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

### 1.1. Product identifier
- **Product form**: Substance
- **Physical state**: Liquid
- **Substance name**: (3-GLYCIDOXYPROPYL)TRIMETHOXYSILANE
- **Product code**: SIG5840.0
- **Formula**: C9H20O₅Si
- **Synonyms**: 3-(2,3-EPoxypropoxy)propyltrimethoxysilane; Trimethoxy-[3-(oxirane-2-ylmethoxy)propyl]silane; 3-(trimethoxysilyl)propyl glycidyl ether; (TRIMETHOXYSILYL)PROPYL GLYCIDYL ETHER

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

### 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
- **GHS-US classification**
  - Eye Dam. 1 H318
  - Full text of H statements: see section 16

### 2.2. Label elements
- **GHS-US labeling**
  - **Hazard pictograms (GHS-US)**: GHS05
  - **Signal word (GHS-US)**: Danger
  - **Hazard statements (GHS-US)**: H318 - Causes serious eye damage
  - **Precautionary statements (GHS-US)**: 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
  - P310 - Immediately call a doctor

### 2.3. Other hazards
- **Other hazards not contributing to the classification**: Additional methanol may be formed by reaction with moisture and water. The US OSHA PEL (TWA) for methanol is 200 ppm.

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

SECTION 3: Composition/Information on ingredients

### 3.1. Substance
- **Substance type**: Mono-constituent
- **Name**: (3-GLYCIDOXYPROPYL)TRIMETHOXYSILANE
- **CAS No**: 2530-83-8
- **EC no**: 219-784-2
# (3-GLYCIDOXYPROPYL)TRIMETHOXYSILANE
## Safety Data Sheet

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Glycidoxypropyltrimethoxysilane</td>
<td>(CAS No) 2530-83-8</td>
<td>97-100</td>
<td>Eye Dam. 1, H318</td>
</tr>
</tbody>
</table>

### 3.2. Mixture
Not applicable

### SECTION 4: First aid measures

#### 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 victim 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. Get medical advice/attention.

**First-aid measures after eye contact**: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

**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 inhalation**: May cause irritation to the respiratory tract.

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

**Symptoms/injuries after eye contact**: Causes serious eye damage.

**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. Onset of symptoms may be delayed up to 48 hours.

**Chronic symptoms**: On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system. Methanol may effect the central nervous system resulting in persistent or recurring headaches or impaired vision.

#### 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

**Suitable extinguishing media**: Water spray. Foam. Carbon dioxide. Dry chemical.

**Unsuitable extinguishing media**: Do not use straight streams.

#### 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.

**Reactivity**: Can react exothermically with amines.

#### 5.3. Advice for firefighters

**Firefighting instructions**: Exercise caution when fighting any chemical fire. Use water spray to cool exposed surfaces.

**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

**Protective equipment**: Wear protective equipment as described in Section 8.

**Emergency procedures**: Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

**Protective equipment**: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: “Exposure controls/personal protection”.

#### 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
For containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
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 contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

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
No additional information available
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 or face shield. Contact lenses should not be worn.
Skin and body protection: Wear suitable protective clothing.
Respiratory protection: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. 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: 236.34 g/mol
Color: Straw.
Odor: Mild.
Odor threshold: No data available
Refractive index: 1.4290
pH: No data available
Relative evaporation rate (butyl acetate=1): No data available
Melting point: No data available
Freezing point: < -70 °C
Boiling point: 120 °C @ 2 mm Hg
Flash point: 135 °C
Auto-ignition temperature: 231 °C
 Decomposition temperature: No data available
Flammability (solid, gas): No data available
Vapor pressure: 2 mm Hg @ 120 °C
Relative vapor density at 20 °C: 8.1
Relative density: 1.07
Solubility: Reacts with water.
Log Pow: No data available
GLYCIDOXYPROPYL)TRIMETHOXYSILANE
Safety Data Sheet

Log Kow : No data available
Viscosity, kinematic : 3.2 cSt
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidizing properties : No data available
Explosion limits : No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
Can react exothermically with amines.

10.2. Chemical stability
Stable in sealed containers.

10.3. Possibility of hazardous reactions
Reacts with water and moisture in air, liberating methanol.

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

3-Glycidoxypropyltrimethoxysilane (2530-83-8)

LD50 oral rat : 8400 mg/kg
LC50 inhalation rat (mg/l) : > 5.3 mg/l/4h
ATE US (oral) : 8400.000 mg/kg body weight

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

Serious eye damage/irritation : Causes serious eye damage.
Irreversible effects on the eye: rabbit

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified
Glycidoxypropyltrimethoxysilane has been found to be weakly mutagenic in Ames in vitro screening
In vivo studies have shown that repeated exposure to this material, even at otherwise toxic doses, does not cause any mutagenic events
No tumorogenic response to the chronic recurrent application of the material to the skin of mice was observed

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : May cause irritation to the respiratory tract.
Symptoms/injuries after skin contact : May cause mild skin irritation.
Symptoms/injuries after eye contact : Causes serious eye damage.
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. Onset of symptoms may be delayed up to 48 hours.

Chronic symptoms : On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system. Methanol may effect the central nervous system resulting in persistent or recurring headaches or impaired vision.
SECTION 12: Ecological information

12.1. Toxicity

<table>
<thead>
<tr>
<th>Substance</th>
<th>EC50</th>
<th>ErC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Glycidoxypropyltrimethoxysilane (2530-83-8)</td>
<td>324 mg/l Daphnia 1</td>
<td>119 mg/l Anabaena flos-aquae</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Substance</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Glycidoxypropyltrimethoxysilane (2530-83-8)</td>
<td>-2.6</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.
Effect on ozone layer: No additional information available
Effect on the global warming: No known effects from this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations: Do not dispose of waste into sewer.
Waste disposal recommendations: May be incinerated. Dispose in a safe manner in accordance with local/national regulations.
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

3-Glycidoxypropyltrimethoxysilane (2530-83-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

3-Glycidoxypropyltrimethoxysilane (2530-83-8)

Listed on the 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)
Listed on CICR (Turkish Inventory and Control of Chemicals)

15.3. US State regulations

3-Glycidoxypropyltrimethoxysilane (2530-83-8)

U.S. - California - Proposition 65 - Carcinogens List: No
U.S. - California - Proposition 65 - Developmental Toxicity: No
(3-GLYCIDOXYPROPYL)TRIMETHOXYSYLANE
Safety Data Sheet

### (3-GLYCIDOXYPROPYL)TRIMETHOXYSYLANE (2530-83-8)

<table>
<thead>
<tr>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</td>
<td>No</td>
</tr>
</tbody>
</table>

### 3-Glycidoxypropyltrimethoxysilane (2530-83-8)

<table>
<thead>
<tr>
<th>U.S. - California - Proposition 65 - Carcinogens List</th>
<th>U.S. - California - Proposition 65 - Developmental Toxicity</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</th>
<th>Non-significant risk level (NSRL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

### 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 level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; 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; OECD: The Organisation for Economic Co-operation and Development.

**Full text of H-phrases:**

| H318  | Causes serious eye damage |

**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:** 01/23/2015  **Revision date:** 08/01/2016  **Version:** 2.0

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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