

SILQUEST™ A-187 SILANE

# SAFETY DATA SHEET

## 1. Identification

**Product identifier:** SILQUEST™ A-187 SILANE

**Other means of identification**

**Synonyms:** Gamma-Glycidoxypropyltrimethoxysilane

**Recommended use and restriction on use**

**Recommended use:** Interface additive and adhesion promoter for coatings. Sizing agent for glass fibers used in insulation and reinforcement.

**Restrictions on use:** Not known.

**Manufacturer/Importer/Distributor Information** : Momentive Performance Materials - Sistersville  
10851 Energy Highway  
FRIENDLY WV 26146

**Contact person** : commercial.services@momentive.com

**Telephone** : General information  
+1-800-295-2392

**Emergency telephone number**  
**Supplier** : CHEMTREC  
1-800-424-9300

## 2. Hazard(s) identification

**Hazard Classification**

**Health Hazards**

Serious Eye Damage/Eye Irritation      Category 1

**Label Elements**

**Hazard Symbol:**



**Signal Word:** Danger

**Hazard Statement:** H318; Causes serious eye damage.

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**Precautionary Statements**

**Prevention:** Wear protective gloves/protective clothing/eye protection/face protection.

**Response:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

**Hazard(s) not otherwise classified (HNOC):** None.

**Substance(s) formed under the conditions of use:** Reacts with water liberating small amounts of methanol. Methanol is toxic by inhalation, in contact with skin and if swallowed

**3. Composition/information on ingredients**

**Substances**

Chemical Identity	CAS number	Content in percent (%)*
3-glycidyl-oxypropyl-trimethoxy-silane	2530-83-8	98 - <100%

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

**4. First-aid measures**

**General information:** Move into fresh air and keep at rest. Get medical attention immediately.

**Ingestion:** If conscious, drink plenty of water. Do not induce vomiting. Call a physician or poison control center immediately.

**Inhalation:** Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen. Call a physician or poison control center immediately.

**Skin Contact:** Wash off promptly and flush contaminated skin with water. Promptly remove clothing if soaked through and flush skin with water. Continue to rinse for at least 15 minutes. Get medical attention. Wash contaminated clothing before reuse. After contact with skin, remove product mechanically.

**Eye contact:** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

**Most important symptoms/effects, acute and delayed**

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**Symptoms:** Product may hydrolyse on contact with moisture and upon contact with bodily fluids to produce methanol, which is readily and rapidly absorbed at all exposure routes and is toxic by all routes. Therefore, consider the signs/symptoms of methanol poisoning and also observe the known latency period of several days.

**Hazards:** No data available.

**Indication of immediate medical attention and special treatment needed**

**Treatment:** Treatment is symptomatic and supportive.

**5. Fire-fighting measures**

**General Fire Hazards:** Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Use standard firefighting procedures and consider the hazards of other involved materials. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

**Suitable (and unsuitable) extinguishing media**

**Suitable extinguishing media:** All standard extinguishing agents are suitable.

**Unsuitable extinguishing media:** Do not use water jet as an extinguisher, as this will spread the fire.

**Specific hazards arising from the chemical:** In case of fire, carbon monoxide and carbon dioxide may be formed. Acute overexposure to the products of combustion may result in irritation of the respiratory tract. Measurements at temperatures above 150°C in presence of air (oxygen) have shown that small amounts of formaldehyde are formed due to oxidative degradation.

**Special protective equipment and precautions for fire-fighters**

**Special fire-fighting procedures:** Use water spray to keep fire-exposed containers cool.

**Special protective equipment for fire-fighters:** Firefighters must wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus with full face mask and full protective clothing.

**6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures:** Caution: Contaminated surfaces may be slippery. Avoid contact with skin and eyes. See Section 8 of the SDS for Personal Protective Equipment. Keep out of reach of children.

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**Methods and material for containment and cleaning up:** Wipe, scrape or soak up in an inert material and put in a container for disposal. Wash walking surfaces with detergent and water to reduce slipping hazard. Wear proper protective equipment as specified in the protective equipment section.

**Environmental Precautions:** Do not allow runoff to sewer, waterway or ground.

**7. Handling and storage**

**Precautions for safe handling:** Sensitivity to static discharge is not expected. Do not taste or swallow. Do not get in eyes, on skin, on clothing. Use personal protective equipment as required. Wash hands after handling.

**Conditions for safe storage, including any incompatibilities:** Keep container closed. Keep away from sources of ignition - No smoking. Use original container or packaging of similar material of construction

**8. Exposure controls/personal protection**

**Control Parameters**

**Occupational Exposure Limits**

None of the components have assigned exposure limits.

**Appropriate Engineering Controls**

Provide eyewash station and safety shower. General (mechanical) room ventilation is expected to be satisfactory if handled at low temperatures or in covered equipment. Provide adequate ventilation if fumes or vapors are generated.

**Individual protection measures, such as personal protective equipment**

**General information:** General (mechanical) room ventilation is expected to be satisfactory if handled at low temperatures or in covered equipment.

**Eye/face protection:** Safety glasses with side shields Use face shield in case of splash risk.

**Skin Protection**

**Hand Protection:** Use chemical-resistant, impervious gloves.

**Other:** Safety shoes Wear suitable protective clothing.

**Respiratory Protection:** If inhalation exposure is expected, NIOSH/MSHA approved respiratory protection should be worn. Supplied air respirators may be required for non-routine or emergency situations. Respiratory protection must be provided in accordance with OSHA regulations (see 29CFR 1910.134).

**Hygiene measures:** Avoid contact with eyes. When using do not smoke. Wash thoroughly after handling.

**9. Physical and chemical properties**

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**Appearance**

Physical state:	liquid
Form:	liquid
Color:	Clear, Pale
Odor:	ester like
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	-70 °C
Initial boiling point and boiling range:	233 °C
Flash Point:	110 °C
Evaporation rate:	< 1
Flammability (solid, gas):	This product is not flammable.
<b>Upper/lower limit on flammability or explosive limits</b>	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper:	No data available.
Explosive limit - lower:	No data available.
Heat of combustion:	No data available.
Vapor pressure:	< 1 hPa 0.011 hPa (20 °C)
Vapor density:	No data available.
Density:	No data available.
Relative density:	1.07 (20 °C)
<b>Solubility(ies)</b>	
Solubility in water:	36.5 g/l (20 °C)
Solubility (other):	No data available.
Partition coefficient (n-octanol/water) Log Pow:	0.5
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
SADT:	No data available.
Viscosity, dynamic:	2.9 mPa·s
Viscosity, kinematic:	No data available.
<b>Other information</b>	
Minimum ignition temperature:	400 °C
VOC:	; Not applicable

**10. Stability and reactivity**

Reactivity: Reacts with water.

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<b>Chemical Stability:</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions:</b>	<b>POLYMERIZATION - HYDROLYSIS</b> The epoxysilane esters are not monomers in the usual sense, but polymeric materials may be produced under certain conditions of catalyzed partial hydrolysis. Polysiloxanes are produced by polymerization of the silyl ester group in the presence of controlled amounts of water and alkali or acid catalyst at ambient temperatures. At slightly higher temperatures (ca. 50 °C), polyglycols or polyglycol ethers are produced via the epoxy functional group under the same conditions of water concentration and alkali or acid catalyst. In as much as both of these reactions are exothermic and may occur simultaneously, the heat evolved may be cumulative and greatly accelerate the rate of reactions. It is imperative, therefore, that unintentional contamination of the epoxysilane esters with water be avoided, and that intentional hydrolysis be properly controlled to avoid hazardous consequences.
<b>Conditions to avoid:</b>	Avoid contact with: Ignition sources.
<b>Incompatible Materials:</b>	Reacts with water or moisture to form: Methanol
<b>Hazardous Decomposition Products:</b>	Carbon oxides Oxides of silicon. Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant. Acute overexposure to the products of combustion may result in irritation of the respiratory tract.

**11. Toxicological information**

**General information:** Product may hydrolyze upon contact with body fluids in the gastrointestinal tract to produce additional methanol. The potential for toxic effects due to methanol formation (eye damage and blindness, metabolic acidosis, dizziness and drowsiness, fetal toxicity, and liver, kidney, and heart muscle damage) should be recognized.

**Information on likely routes of exposure**

**Ingestion:** No data available.  
**Inhalation:** No data available.  
**Skin Contact:** No data available.  
**Eye contact:** No data available.

**Symptoms related to the physical, chemical and toxicological characteristics**

**Ingestion:** No data available.  
**Inhalation:** No data available.  
**Skin Contact:** No data available.

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**Eye contact:** No data available.

**Information on toxicological effects**

**Acute toxicity (list all possible routes of exposure)**

**Oral**

**Product:** Not classified for acute toxicity based on available data.

**Dermal**

**Product:** ATEmix: 2,532.93 mg/kg

**Inhalation**

**Product:** Not classified for acute toxicity based on available data.

**Specified substance(s):**

3-glycidyl-oxypropyl-  
trimethoxy-silane LC50: > 5.3 mg/l

**Repeated dose toxicity**

**Product:** No data available.

**Specified substance(s):**

3-glycidyl-oxypropyl-  
trimethoxy-silane NOAEL : 500 mg/kg  
NOAEL : 225 mg/m<sup>3</sup>

**Skin Corrosion/Irritation**

**Product:** No data available.

**Specified substance(s):**

3-glycidyl-oxypropyl-  
trimethoxy-silane OECD-Guideline 404 (Acute Dermal Irritation/Corrosion) Non irritating

**Serious Eye Damage/Eye Irritation**

**Product:** No data available.

**Specified substance(s):**

3-glycidyl-oxypropyl-  
trimethoxy-silane OECD-Guideline 405 (Acute Eye Irritation/Corrosion) This substance is  
corrosive.

**Respiratory or Skin Sensitization**

**Product:** No data available.

**Specified substance(s):**

3-glycidyl-oxypropyl-  
trimethoxy-silane , OECD-Guideline 406 (Skin Sensitisation)Non sensitizing.

**Carcinogenicity**

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**Product:** No data available.

**Specified substance(s):**  
3-glycidyl-oxypropyl-  
trimethoxy-silane Not classified

**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**

No carcinogenic components identified

**US. National Toxicology Program (NTP) Report on Carcinogens:**

No carcinogenic components identified

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended:**

No carcinogenic components identified

**Germ Cell Mutagenicity**

**In vitro**

**Product:** No data available.

**Specified substance(s):**  
3-glycidyl-oxypropyl-  
trimethoxy-silane (OECD-Guideline 471 (Genetic Toxicology: Salmonella typhimurium, Reverse Mutation Assay))Positive in the Ames test.  
Chinese Hamster Ovary (CHO) (OECD 476): negative (not mutagenic)  
Mouse Lymphoma Assay (OECD Guideline 476) (OECD 476): positive  
Micronucleus test (OECD 487): negative (not mutagenic) based on read-across from structural analogue [3-(2,3-epoxypropoxy)propyl]triethoxysilane

**In vivo**

**Product:** No data available.

**Specified substance(s):**  
3-glycidyl-oxypropyl-  
trimethoxy-silane Chromosomal aberration (OECD-Guideline 474 (Genetic Toxicology: Micronucleus Test)): positive  
Comet Assay (OECD 489): No clear conclusions about germ cell mutagenicity was reached based on the results from this study.

**Reproductive toxicity**

**Product:** No data available.

**Specified substance(s):**  
3-glycidyl-oxypropyl-  
trimethoxy-silane Not classified

**Specific Target Organ Toxicity - Single Exposure**

**Product:** No data available.

**Specific Target Organ Toxicity - Repeated Exposure**

**Product:** No data available.



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**Aspiration Hazard**

**Product:** No data available.

**Other effects:**

No adverse effects anticipated from available information. Long-term repeated overexposure to methanol vapor concentrations of 3000 ppm or greater may allow a cumulative effect to occur with resulting nausea, vomiting, headache, ringing in the ears, insomnia, trembling, unsteady gait, vertigo, clouded and double vision. Liver and/or kidney injury may occur. Prolonged overexposure at levels of 800-1000 ppm may result in severe eye damage in some persons.

Gamma-Glycidoxypropyltrimethoxysilane This organosilane ester was weakly mutagenic in the following in vitro procedures: Ames test, mouse lymphoma assay, and a sister chromatid exchange test. This weak in vivo mutagenic activity was reduced by the inclusion of metabolic activation in the test systems. Results of in vivo genotoxicity studies have shown mixed results. Repeated exposure of rats or rabbits to this material did not result in an increase in sister chromatid exchange, while single exposures of mice to a hydrolyzate of this material resulted in a significant increase in micronucleated polychromatic erythrocytes. It is unlikely that this material presents a significant genotoxic hazard, in that it lacks any local tumorigenic response to the chronic recurrent application to mouse skin. In a developmental toxicity study with rats given this organosilane ester by gavage over the period of organogenesis, the only effect was minimal fetotoxicity at 3000 mg/kg/day (reduced ossification at one site) in the presence of maternal toxicity. There were no embryotoxic or teratogenic effects. No effects were seen at 500 and 1500 mg/kg/day.

A subsequent developmental study in the rabbit, using gavage dosages of 50, 200 and 400 mg/kg/day given over gestational days 6 through 18, resulted in one maternal death at 400 mg/kg/day; there were no other indications of maternal toxicity at this or lower dosages. At no dosage was there any evidence for developmental toxicity (embryofetal toxicity or teratogenicity).

**12. Ecological information**

**Ecotoxicity:**

**Acute hazards to the aquatic environment:**

**Fish**

**Product:** No data available.

**Specified substance(s):**

3-glycidyl-oxypropyl-trimethoxy-silane LC50 (Fish, 96 h): 55 mg/l

**Aquatic Invertebrates**

**Product:** No data available.

**Specified substance(s):**

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3-glycidyl-oxypropyl-trimethoxy-silane      EC 50 (Daphnia, 48 h): 324 mg/l

**Chronic hazards to the aquatic environment:**

**Fish**

**Product:** No data available.

**Aquatic Invertebrates**

**Product:** No data available.

**Specified substance(s):**

3-glycidyl-oxypropyl-trimethoxy-silane      NOEC (Daphnia, 21 d): > 100 mg/l

**Toxicity to Aquatic Plants**

**Product:** No data available.

**Specified substance(s):**

3-glycidyl-oxypropyl-trimethoxy-silane      NOEC (Algae, 7 d): 119 mg/l

**Persistence and Degradability**

**Biodegradation**

**Product:** No data available.

**Specified substance(s):**

3-glycidyl-oxypropyl-trimethoxy-silane      The product is not readily biodegradable.

**BOD/COD Ratio**

**Product:** No data available.

**Bioaccumulative potential**

**Bioconcentration Factor (BCF)**

**Product:** No data available.

**Partition Coefficient n-octanol / water (log Kow)**

**Product:** Log Kow: 0.5 20 °C

**Mobility in soil:** No data available.

**Known or predicted distribution to environmental compartments**

3-glycidyl-oxypropyl-trimethoxy-silane      No data available.

**Other adverse effects:** No data available.

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**13. Disposal considerations**

<b>General information:</b>	See Section 8 for information on appropriate personal protective equipment. The generation of waste should be avoided or minimized wherever possible. Do not discharge into drains, water courses or onto the ground.
<b>Disposal instructions:</b>	Disposal should be made in accordance with federal, state and local regulations.
<b>Contaminated Packaging:</b>	Dispose of as unused product.

**14. Transport information**

**DOT**

Not regulated.

**IMDG**

Not regulated.

**IATA**

Not regulated.

**Special precautions for user:** This product is not regarded as dangerous goods according to the national and international regulations on the transport of dangerous goods.

**15. Regulatory information**

**US Federal Regulations**

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

None present or none present in regulated quantities.

**US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)**

None present or none present in regulated quantities.

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended**

**Chemical Identity**

3-glycidyl-oxypropyl-trimethoxy-silane

**OSHA hazard(s)**

Causes mild skin irritation.

**CERCLA Hazardous Substance List (40 CFR 302.4):**

None present or none present in regulated quantities.

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**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**

Serious eye damage or eye irritation

**SARA 302 Extremely Hazardous Substance**

None present or none present in regulated quantities.

**SARA 304 Emergency Release Notification**

None present or none present in regulated quantities.

**SARA 311/312 Hazardous Chemical**

**Chemical Identity**

**Threshold Planning Quantity**

**US. EPCRA (SARA Title III Section 313 Toxic Chemical Release Inventory (TRI) Reporting**

None present or none present in regulated quantities.

**Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)**

None present or none present in regulated quantities.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):**

None present or none present in regulated quantities.

**US State Regulations**

**US. California Proposition 65**



**WARNING:** This product can expose you to chemicals including Toluene, Methanol, which is [are] known to the State of California to cause birth defects or other reproductive harm.

For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**US. New Jersey Worker and Community Right-to-Know Act**

**Chemical Identity**

3-glycidyl-oxypropyl-trimethoxy-silane

**US. Massachusetts RTK - Substance List**

No ingredient regulated by MA Right-to-Know Law present.

**US. Pennsylvania RTK - Hazardous Substances**

No ingredient regulated by PA Right-to-Know Law present.

**US. Rhode Island RTK**

No ingredient regulated by RI Right-to-Know Law present.

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**Inventory Status:**

REACH:	If purchased from Momentive Performance Materials GmbH in Leverkusen, Germany, all substances in this product have been registered by Momentive Performance Materials GmbH or upstream in our supply chain or are exempt from registration under Regulation (EC) No 1907/2006 (REACH). For polymers, this includes the constituent monomers and other reactants.	Remarks: None.
Australia Industrial Chem. Act (AIC):	On or in compliance with the inventory	Remarks: None.
Canada DSL Inventory List:	On or in compliance with the inventory	Remarks: None.
Canada NDSL Inventory:	Not in compliance with the inventory.	Remarks: None.
China Inv. Existing Chemical Substances:	On or in compliance with the inventory	Remarks: None.
Japan (ENCS) List:	On or in compliance with the inventory	Remarks: None.
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory	Remarks: None.
New Zealand Inventory of Chemicals:	Not in compliance with the inventory.	Remarks: None.
Philippines PICCS:	On or in compliance with the inventory	Remarks: None.
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory	Remarks: None.
US TSCA Inventory:	On or in compliance with the inventory	Remarks: Commercial Status: Active
EINECS, ELINCS or NLP:	On or in compliance with the inventory	Remarks: None.

**16. Other information, including date of preparation or last revision**

**HMIS Hazard ID**

<b>Health</b>	3
<b>Flammability</b>	1
<b>Physical Hazards</b>	1
<b>PERSONAL PROTECTION</b>	

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; \*Chronic health effect

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**Issue Date:** 05/06/2022  
**Revision Date:** No data available.  
**Version #:** 5.0  
**Further Information:** No data available.  
**Disclaimer:**

**Notice to reader**

Unless otherwise specified in section 1, Momentive products are intended for use in the manufacture and/or formulation of products and are not intended for direct consumer use. These products are not intended for long-lasting (> 30 days) implantation, injection or direct ingestion into the human body, nor for use in the manufacture of multiple use contraceptives. Keep out of the reach of children.

**Further Information**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safehandling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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