1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Triethylene glycol
Product Number : 90390
Brand : Fluka
Supplier : Sigma-Aldrich
Supplier Address : 3050 Spruce Street
                SAINT LOUIS MO  63103
                USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation
                         Product Safety - Americas Region
                         1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
No known OSHA hazards

GHS Classification
Skin irritation (Category 3)
Eye irritation (Category 2B)
Specific target organ toxicity - single exposure (Category 3)

GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H316 Causes mild skin irritation.
H320 Causes eye irritation.
H335 May cause respiratory irritation.

Precautionary statement(s)
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification
Health hazard: 0
Flammability: 1
Physical hazards: 0

NFPA Rating
Health hazard: 0
Fire: 1
Reactivity Hazard: 0
Potential Health Effects

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>May be harmful if inhaled. May cause respiratory tract irritation.</td>
</tr>
<tr>
<td>Skin</td>
<td>May be harmful if absorbed through skin. May cause skin irritation.</td>
</tr>
<tr>
<td>Eyes</td>
<td>May cause eye irritation.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>May be harmful if swallowed.</td>
</tr>
</tbody>
</table>

3. COMPOSITION/INFORMATION ON INGREDIENTS

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Synonyms</td>
<td>Triglycol</td>
</tr>
<tr>
<td>Formula</td>
<td>C₆H₁₄O₄</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>150.17 g/mol</td>
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</table>

No ingredients are hazardous according to OSHA criteria.

4. FIRST AID MEASURES

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>General advice</td>
<td>Consult a physician. Show this safety data sheet to the doctor in attendance.</td>
</tr>
<tr>
<td>If inhaled</td>
<td>If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.</td>
</tr>
<tr>
<td>In case of skin contact</td>
<td>Wash off with soap and plenty of water. Consult a physician.</td>
</tr>
<tr>
<td>In case of eye contact</td>
<td>Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.</td>
</tr>
<tr>
<td>If swallowed</td>
<td>Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.</td>
</tr>
</tbody>
</table>

5. FIREFIGHTING MEASURES

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Conditions of flammability</td>
<td>Not flammable or combustible.</td>
</tr>
<tr>
<td>Suitable extinguishing media</td>
<td>Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.</td>
</tr>
<tr>
<td>Special protective equipment for firefighters</td>
<td>Wear self contained breathing apparatus for fire fighting if necessary.</td>
</tr>
<tr>
<td>Hazardous combustion products</td>
<td>Hazardous decomposition products formed under fire conditions. - Carbon oxides</td>
</tr>
</tbody>
</table>

6. ACCIDENTAL RELEASE MEASURES

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Personal precautions</td>
<td>Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.</td>
</tr>
<tr>
<td>Environmental precautions</td>
<td>Do not let product enter drains.</td>
</tr>
<tr>
<td>Methods and materials for containment and cleaning up</td>
<td>Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.</td>
</tr>
</tbody>
</table>

7. HANDLING AND STORAGE

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Precautions for safe handling</td>
<td>Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.</td>
</tr>
<tr>
<td>Conditions for safe storage</td>
<td>Keep container tightly closed in a dry and well-ventilated place.</td>
</tr>
</tbody>
</table>
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

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: 0.11 mm
Break through time: > 480 min
Material tested: Dermatril® (Aldrich Z677272, Size M)

Splash protection
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: > 30 min
Material tested: Dermatril® (Aldrich Z677272, 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 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
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
impervious 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
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 clear, viscous liquid
Colour colourless

Safety data
pH no data available
Melting point/freezing point Melting point/range: -7 °C (19 °F) - lit.
Boiling point 125 - 127 °C (257 - 261 °F) at 0.1 hPa (0.1 mmHg) - lit.
Flash point 166 °C (331 °F) - closed cup
Ignition temperature 371 °C (700 °F)
Autoignition no data available
temperature
Lower explosion limit  0.9 % (V)
Upper explosion limit  9.2 % (V)
Vapour pressure  < 1 hPa (< 1 mmHg) at 20 °C (68 °F)
Density  1.124 g/mL at 20 °C (68 °F)
Water solubility  completely soluble, soluble
Partition coefficient: n-octanol/water  no data available
Relative vapour density  5.18 - (Air = 1.0)
Odour  no data available
Odour Threshold  no data available
Evaporation rate  no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents, Strong acids

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 17,000 mg/kg

Inhalation LC50
Respiratory disorder

Dermal LD50
LD50 Dermal - rabbit - > 22,500 mg/kg

Other information on acute toxicity
no data available

Skin corrosion/irritation
Skin - Human - Mild skin irritation - Patch Test 24 Hrs.
Skin - rabbit - Mild skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - rabbit - Mild eye irritation

Respiratory or skin sensitization
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.

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

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
Reproductive toxicity - mouse - Oral
Effects on Newborn: Growth statistics (e.g., reduced weight gain).

Reproductive toxicity - mouse - Oral
Effects on Newborn: Physical.

no data available

Teratogenicity
Developmental Toxicity - rat - Oral
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
Inhalation - May cause respiratory irritation.

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

Aspiration hazard
no data available

Potential health effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion May be harmful if swallowed.
Skin May be harmful if absorbed through skin. May cause skin irritation.
Eyes May cause eye irritation.

Signs and Symptoms of Exposure
prolonged or repeated exposure can cause: Nausea, Headache, Vomiting, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
no data available

Additional Information
RTECS: YE4550000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish LC50 - Leuciscus idus (Golden orfe) - > 100 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 46,500 mg/l - 48 h

Persistence and degradability

Biodegradability

Bioaccumulative potential
13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards
No known OSHA hazards

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
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

<table>
<thead>
<tr>
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<tr>
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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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