Material Safety Data Sheet
Triethylamine, 99%

ACC# 95656

Section 1 - Chemical Product and Company Identification

MSDS Name: Triethylamine, 99%
Catalog Numbers: AC157910000, AC157910010, AC157910025, AC157910050, NC9505208, NC9505558
Synonyms: TETN; N,N-Diethylethanamine; TEA.
Company Identification:
Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
121-44-8	Triethylamine	99	204-469-4

Hazard Symbols: F C
Risk Phrases: 11 20/21/22 35

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid. Flash Point: 16 deg F. **Danger!** Causes eye and skin burns. May cause severe respiratory tract irritation with possible burns. May cause severe digestive tract irritation with possible burns. Harmful if swallowed or absorbed through the skin. Lachrymator (substance which increases the flow of tears). Extremely flammable liquid and vapor. Vapor may cause flash fire. May be harmful if inhaled.
Target Organs: Kidneys, liver, lungs, cardiovascular system, eyes, skin, mucous membranes.

Potential Health Effects

Eye: Causes eye burns. Lachrymator (substance which increases the flow of tears). May cause 'blue haze' or 'halo vision'.
Skin: Harmful if absorbed through the skin. Causes skin burns. Allergic reactions have been reported.
Ingestion: Harmful if swallowed. May cause severe and permanent damage to the digestive tract. May cause systemic effects.
Inhalation: Irritation may lead to chemical pneumonitis and pulmonary edema. Causes chemical burns to the respiratory tract. May cause systemic effects. Inhalation of vapor can cause visual field changes, like foggy vision, blue haze, and halo phenomena.
Chronic: Prolonged or repeated skin contact may cause dermatitis. Effects may be delayed.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately.
Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.
Ingestion: If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Water may be ineffective. Material is lighter than water and a fire may be spread by the use of water. Extremely flammable liquid and vapor. Vapor may cause flash fire. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.
Extinguishing Media: Use water spray, dry chemical, "alcohol resistant" foam, or carbon dioxide.
Flash Point: 16e deg F (-8.89 deg C)
Autoignition Temperature: 480 deg F (248.89 deg C)
Explosion Limits, Lower:1.2%
Upper: 8.0%
NFPA Rating: (estimated) Health: 3; Flammability: 3; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Approach spill from upwind. Use water spray to cool and disperse vapors and protect personnel.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Discard contaminated shoes. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Do not breathe vapor. Use only with adequate ventilation. Keep away from heat, sparks and flame.
Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Keep container closed when not in use. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from strong acids. Keep away from organic halogens.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Triethylamine	1 ppm TWA; 3 ppm STEL; skin - potential for cutaneous absorption	no established RELs - see Appendix D 200 ppm IDLH	25 ppm TWA; 100 mg/m3 TWA

OSHA Vacated PELs: Triethylamine: 10 ppm TWA; 40 mg/m3 TWA; 15 ppm STEL; 60 mg/m3 STEL
Personal Protective Equipment
Eyes: Wear chemical goggles and face shield.
Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: A respiratory protection program that meets OSHA's 29 CFR §1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: clear, colorless
Odor: Strong ammoniacal odor
pH: Not available.
Vapor Pressure: 54 mm Hg @20 deg C
Vapor Density: 3.5 (air=1)
Evaporation Rate:5.6 (Butyl acetate=1)
Viscosity: Not available.
Boiling Point: 89.9 deg C
Freezing/Melting Point:-114.7 deg C
Decomposition Temperature: Not available.
Solubility: Slightly soluble.
Specific Gravity/Density: 0.72
Molecular Formula:C6H15N
Molecular Weight:101.19

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Ignition sources, excess heat.
Incompatibilities with Other Materials: Strong oxidizing agents, strong acids, alcohols, halogenated agents, phenols, aldehydes, ketones, some metals.
Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, carbon dioxide, amines.
Hazardous Polymerization: Has not been reported

Section 11 - Toxicological Information

RTECS#:
CAS# 121-44-8: YE0175000
LD50/LC50:
CAS# 121-44-8:
Inhalation, mouse: LC50 = 6 gm/m3;
Oral, mouse: LD50 = 546 mg/kg;
Oral, rat: LD50 = 460 mg/kg;
Skin, rabbit: LD50 = 570 uL/kg;
Carcinogenicity:
CAS# 121-44-8:
ACGIH: A4 - Not Classifiable as a Human Carcinogen
Epidemiology: Ocular injuries consisting of corneal opacities with cloudi ng and swelling have been reported in workers exposed to TEA. Exposure to TEA at 5 ppm for 8 hours can induce tran sient corneal edema which resolves within hours after te rmination of exposure.
Teratogenicity: Fetotoxicity occurred at TEA doses less than those associated with maternal intoxication when TEA was injected into pregnant rabbits. No studies concerning the potential developmental toxicity of TEA by relevant routes of exposure have been published.
Reproductive Effects: No effects on reproductive parameters could be detected when rats consumed up to 500 ppm TEA in drinking water for 3 generations.
Neurotoxicity: No information found.
Mutagenicity: No information found.
Other Studies: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity: Fish: Creek chub: 80mg/L; 24H

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: CAS# 121-44-8: waste number U404.

Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	TRIETHYLAMINE				TRIETHYLAMINE
Hazard Class:	3				3(9.2)
UN Number:	UN1296				UN1296
Packing Group:	II				II

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 121-44-8 is listed on the TSCA inventory.
Health & Safety Reporting List
CAS# 121-44-8: Effective Date: January 13, 1984; Sunset Date: January 13, 1994
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
SARA

Section 302 (RQ)
CAS# 121-44-8: final RQ = 5000 pounds (2270 kg)
Section 302 (TPQ)
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 121-44-8: acute, chronic, flammable.
Section 313
This material contains Triethylamine (CAS# 121-44-8, 99%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.
Clean Air Act:
CAS# 121-44-8 is listed as a hazardous air pollutant (HAP). This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.
Clean Water Act:
CAS# 121-44-8 is listed as a Hazardous Substance under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.
STATE
CAS# 121-44-8 can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania,

Minnesota, Massachusetts.
California No Significant Risk Level: None of the chemicals in this product are listed.

European / International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:
F C

Risk Phrases:
R 11 Highly flammable.
R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R 35 Causes severe burns.

Safety Phrases:
S 16 Keep away from sources of ignition - No smoking.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 29 Do not empty into drains.
S 3 Keep in a cool place.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)
CAS# 121-44-8: 1

Canada - DSL/NDSL
CAS# 121-44-8 is listed on Canada's DSL List.

Canada - WHMIS
This product has a WHMIS classification of B2, D1B, E.

Canadian Ingredient Disclosure List
CAS# 121-44-8 is listed on the Canadian Ingredient Disclosure List.

Exposure Limits
CAS# 121-44-8: OEL-AUSTRALIA:TWA 10 ppm (40 mg/m3);STEL 15 ppm (60 mg/m3) OEL-BELGIUM:TWA 10 ppm (41 mg/m3);STEL 15 ppm (62 mg/m3) OEL-DENMARK:TWA 10 ppm (40 mg/m3) OEL-FINLAND:TWA 10 mg/m3;STEL 20 mg/m3;Skin OEL-FRANCE:STEL 10 ppm (40 mg/m3) OEL-GERMANY:TWA 10 ppm (40 mg/m3) OEL-HUNGARY:TWA 20 mg/m3;STEL 40 mg/m3 OEL-THE NETHERLANDS:TWA 5 ppm (20 mg/m3);STEL 10 ppm;Skin OEL-THE PHILIPPINES:TWA 25 ppm (100 mg/m3) OEL-RUSSIA:STEL 10 mg/m3;Skin OEL-SWEDEN:TWA 2 ppm (8 mg/m3); STEL 10 ppm (40 mg/m3) OEL-SWITZERLAND:TWA 10 ppm (40 mg/m3);STEL 20 ppm (80 mg/m3) OEL-TURKEY:TWA 25 ppm (100 mg/m3) OEL-UNITED KINGDOM: TWA 10 ppm (40 mg/m3);STEL 15 ppm (60 mg/m3) OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

Section 16 - Additional Information

MSDS Creation Date: 11/13/1997
Revision #5 Date: 4/26/2002