with skin and if swallowed.  
Irritating to respiratory system. Risk of serious damage to eyes.  
Readily absorbed through skin. Lachrymator. Target organ(s):  
Liver. Kidneys.

## HMIS RATING

HEALTH: 2\*  
FLAMMABILITY: 4  
REACTIVITY: 1

## NFPA RATING

HEALTH: 2  
FLAMMABILITY: 4  
REACTIVITY: 1

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

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Section 4 - First Aid Measures

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## ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is  
conscious. Call a physician.

#### INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

#### DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious amounts of water.

#### EYE EXPOSURE

Contamination of the eyes should be treated by immediate and prolonged irrigation with copious amounts of water. Assure adequate flushing of the eyes by separating the eyelids with fingers.

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### Section 5 - Fire Fighting Measures

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#### FLAMMABLE HAZARDS

Flammable Hazards: Yes

#### EXPLOSION HAZARDS

May form explosive mixtures with air Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

#### FLASH POINT

- 34.6 °F - 37.0 °C Method: closed cup

#### EXPLOSION LIMITS

Lower: 3.5 % Upper: 14 %

#### AUTOIGNITION TEMP

383 °C

#### FLAMMABILITY

N/A

#### EXTINGUISHING MEDIA

Suitable: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

#### FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.  
Specific Hazard(s): Extremely flammable. Vapor may travel considerable distance to source of ignition and flash back.  
Emits toxic fumes under fire conditions.  
Specific Method(s) of Fire Fighting: Do not extinguish burning gas if flow cannot be shut off immediately. Use water spray or fog nozzle to keep cylinder cool. Move cylinder away from fire if there is no risk.

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### Section 6 - Accidental Release Measures

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#### PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area and keep personnel upwind. Shut off all sources of ignition. Shut off leak if there is no risk.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Do not breathe gas. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed. Keep away from heat, sparks, and open flame. Use with equipment rated for cylinder pressure, and of compatible materials of construction. Close valve when not in use and when empty. Make sure cylinder is properly secured when in use or stored Cylinder temperature should not exceed 125°F (52°C).

Unsuitable: Store away from heat and direct sunlight

SPECIAL REQUIREMENTS

Moisture sensitive. Cool to 0°C before opening. Contents under pressure.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Warning: suck-back into cylinder may cause rupture. Use back-flow-preventive device in piping.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.  
Hand: Compatible chemical-resistant gloves.  
Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Wash thoroughly after handling.

EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA	ACGIH	STEL	15 PPM
Remarks: Skin			
USA	ACGIH	TWA	5 PPM
USA	MSHA Standard-air	TWA	10 PPM (18 MG/M3)
USA	OSHA.	PEL	8H TWA 10 PPM (18 MG/M3)
New Zealand OEL			
Remarks: check ACGIH TLV			
USA	NIOSH	TWA	10 PPM

EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	5 MG/M3

Poland NDSch 15 MG/M3  
Poland NDSP -

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## Section 9 - Physical/Chemical Properties

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Appearance Physical State: Gas  
Color: Colorless

Property	Value	At Temperature or Pressure
Molecular Weight	45.09 AMU	
pH	N/A	
BP/BP Range	16.6 °C	
MP/MP Range	- 81.0 °C	
Freezing Point	N/A	
Vapor Pressure	874 mmHg	20 °C
Vapor Density	1.56 g/l	15 °C
Saturated Vapor Conc.	N/A	
SG/Density	0.68 g/cm3	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	- 34.6 °F - 37.0 °C	Method: closed cup
Explosion Limits	Lower: 3.5 % Upper: 14 %	
Flammability	N/A	
Autoignition Temp	383 °C	
Refractive Index	N/A	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

N/A = not available

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## Section 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

Conditions of Instability: Moisture sensitive.

Conditions to Avoid: Tin.

Materials to Avoid: Strong oxidizing agents, Nickel Copper, Copper alloys, Strong acids, Zinc Ethylamine, anhydrous is packaged in steel cylinders. Cool to 0°C before opening. Incompatible with silver, mercury and brass.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides.

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## Section 11 - Toxicological Information

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### ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.

Skin Absorption: Readily absorbed through skin. May be harmful if absorbed through the skin.

Eye Contact: Causes eye irritation. Exposure to vapor, even in low concentrations, can cause lacrimation, conjunctivitis, and corneal edema when vapor is absorbed into the tissue of the eye. The corneal edema may give rise to a perception of a "halo", "blue haze", or "fog" around lights. This effect is usually reversible although it may last a couple of days.

Inhalation: Material is irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled. Can cause rapid suffocation.

Ingestion: May be harmful if swallowed.

#### TARGET ORGAN(S) OR SYSTEM(S)

Liver. Kidneys. Eyes. Lungs.

#### SIGNS AND SYMPTOMS OF EXPOSURE

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema.

Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

#### TOXICITY DATA

Oral

Rat

400 mg/kg

LD50

Inhalation

Rat

5,540 ppm

LC50

Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste): Eye: Corneal damage. Lungs, Thorax, or Respiration: Dyspnea.

Skin

Rabbit

390 UL/KG

LD50

Inhalation

Mammal

2,300 mg/m<sup>3</sup>

LC50

#### IRRITATION DATA

Skin

Rabbit

500 mg

24H

Remarks: Mild irritation effect

Eyes

Rabbit

5 mg

Remarks: Severe irritation effect

Eyes  
Rabbit  
50 ppm  
10D  
I  
Remarks: Severe irritation effect

Eyes  
Rabbit  
0.25 mg  
24H  
Remarks: Severe irritation effect

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## Section 12 - Ecological Information

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No data available.

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## Section 13 - Disposal Considerations

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APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION  
Observe all federal, state, and local environmental regulations.  
Contact the Drug Enforcement Administration concerning the disposal of controlled substances.

APPROPRIATE METHOD OF DISPOSAL OF CONTAMINATED PACKAGING  
Caution: no-return cylinder. Do not reuse. Empty cylinder will contain hazardous residue. Follow proper disposal techniques.

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## Section 14 - Transport Information

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DOT  
Proper Shipping Name: Ethylamine  
UN#: 1036  
Class: 2.1  
Packing Group: None  
Hazard Label: Flammable gas  
PIH: Not PIH

IATA  
Proper Shipping Name: Ethylamine  
IATA UN Number: 1036  
Hazard Class: 2.1  
Not Allowed - Aircraft: Cargo aircraft only. Not permitted on passenger aircraft.

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## Section 15 - Regulatory Information

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EU DIRECTIVES CLASSIFICATION  
Symbol of Danger: F+-Xi  
Indication of Danger: Extremely Flammable. Irritant.  
R: 12-36/37  
Risk Statements: Extremely flammable. Irritating to eyes and respiratory system.  
S: 16-26-29  
Safety Statements: Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Do not empty into drains.

US CLASSIFICATION AND LABEL TEXT  
Indication of Danger: Flammable (USA) Extremely Flammable (EU). Toxic.  
Risk Statements: Toxic by inhalation, in contact with skin and

if swallowed. Irritating to respiratory system. Risk of serious damage to eyes.

Safety Statements: Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear eye/face protection. In case of insufficient ventilation, wear suitable respiratory equipment. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US Statements: Readily absorbed through skin. Lachrymator.  
Target organ(s): Liver. Kidneys.

#### UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

TSCA INVENTORY ITEM: Yes

#### CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

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#### Section 16 - Other Information

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#### DISCLAIMER

For R&D use only. Not for drug, household or other uses.

#### WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.  
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