1. PRODUCT AND COMPANY IDENTIFICATION

Product name: (3-Mercaptopropyl)trimethoxysilane

Product Number: 175817

Brand: Aldrich

Supplier: Sigma-Aldrich

Telephone: +1 800-325-5832

Fax: +1 800-325-5052

Emergency Phone #: (314) 778-5555

Preparation Information: Sigma-Aldrich Corporation

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Harmful by ingestion, skin sensitiser

GHS Classification

Acute toxicity, Oral (Category 4)
Acute toxicity, Dermal (Category 5)
Skin sensitisation (Category 1)
Acute aquatic toxicity (Category 2)

GHS Label elements, including precautionary statements

Pictogram: Warning

Signal word: D

Hazard statement(s)

H302: Harmful if swallowed.
H332: May be harmful in contact with skin.
H336: May cause an allergic skin reaction.
H313: May cause respiratory irritation.
H411: Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P233: Avoid release to the environment.
P260: Wear protective gloves.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMS Classification

Health hazard: 2
Flammability: 1

Physical hazards: 0

NFPA Rating

Health hazard: 2
Fire: 1
Reactivity Hazard: 0

Potential Health Effects

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula: C12H25O3Si

Molecular Weight: 199.34 g/mol

Component | Concentration
--- | ---
3-Trimethoxysilylpropane-1-thiol | 90 - 100%

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

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability

Not flammable or combustible.

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, Sulphur oxides, silicon oxides, metallic generates methanol on contact with water or moisture.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

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.
7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

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.

Recommended storage temperature: 2 - 8 °C

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: butyl-rubber
Minimum layer thickness: 0.3 mm
Break through time: 480 min
Material tested Butoject® (KCL. 897 / Aldrich Z677647, Size M)

Splash contact
Material: Nature latex/chloroprene
Minimum layer thickness: 0.6 mm
Break through time: 48 min
Material tested Lapren® (KCL 706 / Aldrich Z677558, Size M)

Data source: KCL GmbH, D-35450 Eschweiler, phone +49 (0)6569 87200, 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
Face shield and safety glasses. 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. 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

Colour: colourless

Safety data

pH: no data available
Melting point/freezing point: no data available
Boiling point: 213 - 215 °C (415 - 419 °F)
Flash point: 96 °C (205 °F) - closed cup
Ignition temperature: no data available
Auto-ignition temperature: no data available
Lower explosion limit: no data available
Upper explosion limit: no data available
Vapour pressure: < 7 hPa (< 5 mbar) at 20 °C (68 °F)
Density: 1.057 g/mL at 25 °C (77 °F)
Water solubility: hydrolyses
Partition coefficient: n-octanol/water: no data available
Relative vapour density: no data available
Odour: Stench
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, Alcohol. Water

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions: Carbon oxides, Sulphur oxides, silicon oxides.

Other decomposition products: no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat: 774 mg/kg

Inhalation LC50
no data available

Dermal LD50
LD50 Dermal - rabbit: 2,268 mg/kg

Other information on acute toxicity
Skin corrosion/irritation

Serious eye damage/eye irritation

Respiratory or skin sensitisation
guinea pig - May cause sensitisation by skin contact.

Germ cell mutagenicity

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

Specific target organ toxicity - single exposure (Globally Harmonized System)

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

Aspiration hazard

Potential health effects
Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion: Harmful if swallowed.

Skin: Harmful if absorbed through skin. May cause skin irritation.

Eyes: May cause eye irritation.

Signs and Symptoms of Exposure
Nausea, Headache, Vomiting. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects

Additional Information

RTECS: Not available

Toxicity

Toxicity to fish: LC50 - Danio rerio (zebra fish) - 439 mg/l - 96.0 h

Toxicity to daphnia: EC50 - Daphnia magna (Water flea) - 5.7 mg/l - 48 h

EC50 - Darnodesmus subopercatus (green algae) - 207 mg/l - 72 h

Persistence and degradability

Bioaccumulative potential

Mobility in soil

PBT and vPvB assessment

Other adverse effects

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

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
UN number: 3082 Class: 9 Packing group: III EMS-No: F-A, S-F Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (3-Trimethoxysilyl)propane-1-thiol Marine pollutant: Marine pollutant

IATA
UN number: 3334 Class: 9 Packing group: III Proper shipping name: Aviation regulated liquid, n.o.s. (3-Trimethoxysilyl)propane-1-thiol

Further Information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

OSHA Hazards
Harmful by ingestion. Skin sensitiser

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
Acute Health Hazard

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

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Trime thoxyssiy/propane-1-thiol</td>
<td>4420-74-0</td>
</tr>
</tbody>
</table>

New Jersey Right To Know Components

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Trime thoxyssiy/propane-1-thiol</td>
<td>4420-74-0</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 2013 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 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.