

## Material Safety Data Sheet

Date Printed: 02/JUN/2005

Date Updated: 13/MAR/2004

Version 1.5

According to 91/155/EEC

Classified as Hazardous according to the criteria of EU Annex 1 and NOHSC.

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1 - Product and Company Information

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Product Name	TRIETHYLAMINE
Product Number	T0886
Company	Sigma-Aldrich Pty, Ltd Unit 2, 14 Anella Avenue Castle Hill NSW 1765 Australia
Technical Phone #	+61 2 9841 0555
Fax	+61 2 9841 0500
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2 - Composition/Information on Ingredients

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Product Name	CAS #	EC no	Annex I Index Number
TRIETHYLAMINE	121-44-8	204-469-4	612-004-00-5
Formula	C6H15N		
Molecular Weight	101.19 AMU		
Synonyms	(Diethylamino)ethane * N,N-Diethylethanamine * Ethanamine, N,N-diethyl- * TEN * Triethylamin (German) * Triethylamine (ACGIH:OSHA) * Trietilamina (Italian)		

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3 - Hazards Identification

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## SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Highly flammable. Harmful by inhalation, in contact with skin and if swallowed. Causes severe burns.

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4 - First Aid Measures

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## AFTER INHALATION

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

## AFTER SKIN CONTACT

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

## AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

## AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician. Do not induce vomiting.

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## 5 - Fire Fighting Measures

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### EXTINGUISHING MEDIA

Suitable: Carbon dioxide, dry chemical powder, or appropriate foam.

### SPECIAL RISKS

Specific Hazard(s): Flammable liquid. Vapor may travel considerable distance to source of ignition and flash back.

Emits toxic fumes under fire conditions.

Explosion Hazards: Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

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## 6 - Accidental Release Measures

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### PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area. Shut off all sources of ignition. Use nonsparking tools.

### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

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

### METHODS FOR CLEANING UP

Cover with dry lime or soda ash, pick up, keep in a closed container, and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

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## 7 - Handling and Storage

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### HANDLING

Directions for Safe Handling: Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

### STORAGE

Conditions of Storage: Keep tightly closed. Keep away from heat, sparks, and open flame. Store in a cool dry place.

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## 8 - Exposure Controls / Personal Protection

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### ENGINEERING CONTROLS

Use only in a chemical fume hood. Safety shower and eye bath. Use nonsparking tools.

### GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

### EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	3 mg/m3
Poland		NDSch	9 mg/m3
Poland		NDSP	

## EXPOSURE LIMITS - EUROPEAN UNION

Source	Type	Value
OEL	OEL	8.4 mg/m3 2 ppm

Remarks: Skin

## EXPOSURE LIMITS - DENMARK

Source	Type	Value
OEL	TWA	4.1 mg/m3 1 ppm

Remarks: H

## EXPOSURE LIMITS - GERMANY

Source	Type	Value
TRGS 900	OEL	8 mg/m3 1.9 ppm

Remarks: =1=

Remarks: 20,36,TRGS 901-93

## EXPOSURE LIMITS - NORWAY

Source	Type	Value
	OEL	8 mg/m3 2 ppm

Remarks: H

## EXPOSURE LIMITS - SWEDEN

Source	Type	Value
	LLV (Level)	8 mg/m3 2 ppm

## EXPOSURE LIMITS - SWITZERLAND

Source	Type	Value
OEL	OEL	4.2 mg/m3 1 ppm

## EXPOSURE LIMITS - UNITED KINGDOM

Source	Type	Value
OEL	OEL	42 mg/m3 10 ppm
OEL	STEL	63 mg/m3 15 ppm

## PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

Special Protective Measures: Faceshield (8-inch minimum).

## 9 - Physical and Chemical Properties

Appearance	Physical State: Clear liquid Color: Colorless	
Property	Value	At Temperature or Pressure
pH	12.7	15 °C Concentration: 100 g/l
BP/BP Range	88.8 °C	760 mmHg
MP/MP Range	-115 °C	
Flash Point	-15 °C	Method: closed cup
Flammability	N/A	

Autoignition Temp	312 °C	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	Lower: 1.2 %	
	Upper: 8 %	
Vapor Pressure	51.75 mmHg	20 °C
SG/Density	0.726 g/cm3	
Partition Coefficient	Log Kow: 1.15	
Viscosity	< 0.001 Pas	20 °C
Vapor Density	3.5 g/l	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	< 0.5 %	
Surface Tension	20.7 mN/m	20 °C
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	Other Solvents: WATER (133G/L), ETHANOL ACETONE, ETHYL ETHERMINERAL OIL	

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## 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, and nitrogen oxides.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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## 11 - Toxicological Information

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RTECS NUMBER: YE0175000

### ACUTE TOXICITY

LD50

Oral

Rat

730 mg/kg

LD50

Skin

Rabbit

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LC50

Inhalation

Rat

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4 H

LD50

Oral

Rat

460 mg/kg

LD50

Oral

Mouse

546 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity).  
Behavioral:Excitement. Behavioral:Muscle weakness.

LC50

Inhalation

Mouse

6,000 mg/m3

Remarks: Behavioral:Somnolence (general depressed activity).  
Lungs, Thorax, or Respiration:Other changes. Liver:Fatty liver  
degeneration.

LD50

Intraperitoneal

Mouse

405 MG/KG

LD50

Skin

Rabbit

570 UL/KG

LC50

Inhalation

Mammal

6,000 mg/m3

#### IRRITATION DATA

Skin

Rabbit

Remarks: Corrosive.

Skin

Rabbit

365 mg

Remarks: Open irritation test

#### 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.

#### ROUTE OF EXPOSURE

Skin Contact: Causes burns.

Skin Absorption: Harmful if absorbed through skin. Readily  
absorbed through skin.

Eye Contact: Causes burns.

Inhalation: May be harmful if inhaled. Material is extremely  
destructive to the tissue of the mucous membranes and upper  
respiratory tract.

Ingestion: Harmful if swallowed.

#### TARGET ORGAN INFORMATION

Central nervous system. Liver. Kidneys. Heart.

#### CHRONIC EXPOSURE - MUTAGEN

Rat

1 MG/M3  
Inhalation  
Cytogenetic analysis

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## 12 - Ecological Information

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### ECOTOXICOLOGICAL EFFECTS

Test Type: LC50 Bacteria  
Time: 17 h  
Value: 95 mg/l

Test Type: EC50 Daphnia  
Species: Daphnia magna  
Time: 48 h  
Value: 200 mg/l

Test Type: LC50 Fish  
Species: Pimephales promelas (Fathead minnow)  
Time: 96 h  
Value: 43.7 mg/l

Test Type: LC50 Fish  
Species: Onchorhynchus mykiss (Rainbow trout)  
Time: 60 d  
Value: 126 - 150 mg/l

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## 13 - Disposal Considerations

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### SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

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## 14 - Transport Information

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### RID/ADR

UN#: 1296  
Class: 3  
PG: II  
Proper Shipping Name: Triethylamine

### IMDG

UN#: 1296  
Class: 3  
PG: II  
Subrisk: 8  
Proper Shipping Name: Triethylamine  
Marine Pollutant: No  
Severe Marine Pollutant: No

### IATA

UN#: 1296  
Class: 3  
PG: II  
Subrisk: 8  
Proper Shipping Name: Triethylamine  
Inhalation Packing Group I: No

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## 15 - Regulatory Information

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CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

ANNEX I INDEX NUMBER: 612-004-00-5

INDICATION OF DANGER: F C

Highly Flammable. Corrosive.

R-PHRASES: 11 20/21/22 35

Highly flammable. Harmful by inhalation, in contact with skin and if swallowed. Causes severe burns.

S-PHRASES: 3 16 26 29 36/37/39 45

Keep in a cool place. 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. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

COUNTRY SPECIFIC INFORMATION

Germany

WGK: 1

SWITZERLAND

SWISS POISON CLASS: 3

NORWAY

Labelling for organic solvents where the package is 1liter or more.

YL-tall m3/l: 127750

YL-group: 5

Safety phrases: 38 42 210

In case of insufficient ventilation, wear suitable respiratory equipment. During fumigation/spraying wear suitable respiratory equipment. Use compressed air- or fresh air line breathing apparatus in confined spaces.

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16 - Other Information

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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. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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