SIE4670.0 - 2-(3,4-EPoxyCyclohexyl)Ethyltrimethoxysilane

2-(3,4-EPoxyCyclohexyl)Ethyltrimethoxysilane
Safety Data Sheet SIE4670.0
Date of issue: 09/22/2014 Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product form: Substance
Substance name: 2-(3,4-EPoxyCyclohexyl)Ethyltrimethoxysilane
Product code: SIE4670.0
Formula: C11H22O4Si
Synonyms: (2-TrimethoxysilylEthyl)Cyclohexyloxirane
Chemical family: Organomethoxysilane

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture: For research and industrial use only
Chemical intermediate

1.3. Details of the supplier of the safety data sheet
GELEST, INC.
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

1.4. Emergency telephone number
Emergency number: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification (GHS-US)
Eye Irrit. 2A H319
Mut. 2 H341
Carc. 2 H351

2.2. Label elements
GHS-US labeling
Hazard pictograms (GHS-US):

Signal word (GHS-US): Warning
Hazard statements (GHS-US):
H319 - Causes serious eye irritation
H341 - Suspected of causing genetic defects
H351 - Suspected of causing cancer
Precautionary statements (GHS-US):
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P264 - Wash hands thoroughly after handling
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337+P313 - If eye irritation persists: Get medical advice/attention
P308+P313 - If exposed or concerned: Get medical advice/attention
P405 - Store locked up
P501 - Dispose of contents/container to licensed waste disposal facility.

2.3. Other hazards
No additional information available

2.4. Unknown acute toxicity (GHS-US)
No data available

SECTION 3: Composition/information on ingredients

3.1. Substance
Substance type: Multi-constituent
Name: 2-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXY SILANE
CAS No: 3388-04-3
EC no: 22-217-1

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane</td>
<td>(CAS No) 3388-04-3</td>
<td>&gt; 97</td>
<td>Eye Irrit. 2A, H319 Muta. 2, H341 Carc. 2, H351</td>
</tr>
<tr>
<td>Methanol</td>
<td>(CAS No) 67-56-1</td>
<td>&lt; 0.5</td>
<td>Flam. Lig. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation: vapour), H331 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 1, H370 STOT SE 3, H336</td>
</tr>
</tbody>
</table>

Full text of H-phrases: see section 16

3.2. Mixture
Not applicable

4.1. Description of first aid measures

First-aid measures general: Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.

First-aid measures after inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact: Wash with plenty of soap and water.

First-aid measures after eye contact: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if possible show this sheet; if not available show packaging or label.

First-aid measures after ingestion: Never give anything by mouth to an unconscious person. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed


Symptoms/injuries after skin contact: May cause skin irritation.

Symptoms/injuries after eye contact: Causes serious eye irritation.

Symptoms/injuries after ingestion: Oral toxicity is associated with methanol, the solvent and a hydrolysis product which causes nausea, vomiting, headache, visual effects including blindness.

Chronic symptoms: On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system.

4.3. Indication of any immediate medical attention and special treatment needed

NOTE TO PHYSICIAN: This product reacts with water in the acid contents of the stomach to form methanol. The combination of visual disturbances, metabolic acidosis and formic acid in urine is evidence of methanol poisoning. The therapeutic intravenous administration of ethanol (10 mls/hour) allows methanol to be preferentially oxidized and reduces production of methanol metabolites. Acidosis must be treated with intravenous administration of sodium bicarbonate and methanol elimination may be increased by hemodialysis, as indicated. Treatment should be based on blood methanol levels and acid-base balance.

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.2. Special hazards arising from the substance or mixture
Fire hazard: Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

5.3. Advice for firefighters
Firefighting instructions: Use water spray to cool exposed surfaces. Exercise caution when fighting any chemical fire.

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapor and mist.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel
Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders
Protective equipment: Equip cleanup crew with proper protection.
2-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXYSILANE
Safety Data Sheet

6.2. Environmental precautions
Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal.

6.4. Reference to other sections
See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling : Avoid all eye and skin contact and do not breathe vapor and mist. Provide good ventilation in process area to prevent accumulation of vapors.
Hygiene measures : Wash hands thoroughly after handling. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions : Keep container tightly closed.
Storage area : Store in a well-ventilated place. Store away from heat.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Methanol (67-56-1)</th>
<th>USA ACGIH</th>
<th>ACGIH TWA (ppm)</th>
<th>200 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA ACGIH</td>
<td>ACGIH STEL (ppm)</td>
<td>250 ppm</td>
<td></td>
</tr>
<tr>
<td>USA NIOSH</td>
<td>NIOSH REL (TWA) (mg/m³)</td>
<td>260 mg/m³</td>
<td></td>
</tr>
<tr>
<td>USA NIOSH</td>
<td>NIOSH REL (TWA) (ppm)</td>
<td>200 ppm</td>
<td></td>
</tr>
<tr>
<td>USA NIOSH</td>
<td>NIOSH REL (STEL) (mg/m³)</td>
<td>325 mg/m³</td>
<td></td>
</tr>
<tr>
<td>USA NIOSH</td>
<td>NIOSH REL (STEL) (ppm)</td>
<td>250 ppm</td>
<td></td>
</tr>
<tr>
<td>USA OSHA</td>
<td>OSHA REL (TWA) (mg/m³)</td>
<td>260 mg/m³</td>
<td></td>
</tr>
<tr>
<td>USA OSHA</td>
<td>OSHA PEL (TWA) (ppm)</td>
<td>200 ppm</td>
<td></td>
</tr>
<tr>
<td>USA IDLH</td>
<td>US IDLH (ppm)</td>
<td>6000 ppm</td>
<td></td>
</tr>
</tbody>
</table>

8.2. Exposure controls
Appropriate engineering controls : Provide local exhaust or general room ventilation.
Personal protective equipment : Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Hand protection : Neoprene or nitrile rubber gloves.
Eye protection : Chemical goggles. Contact lenses should not be worn.
Skin and body protection : Wear suitable protective clothing.
Respiratory protection : NIOSH-certified organic vapor (black cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties
Physical state : Liquid
Appearance : Clear liquid.
Molecular mass : 246.38 g/mol
Color : Straw.
Odor : Mild.
Odor threshold : No data available
Refractive index : 1.449
pH : No data available
Relative evaporation rate (butyl acetate=1) : No data available
Melting point : No data available
Freezing point : < 0 °C
Boiling point : 95 - 97 °C @ 0.25 mm Hg
2-(3,4-EPOXYCYCLOHEXYL)ETHYLTRIMETHOXYSILANE
Safety Data Sheet

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash point</td>
<td>146 °C</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>10 mm Hg @ 152°C</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>&gt; 1</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.065</td>
</tr>
<tr>
<td>Solubility</td>
<td>Reacts with water.</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Kow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>5.2 cSt</td>
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<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
Stable in sealed containers.

10.3. Possibility of hazardous reactions
Reacts with water and moisture in air, liberating methanol. Can react exothermically with amines. Can polymerize (non-hazardous) in the presence of weak acids.

10.4. Conditions to avoid
Heat. Open flame. Sparks.

10.5. Incompatible materials

10.6. Hazardous decomposition products
Methanol. Organic acid vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity: Not classified

Methanol (67-56-1)
- LD50 oral rat: 6200 mg/kg
- LD50 dermal rabbit: 20 g/kg
- LC50 inhalation rat (ppm): 22500 ppm (Exposure time: 8 h)
- ATE US (oral): 100.00000000 mg/kg body weight
- ATE US (dermal): 300.00000000 mg/kg body weight
- ATE US (vapors): 3.00000000 mg/l/4h

2-(3,4-Epoxy cyclohexyl)ethyltrimethoxysilane (3388-04-3)
- LD50 oral rat: 12300 mg/kg

Skin corrosion/irritation: Not classified
- Skin Irritation - rabbit: 500mg open: mild irritant effect

Serious eye damage/irritation: Causes serious eye irritation.
Respiratory or skin sensitization: Not classified
Germ cell mutagenicity: Suspected of causing genetic defects.
- Epoxycyclohexyltrimethoxysilane has been found to be mutagenic in Ames in vitro screening, sister chromatid exchange test in mouse lymphoma cells, unscheduled DNA synthesis in human WI-38 cells, and a forward gene mutation assay in mouse lymphoma cells.

Carcinogenicity: Suspected of causing cancer.
- This material was shown to induce a low incidence of squamous cell carcinomas in a study involving chronic recurrent application of the material to the skin of mice.

Reproductive toxicity: Not classified
2-(3,4-EPoxyCyclohexyl)ETHYLTRIMETHOXYSILANE
Safety Data Sheet

Specific target organ toxicity (single exposure) : Not classified
Specific target organ toxicity (repeated exposure) : Not classified
Aspiration hazard : Not classified
Symptoms/injuries after skin contact : May cause skin irritation.
Symptoms/injuries after eye contact : Causes serious eye irritation.
Symptoms/injuries after ingestion : Oral toxicity is associated with methanol, the solvent and a hydrolysis product which causes nausea, vomiting, headache, visual effects including blindness.
Chronic symptoms : On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system.

SECTION 12: Ecological information

12.1. Toxicity

<table>
<thead>
<tr>
<th>Methanol (67-56-1)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>28200 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])</td>
</tr>
<tr>
<td>LC50 fish 2</td>
<td>&gt; 100 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Methanol (67-56-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF fish 1</td>
</tr>
<tr>
<td>Log Pow</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil
No additional information available

12.5. Other adverse effects
Other adverse effects : This substance may be hazardous to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste disposal recommendations : May be incinerated. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number
Not regulated for transport.

14.2. UN proper shipping name
Not applicable

14.3. Additional information
Other information : No supplementary information available.

Transport by sea
No additional information available

Air transport
No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

<table>
<thead>
<tr>
<th>Methanol (67-56-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
<tr>
<td>Listed on United States SARA Section 313</td>
</tr>
<tr>
<td>SARA Section 313 - Emission Reporting : 1.0 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane (3388-04-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
</tbody>
</table>
### 15.2. International regulations

**Methanol (67-56-1)**

- Listed on AICS (Australian Inventory of Chemical Substances)
- Listed on the Canadian DSL (Domestic Substances List)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) inventory
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
- Japanese Poisonous and Deleterious Substances Control Law
- Listed on the Canadian IDL (Ingredient Disclosure List)

**2-(3,4-Epoxy cyclohexyl)ethyltrimethoxysilane (3388-04-3)**

- Listed on AICS (Australian Inventory of Chemical Substances)
- Listed on the Canadian DSL (Domestic Substances List)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) inventory
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

### 15.3. US State regulations

#### Methanol (67-56-1)

<table>
<thead>
<tr>
<th>State</th>
<th>Regulations</th>
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</thead>
<tbody>
<tr>
<td>U.S. - California</td>
<td>Proposition 65 - Maximum Allowable Dose Levels (MADL)</td>
</tr>
<tr>
<td>U.S. - California</td>
<td>Proposition 65 - Toxic Air Contaminants - Non-Cancer Acute</td>
</tr>
<tr>
<td>U.S. - California</td>
<td>SCAQMD - Toxic Air Contaminants - Non-Cancer Chronic</td>
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<tr>
<td>U.S. - California</td>
<td>Toxic Air Contaminant List (AB 1807, AB 2728)</td>
</tr>
<tr>
<td>U.S. - Colorado</td>
<td>Hazardous Wastes - Discarded Chemical Products, Off-Specification Species, Container and Spill Residues</td>
</tr>
<tr>
<td>U.S. - Connecticut</td>
<td>Hazardous Air Pollutants - HLVs (30 min)</td>
</tr>
<tr>
<td>U.S. - Connecticut</td>
<td>Hazardous Air Pollutants - HLVs (8 hr)</td>
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<tr>
<td>U.S. - Connecticut</td>
<td>Volatile Substances</td>
</tr>
<tr>
<td>U.S. - Delaware</td>
<td>Pollutant Discharge Requirements - Reportable Quantities</td>
</tr>
<tr>
<td>U.S. - Idaho</td>
<td>Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations</td>
</tr>
<tr>
<td>U.S. - Idaho</td>
<td>Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs)</td>
</tr>
<tr>
<td>U.S. - Idaho</td>
<td>Occupational Exposure Limits - TWAs</td>
</tr>
<tr>
<td>U.S. - Illinois</td>
<td>Toxic Air Contaminants</td>
</tr>
<tr>
<td>U.S. - Louisiana</td>
<td>Reportable Quantity List for Pollutants</td>
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<tr>
<td>U.S. - Maine</td>
<td>Air Pollutants - Hazardous Air Pollutants</td>
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<tr>
<td>U.S. - Maine</td>
<td>Chemicals of High Concern</td>
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<tr>
<td>U.S. - Massachusetts</td>
<td>Allowable Ambient Limits (AALs)</td>
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<td>U.S. - Massachusetts</td>
<td>Allowable Threshold Concentrations (ATCs)</td>
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<tr>
<td>U.S. - Massachusetts</td>
<td>Oil &amp; Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1</td>
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<tr>
<td>U.S. - Massachusetts</td>
<td>Oil &amp; Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2</td>
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<tr>
<td>U.S. - Massachusetts</td>
<td>Oil &amp; Hazardous Material List - Reportable Quantity</td>
</tr>
<tr>
<td>U.S. - Massachusetts</td>
<td>Oil &amp; Hazardous Material List - Soil Reportable Concentration - Reporting Category 1</td>
</tr>
<tr>
<td>U.S. - Massachusetts</td>
<td>Oil &amp; Hazardous Material List - Soil Reportable Concentration - Reporting Category 2</td>
</tr>
<tr>
<td>U.S. - Massachusetts</td>
<td>Right To Know List</td>
</tr>
<tr>
<td>U.S. - Massachusetts</td>
<td>Threshold Effects Exposure Limits (TELEs)</td>
</tr>
<tr>
<td>U.S. - Massachusetts</td>
<td>Toxics Use Reduction Act</td>
</tr>
<tr>
<td>U.S. - Michigan</td>
<td>Occupational Exposure Limits - Skin Designations</td>
</tr>
<tr>
<td>U.S. - Michigan</td>
<td>Occupational Exposure Limits - STELs</td>
</tr>
<tr>
<td>U.S. - Michigan</td>
<td>Occupational Exposure Limits - TWAs</td>
</tr>
<tr>
<td>U.S. - Minnesota</td>
<td>Chemicals of High Concern</td>
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<tr>
<td>U.S. - Minnesota</td>
<td>Groundwater Health Risk Limits</td>
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<tr>
<td>U.S. - Minnesota</td>
<td>Hazardous Substance List</td>
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<tr>
<td>U.S. - Minnesota</td>
<td>Permissible Exposure Limits - Skin Designations</td>
</tr>
<tr>
<td>U.S. - Minnesota</td>
<td>Permissible Exposure Limits - STELs</td>
</tr>
<tr>
<td>U.S. - Minnesota</td>
<td>Permissible Exposure Limits - TWAs</td>
</tr>
<tr>
<td>U.S. - New Hampshire</td>
<td>Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour</td>
</tr>
<tr>
<td>U.S. - New Hampshire</td>
<td>Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual</td>
</tr>
<tr>
<td>U.S. - New Jersey</td>
<td>Discharge Prevention - List of Hazardous Substances</td>
</tr>
<tr>
<td>U.S. - New Jersey</td>
<td>Environmental Hazardous Substances List</td>
</tr>
</tbody>
</table>
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Safety Data Sheet

Methanol (67-56-1)

U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - New Jersey - Special Health Hazards Substances List
U.S. - New Jersey - Water Quality - Ground Water Quality Criteria
U.S. - New Jersey - Water Quality - Practical Quantitation Levels (PQLs)
U.S. - New York - Occupational Exposure Limits - Skin Designations
U.S. - New York - Occupational Exposure Limits - TWAs
U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances
U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 1-Hour
U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 8-Hour
U.S. - North Dakota - Hazardous Wastes - Discarded Chemical Products, Off-Specification Species, Container and Spill Residues
U.S. - Oregon - Permissible Exposure Limits - TWAs
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - 1-Hour
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - Annual
U.S. - South Carolina - Toxic Air Pollutants - Maximum Allowable Concentrations
U.S. - South Carolina - Toxic Air Pollutants - Pollutant Categories
U.S. - Tennessee - Occupational Exposure Limits - Skin Designations
U.S. - Tennessee - Occupational Exposure Limits - STELs
U.S. - Tennessee - Occupational Exposure Limits - TWAs
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term
U.S. - Vermont - Permissible Exposure Limits - Skin Designations
U.S. - Vermont - Permissible Exposure Limits - STELs
U.S. - Vermont - Permissible Exposure Limits - TWAs
U.S. - Washington - Dangerous Waste - Discarded Chemical Products List
U.S. - Washington - Permissible Exposure Limits - Skin Designations
U.S. - Washington - Permissible Exposure Limits - STELs
U.S. - Washington - Permissible Exposure Limits - TWAs

2-(3,4-Epoxy cyclohexyl)ethyltrimethoxysilane (3388-04-3)

U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term

SECTION 16: Other information

Abbreviations and acronyms:

- Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure limit; TWA: time weighted average; TLV: threshold limit value; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number.

Full text of H-phrases:

- Acute Tox. 3 (Dermal) Acute toxicity (dermal) Category 3
- Acute Tox. 3 (Inhalation:vapour) Acute toxicity (inhalation:vapour) Category 3
- Acute Tox. 3 (Oral) Acute toxicity (oral) Category 3
- Carc. 2 Carcinogenicity Category 2
- Eye Dam. 1 Serious eye damage/eye irritation Category 1
- Eye Irrit. 2A Serious eye damage/eye irritation Category 2A
- Flam. Liq. 2 Flammable liquids Category 2
- Muta. 2 Germ cell mutagenicity Category 2
- Skin Irrit. 2 Skin corrosion/Irritation Category 2
- STOT SE 1 Specific target organ toxicity (single exposure) Category 1
- STOT SE 3 Specific target organ toxicity (single exposure) Category 3
- H225 Highly flammable liquid and vapor
- H301 Toxic if swallowed
- H311 Toxic in contact with skin
- H315 Causes skin irritation
- H318 Causes serious eye damage
- H319 Causes serious eye irritation
- H331 Toxic if inhaled
- H336 May cause drowsiness or dizziness
- H341 Suspected of causing genetic effects
- H351 Suspected of causing cancer
- H370 Causes damage to organs
2-(3,4-EPXOCYCLOHEXYL)ETHYLTRIMETHOXYSILANE
Safety Data Sheet

HMIS III Rating
Health: 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given
Flammability: 1 Slight Hazard
Physical: 1 Slight Hazard

Prepared by safety and environmental affairs.

Date of issue: 09/22/2014 Version: 1.0

SDS US (GHS HazCom 2012) - Custom
According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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