

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : **Triethylamine**
Product Number : T0886
Brand : Sigma-Aldrich
Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C₆H₁₅N
Molecular Weight : 101.19 g/mol

CAS-No.	EC-No.	Index-No.	Concentration [%]
Triethylamine			
121-44-8	204-469-4	612-004-00-5	-

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Flammable Liquid
Delayed target organ effects
Highly toxic by skin absorption
Corrosive

Target Organs

Heart, Kidney, Liver, Central nervous system

HMIS Classification

Health Hazard: 3
Chronic Health Hazard: *
Flammability: 3
Physical hazards: 0

NFPA Rating

Health Hazard: 3
Fire : 3
Reactivity Hazard: 0

Potential Health Effects

Inhalation	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. May cause respiratory tract irritation.
Skin	Causes skin burns. May be fatal if absorbed through skin.
Eyes	Causes eye burns. May cause eye irritation.
Ingestion	May be harmful if swallowed. Causes burns.

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Continue rinsing eyes during transport to hospital. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point -15 °C (5 °F) - closed cup

Ignition temperature 312 °C (594 °F)

Suitable extinguishing media

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.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods for cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

Handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in cool place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Update	Basis
Triethylamine	121-44-8	TWA	1 ppm 4.1 mg/m ³	1995-05-23	US. American Conference of Governmental and Industrial Hygienists Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004: Committees on Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs)
Remarks	Adopted Values enclosed are those for which changes are proposed. Consult the Notice of Intended Changes for current proposal.\ line See Notice of Intended Changes.				
		STEL	3 ppm 12 mg/m ³	1995-05-23	US. American Conference of Governmental and Industrial Hygienists Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004: Committees on Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs)
	Adopted Values enclosed are those for which changes are proposed. Consult the Notice of Intended Changes for current proposal.\ line See Notice of Intended Changes.				
		TWA	10 ppm 40 mg/m ³	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A
		STEL	15 ppm 60 mg/m ³	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A
		TWA	25 ppm 100 mg/m ³	1993-06-30	US. Department of Labor - Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PEL) 29 CFR 1910.1000 Air Contaminants.

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (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. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves.

Eye protection

Safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid, clear
Colour	colourless
Odour	amine-like

Safety data

pH	12.7 at 100 g/l at 15 °C (59 °F)
Melting point	-115 °C (-175 °F)
Boiling point	88.80 °C (191.84 °F) at 1,013 hPa (760 mmHg)
Flash point	-15 °C (5 °F) - closed cup
Ignition temperature	312 °C (594 °F)
Lower explosion limit	1.2 %(V)
Upper explosion limit	8 %(V)
Vapour pressure	68.99 hPa (51.75 mmHg) at 20 °C (68 °F) 85.06 hPa (63.80 mmHg) at 30 °C (86 °F)
Density	0.7260 g/cm ³
Water solubility	no data available
Partition coefficient (n-octanol/water)	log Pow: 1.15

10. STABILITY AND REACTIVITY

Storage stability

Stable under recommended storage conditions.

Conditions to avoid

Heat, flames and sparks.

Materials to avoid

Strong oxidizing agents

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions.

Carbon oxides, nitrogen oxides (NO_x)

Hazardous reactions

Vapours may form explosive mixture with air.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 730 mg/kg

LC50 Inhalation - rat - 4 h - 4,200 - 8,400 mg/m³

LD50 Dermal - rabbit - 200 - 2,000 mg/kg

Irritation and corrosion

Skin - rabbit - Extremely corrosive and destructive to tissue.

Sensitization

no data available

Chronic exposure

no data available

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting

Potential Health Effects

Inhalation	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. May cause respiratory tract irritation.
Skin	Causes skin burns. May be fatal if absorbed through skin.
Eyes	Causes eye burns. May cause eye irritation.
Ingestion	May be harmful if swallowed. Causes burns.
Target Organs	Heart, Kidney, Liver, Central nervous system,

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 43.7 mg/l - 96 h
	LC50 - Oncorhynchus mykiss (rainbow trout) - 126 - 150 mg/l - 60 d
	LOEC - Brachydanio rerio (zebra fish) - 320 mg/l - 7 d
Toxicity to daphnia and other aquatic invertebrates.	EC50 - Daphnia magna (Water flea) - 200 mg/l - 48 h
Toxicity to bacteria	LC50 - Bacteria - 95 mg/l - 17 h

Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS**Product**

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. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**DOT (US)**

UN-No.: 1296 Class: 3 (8) Packing group: II
Proper shipping name: Triethylamine

IMDG

UN-No.: 1296 Class: 3 (8) Packing group: II EMS-No: F-E, S-C
Proper shipping name: TRIETHYLAMINE
Marine pollutant: No

IATA

UN-No.: 1296 Class: 3 (8) Packing group: II
Proper shipping name: Triethylamine

15. REGULATORY INFORMATION**OSHA Hazards**

Flammable Liquid, Delayed target organ effects, Highly toxic by skin absorption, Corrosive

TSCA Status

On TSCA Inventory

DSL Status

All components of this product are on the Canadian DSL list.

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

	CAS-No.	Revision Date
Triethylamine	121-44-8	1995-01-01

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Triethylamine	121-44-8	1995-01-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Triethylamine	121-44-8	1995-01-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Triethylamine	121-44-8	1995-01-01

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION**Further information**

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