

## SPI Supplies Division

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Manufacturer's CAGE: 1P573

## Safety Data Sheet

Date Effective: November 1, 2017

SPI Catalog # 02837-AB

SPI-Chem™ (3-glycidoxypropyl) trimethoxysilane  
(3GTMO)

### Section 1.1: Identification

Chemical Name/Synonyms ..... (3-Glycidoxypropyl)trimethoxysilane

Product or Trade Name ..... SPI-Chem™ (3-glycidoxypropyl) trimethoxysilane (3GTMO)

CAS #'s ..... 2530-83-8

Chemical Formula..... C<sub>9</sub>H<sub>20</sub>O<sub>5</sub>Si

### Section 1.2: Relevant Uses/Restrictions

Chemical intermediate, for applications in research, testing and analysis, development work and education.

This material is not being offered for clinical or diagnostic applications, agricultural uses or for human or animal consumption.

### Section 1.3: Supplier of the Safety Data Sheet

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### Section 1.4: Emergency telephone number

Emergencies

Contacting CHEMTREC:

24 Hour Emergency Use Only #'s...

Worldwide phone: 1-(703)-741-5970

Toll-free phone: 1-(800)-424-9300 USA + Canada only

### Section 2: Hazard Identification

2.1 Classification of the substance

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Eye damage (category 1)

## 2.2 Label elements

### Pictogram



**Signal Word:** Danger

### Hazard statements:

H318 Causes serious eye damage.

### Precautionary statements:

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 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.

### Hazardous Material Information System USA

Health ..... 3  
Fire Hazard ..... 1  
Reactivity ..... 1  
Personal Protection .....

### NFPA Rating (estimated)

Health ..... 3  
Flammability ..... 1  
Reactivity ..... 1

## Section 3: Composition

### 3.1 Substances:

**Substance type:** Mono-constituent

**Name:** (3-Glycidoxypropyl)trimethoxysilane

**CAS #:** 2530-83-8

**EC #:** 219-784-2

**Percentage:** 97-100%

## Section 4: First Aid Measures

### 4.1 Description of first aid measures:

#### General:

Remove contaminated clothing and shoes.

In case of accident, or if you feel inwell, seek medical advice immediately (show the label where possible).

If possible show this sheet; if not available show packaging or label.

**Inhalation:**

Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
If you feel unwell, seek medical advice.

**Skin Contact:**

Wash with plenty of soap and water.  
Get medical advice / attention.

**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.

**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:**

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

**After skin contact:** May cause mild skin irritation.

After eye contact: Causes serious eye damage.

After ingestion: Oral toxicity is associated with methanol, the solvent, and a hydrolysis product with 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 affect 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: Fire Fighting 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**

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

**Protection during fire-fighting:** Do not enter the 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:**

#### **For non-emergency personnel:**

Wear protective equipment as described in Section 8.  
Evacuate unnecessary personnel.

#### **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:**

#### **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 Section 8, Exposure controls and personal protection.  
For disposal, see Section 13.

## **Section 7: Handling and Storage**

### **7.1 Precautions for safe handling:**

#### **Protective measures:**

Avoid all eye and skin contact.  
Do not breathe vapor and mist.  
Provide good ventilation in process area to prevent accumulation of vapors.

#### **Advice on general hygiene conditions:**

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.  
Incompatible materials: Amines. Moisture. Water.  
Storage area: Store in a well-ventilated place. Store away from heat.

### **7.3 Specific end uses:**

Chemical intermediate, for applications in research, testing and analysis, development work

and education.  
This material is not being offered for clinical or diagnostic applications, agricultural uses or for human or animal consumption.

## **Section 8: Exposure Controls and Personal Protection**

### **8. Control parameter and Personal Protection:**

No additional information available.

**Workplace exposure limits:** No additional information available.

**Biological limit values:** No additional information available.

### **8.2 Exposure controls:**

#### **8.2.1 Appropriate engineering controls:**

Provide local exhaust or general room ventilation.

#### **8.2.2 Individual protection measures:**

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.

#### **8.2.3 Environmental exposure controls:**

No additional information available.

## **Section 9: Physical and Chemical Properties**

### **9.1 Information on basic physical and chemical properties**

Appearance: Clear, straw colored liquid.

Odor: Mild

Odor threshold: No data available

Refractive index: 1.4290

pH: No data available

Melting point/Freezing point: No data available: < -70 °C

Boiling point/Boiling point range: 120 °C @ 2mm Hg

Flash Point: 135 °C

Evaporation rate No data available

Flammability (solid, gas): No data available

Upper/lower flammability or explosive limits: 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

Log Kow: NO data available

Partition coefficient (n-octanol/water): No data available

Auto-ignition temperature: 231 °C  
Decomposition temperature: No data available  
Viscosity, kinematic: 3.2 cSt  
Viscosity, dynamic: No data available  
Explosive properties: No data available  
Oxidizing Properties: 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:

Amines. Moisture. Water.

### 10.6 Hazardous decomposition products

Methanol. Organic acid vapors.

## **Section 11: Toxicological Information**

### Information on the likely routes of exposure

**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.

### 11.1 Information on toxicological effects

#### A. Acute toxicity: Not classified

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

#### B. Skin corrosion/irritation: Not classified

Skin irritation – rabbit: 500 mg open: mild irritant effect

#### C. Serious eye damage/irritation:

Causes serious eye damage.

Irreversible effects on the eye: rabbit

**D. Respiratory or skin sensitization:** Not classified

**E. 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 tumorigenic response to the chronic recurrent application of the material to the skin of mice was observed.

**F. Carcinogenicity:** Not classified

**G. Reproductive toxicity:** Not classified

**H. STOT-single exposure:** Not classified.

**I. STOT-repeated exposure:** Not classified.

**J. Aspiration hazard:** Not classified

## **Section 12: Ecological Information**

**3-Glycidoxypropyltrimethoxysilane CAS# 2530-83-8**

### **12.1 Toxicity:**

EC50	Daphnia1	324 mg/l	Simocephalus vetulus
ErC50	algae	119 mg/l	Anabaena flos-aquae

**12.2 Persistence and degradability:** No additional information available.

### **12.3 Bio-accumulative potential:**

Log Pow            -2.5

**12.4 Mobility in soil:** No additional information available.

**12.5 Results of PBT and vPvB assessment:** No additional information available.

### **12.6 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 affects 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**

DOT: Not dangerous goods.

IATA: Not dangerous goods.

IMDG: Not dangerous goods.

No additional information available.

## **Section 15: Regulatory Information**

### **15.1 Safety, health and environmental regulations/ legislation specific for the substance or mixture**

**US Federal Regulations:** 3-Glycidoxypropyltrimethoxysilane, CAS# 2530-83-8  
Listed on the US TSCA (Toxic Substances Control Act) Inventory.

**International Regulations:** 3-Glycidoxypropyltrimethoxysilane, CAS# 2530-83-8:  
Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on the Canadian DSL (Domestic Substances List)  
Listed on the IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC Inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Japanese ENCS (Existing & New 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)

**US State Regulations:** 3-Glycidoxypropyltrimethoxysilane, CAS# 2530-83-8  
US – California Proposition 65 – Carcinogen List: No  
US – California Proposition 65 – Developmental Toxicity: No  
US – California Proposition 65 – Reproductive Toxicity – Female: No  
US – California Proposition 65 – Reproductive Toxicity – Male: No

### 15.2 Chemical Safety Assessment

Other information, including date of preparation or last revision  
Indication of changes

#### **Abbreviations and acronyms**

IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
CMRG: Chemical Manufacturer's Recommended Guidelines  
IATA: International Air Transport Association  
ACGIH: American Conference of Governmental Industrial Hygienists  
AIHA: American Industrial Hygiene Association  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
NFPA: National Fire Protection Association (USA)  
HMIS: Hazardous Materials Identification System (USA)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bio-accumulative and Toxicological  
vPvB: very Persistent and very Bio-accumulative  
NIOSH: National Institute for Occupational Safety  
OSHA: Occupational Safety Health  
ATE: Acute Toxicity Estimates  
TLV: Threshold Limit Value  
PEL: Permissible Exposure Limit  
REL: Recommended Exposure Limit



STEL: Short Term Exposure Limit  
CEIL: Ceiling

## **Section 16: Other Information**

### **Disclaimer of Liability:**

Caution! Do not use SPI Supplies products or materials in applications involving implantation within the body; direct or indirect contact with the blood pathway; contact with bone, tissue, tissue fluid, or blood; or prolonged contact with mucous membranes. Products offered by SPI Supplies are not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. SPI Supplies will not provide to customers making devices for such applications any notice, certification, or information necessary for such medical device use required by US FDA (Food and Drug Administration) regulation or any other statute. SPI Supplies and Structure Probe, Inc. make no representation, promise, express warranty or implied warranty concerning the suitability of these materials for use in implantation in the human body or in contact with internal body tissues of fluids.

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