1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Triethylamine
Product Number: T0866
Brand: Sigma-Aldrich
Supplier: Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63115
USA
Telephone: +1 800-355-5832
Fax: +1 800-355-5832
Emergency Phone #: (314) 775-6255
Preparation Information: Sigma-Aldrich Corporation
1-800-521-8958

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.
P256 Avoid breathing dust/ fume/ gas/ mist/ vapor/ spray.
P260 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P280 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301 IF IN CONTACT WITH EYES: Immediately call a Poison Center or doctor/ physician.
P303 IF IN CONTACT WITH SKIN: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 IF IN CONTACT WITH SKIN: Immediately call a Poison Center or doctor/ physician.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formulas: C₂H₅N
Molecular Weight: 101.10 g/mol

<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>204-409-4</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 flames/hot surfaces. No smoking.

Suitable extinguishing media
Use water spray, alcohol-resist 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 vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vaporess 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></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
<td>Visual impairment not classifiable as a human carcinogen</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Danger of cutaneous absorption</td>
<td></td>
</tr>
<tr>
<td>STEL</td>
<td></td>
<td>3 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Visual impairment not classifiable as a human carcinogen</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Danger of cutaneous absorption</td>
<td></td>
</tr>
<tr>
<td>TWA</td>
<td>10 ppm</td>
<td>60 mg/m³</td>
<td>USA. OSHA - TABLE 2-1 Limits for Air Contaminants</td>
<td>1910.1000</td>
</tr>
<tr>
<td>STEL</td>
<td>15 ppm</td>
<td>60 mg/m³</td>
<td>USA. OSHA - TABLE 2-1 Limits for Air Contaminants</td>
<td>1910.1000</td>
</tr>
<tr>
<td>TWA</td>
<td>25 ppm</td>
<td>100 mg/m³</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table 2-1</td>
<td>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 (M5) 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.

Immersion protection
Material: Nitric rubber
Minimum layer thickness: 0.4 mm
Break through time: > 480 min
Material tested: Camlasil® (Aldrich ZG77442, Size M)

Splash protection
Material: Nitric rubber
Minimum layer thickness: 0.2 mm
Break through time: > 30 min
Material tested: Dermat®® P (Aldrich ZG77288, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6569 873000, 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 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.

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: 88.6 °C (191.7 °F)
Boiling point: 212 °C (579 °F)
Autoignition temperature: No data available
Lower explos. limit: 1.0 % (V)
Upper explos. limit: 8.0 % (V)
Vapour pressure: 60.99 hPa (51.75 mmHg) at 20 °C (68 °F)
Density: 0.726 g/ml at 25 °C (77 °F)
Water solubility: 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 oxidising 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 carcinogenic 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

12. ECOLOGICAL INFORMATION

Toxicity
Toxicity to fish
LC50 - Pimephales promelas (fathead minnow) - 42.7 mg/l - 96 h
LC50 - Oncorhynchus mykiss (rainbow trout) - 120 - 150 mg/l - 60 d
LOEC - Danio rerio (zebra fish) - 220 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
13. DISPOSAL CONSIDERATIONS

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but 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 (6) Packing group: II
Proper shipping name: Triethylamine
Markable Quantity (MQ): 5000 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 1296 Class: 3 (6) Packing group: II EMS-No: F.E. S-C
Proper shipping name: TRIETHYLAMINE
Marine pollutant: No

IATA
UN number: 1296 Class: 3 (6) 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:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triethylamine</td>
<td>121-44-8</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

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

Massachusetts Right To Know Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triethylamine</td>
<td>121-44-8</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

Pennsylvania Right To Know Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triethylamine</td>
<td>121-44-8</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

New Jersey Right To Know Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triethylamine</td>
<td>121-44-8</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

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
Copyright 2012 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.

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.