1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Triethylamine
Product Number: T0886
Brand: Sigma-Aldrich
Supplier: 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
Preparation Information: Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Flammable liquid, Target Organ Effect, Harmful by ingestion., Toxic by skin absorption, Corrosive

Target Organs
Central nervous system, Liver, Kidney, Heart

GHS Classification
Flammable liquids (Category 2)
Acute toxicity, Oral (Category 4)
Acute toxicity, Inhalation (Category 3)
Acute toxicity, Dermal (Category 3)
Skin corrosion (Category 1A)
Serious eye damage (Category 1)
Acute aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)
H225: Highly flammable liquid and vapour.
H302: Harmful if swallowed.
H311 + H331: Toxic in contact with skin or if inhaled
H314: Causes severe skin burns and eye damage.
H402: Harmful to aquatic life.

Precautionary statement(s)
P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P261: Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if
present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor/physician.

**P310**

**HMIS Classification**

<table>
<thead>
<tr>
<th>Health hazard:</th>
<th>3</th>
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<tbody>
<tr>
<td>Chronic Health Hazard:</td>
<td>*</td>
</tr>
<tr>
<td>Flammability:</td>
<td>3</td>
</tr>
<tr>
<td>Physical hazards:</td>
<td>0</td>
</tr>
</tbody>
</table>

**NFPA Rating**

<table>
<thead>
<tr>
<th>Health hazard:</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire:</td>
<td>3</td>
</tr>
<tr>
<td>Reactivity Hazard:</td>
<td>0</td>
</tr>
</tbody>
</table>

**Potential Health Effects**

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

**Skin** Toxic if absorbed through skin. Causes skin burns.

**Eyes** Causes eye burns. Causes severe eye burns.

**Ingestion** Harmful if swallowed.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Formula</th>
<th>C₆H₁₅N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Weight</td>
<td>101.19 g/mol</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triethylamine</td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>121-44-8</td>
</tr>
<tr>
<td>EC-No.</td>
<td>204-469-4</td>
</tr>
<tr>
<td>Index-No.</td>
<td>612-004-00-5</td>
</tr>
</tbody>
</table>

### 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. Take victim immediately to hospital. Consult a physician.

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

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

### 5. FIREFIGHTING MEASURES

**Conditions of flammability**
Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

**Suitable extinguishing media**
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for firefighters**
Wear self contained breathing apparatus for fire fighting if necessary.
Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid breathing vapours, 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. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe 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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triethylamine</td>
<td>121-44-8</td>
<td>TWA</td>
<td>1 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
<td></td>
<td>Visual impairment Not classifiable as a human carcinogen Danger of cutaneous absorption</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>3 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Visual impairment Not classifiable as a human carcinogen Danger of cutaneous absorption</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>10 ppm 40 mg/m3</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>15 ppm 60 mg/m3</td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>25 ppm 100 mg/m3</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
</tr>
</tbody>
</table>

The value in mg/m3 is approximate.

See Appendix D - Substances with No Established RELs

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. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

- **Full contact**
  - Material: Nitrile rubber
  - Minimum layer thickness: 0.4 mm
  - Break through time: 480 min
  - Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

- **Splash contact**
  - Material: Nitrile rubber
  - Minimum layer thickness: 0.2 mm
  - Break through time: 49 min
  - Material tested: Dermatril® P (KCL 743 / Aldrich Z677388, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Eye protection**
Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance**
- Form: liquid, clear
- Colour: colourless

**Safety data**
- **pH**: 12.7 at 100 g/l at 15 °C (59 °F)
- **Melting point/freezing point**: Melting point/range: -115 °C (-175 °F)
- **Boiling point**: 88.8 °C (191.8 °F)
- **Flash point**: -15 °C (5 °F) - closed cup
- **Ignition temperature**: 312 °C (594 °F)
- **Auto-ignition temperature**: no data available
- **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**: 0.726 g/mL at 25 °C (77 °F)
- **Water solubility**: no data available
- **Partition coefficient: n-octanol/water**: log Pow: 1.15
Relative vapour density  3.49 - (Air = 1.0)
Odour  amine-like
Odour Threshold  no data available
Evapouration rate  no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
Vapours may form explosive mixture with air.

Conditions to avoid
Heat, flames and sparks. Extremes of temperature and direct sunlight.

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 730 mg/kg

Inhalation LC50
LC50 Inhalation - rat - 4 h - 7.1 mg/l

Dermal LD50
LD50 Dermal - rabbit - 580 mg/kg

Other information on acute toxicity
no data available

Skin corrosion/irritation
Skin - rabbit - Extremely corrosive and destructive to tissue.

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitisation
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

**Teratogenicity**
no data available

**Specific target organ toxicity - single exposure (Globally Harmonized System)**
no data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**
no data available

**Aspiration hazard**
no data available

**Potential health effects**

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**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.

**Skin**
Toxic if absorbed through skin. Causes skin burns.

**Eyes**
Causes eye burns. Causes severe eye burns.

**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

**Synergistic effects**
no data available

**Additional Information**
RTECS: YE0175000

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12. **ECOLOGICAL INFORMATION**

**Toxicity**

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**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 - Danio 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

**Persistence and degradability**
no data available

**Bioaccumulative potential**
no data available

**Mobility in soil**
no data available

**PBT and vPvB assessment**
no data available

**Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life.

no data available

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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. Offer surplus and non-recyclable solutions to a licensed disposal company. 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 number: 1296  Class: 3 (8)  Packing group: II
Proper shipping name: Triethylamine
Reportable Quantity (RQ): 5000 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

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

IATA
UN number: 1296  Class: 3 (8)  Packing group: II
Proper shipping name: Triethylamine

15. REGULATORY INFORMATION

OSHA Hazards
Flammable liquid, Target Organ Effect, Harmful by ingestion., Toxic by skin absorption, Corrosive

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
The following components are subject to reporting levels established by SARA Title III, Section 313:

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SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

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Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
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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 Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.