SAFETY DATA SHEET

FILE NO.: SC-4100 DATE: 22/03/2023

SC-4SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1 PRODUCT NAME:	**SC-4100 Silane**
1.2 CHEMICAL NAME/FAMILY:	**γ-Methacryloxypropyltrimethoxysilane**
1.3 IDENTIFIED USE:	**Silane coupling agent for improving surface bonding properties of organic and inorganic materials**
1.4 MANUFACTURER:	**Manufactured/Supplied by Silsource Inc.**
1.5 ADDRESS:	**10625 Bryant Sideroad, Port Perry, Ontario, L9L 2C6**
1.6 CHEMICAL EMERGENCY ONLY (PHONE):	**CANUTEC (613) 996-6666 [24 Hr.]**

SECTION 2: HAZARD IDENTIFICATION

2.1 GHS CLASSIFICATION
Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]
Not a hazardous substance according to Regulation (EC) No. 1272/2008

Physical hazard	**NO**
health hazard	**NO**
environmental harm	**NO**

2.2 GHS LABELLING: **NO**

Signal Word: **NO**

Hazard Statements: **NO**

Precautionary Statements:

PREVENTION	P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking. P280 Wear protective gloves/protective clothing/eye protection/face protection.
RESPONSE	P370+P378 In case of fire: Use Dry sand, dry powder or soluble bubble for extinction.
STORAGE	P403+P235 Store in a well-ventilated place. Keep cool.
DISPOSAL	P501 Dispose of contents/container to (in accordance with local/regional/national/international regulation)

2.3 Other Hazards: **None Identified**

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Chemical Name

Chemical Name	CAS#	Concentration [%]
γ-(Methacryloxy)propyltrimethoxysilane	2530-85-0	≥ 97.0%
Methanol	67-56-1	3.0%

Notes: Additional methanol may be formed by reaction with moisture. Harmful if swallowed.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures
General information: Take persons to a safe place. Observe self-protection for first aid. Always seek medical advice in the event of contact with this substance.

4.2 After inhalation
Keep the patient calm. If unconscious place in stable sideways position. Protect against loss of body heat. If breathing stops, administer artificial respiration. Seek medical advice immediately andclearly identify substance.

4.3 After contact with the skin
Remove contaminated clothes at once. Wash off with plenty of water or water and soap immediately for 10-15 minutes. I serious cases, use emergency shower immediately. Seek medical advice immediately and clearly identify substance.

4.4 After contact with the eyes
Rinse immediately with plenty of water for 10-15 minutes. Keep eyelids well open to rinse the whole eye surface and eyelids with water. Seek medical advice immediately and clearly identify substance. Continue to bathe eyes during transport to medical practitioner.

4.5 After swallowing
If conscious, give several small portions of water to drink. Do not induce vomiting. Seek medical advice immediately and clearly identify substance.

4.6 Advice for the physician

In case of contact with water material splits off (also in gastrointestinal tract) methanol in larger amounts; therefore consider poisoning on methanol and also observe known period of latency of several days.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use dry powder or foam in large fires and carbon dioxide, dry powder, and sand in small fires.
Water can be used to cool containers affected by the fire.

5.2 Special hazards arising from the substance or mixture

Flash Point is 108°C (Closed cup). Combustible liquid. Reacts with water to produce methanol. In case of a fire, oxides of carbon, hydrocarbons, silicon dioxide, fumes, and smoke may be generated by thermal decomposition or combustion.

5.3 Advice for firefighters

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

5.4 Further information

Use water spray to cool unopened containers. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Move containers from fire area if this can be done without risk. Prevent run off from fire control dilution from entering streams or drinking water supply.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions and Protective Equipment: Wear personal protection equipment (see section 8). Keep unprotected persons away. Avoid contact with eyes and skin. Avoid inhaling mists and vapours. If material is released indicate risk of slipping.

6.2 Environmental Precautions: Prevent material from entering surface waters, drains or sewers and soil. Contain any fluid that runs out using suitable material. Retain contaminated water/extinguishing water. Dispose of in prescribed marked containers.

6.3 Spills/Leaks: Remove all sources of ignition. Stop leak if safe to do so. Move containers from spill area. For large spills, provide diking or other appropriate containment to keep material from spreading. For small spills, contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in sealable appropriate container for disposal according to local regulations. A vapor suppressing foam may be used to reduce vapors. Contaminated absorbent material may pose the same hazard as the spilled product.

SECTION 7: HANDLING AND STORAGE

7.1 Handling: Use best in a well-ventilated area. When using the product, contact with flammable methanol in water or humid air. During use, it is necessary to control the exposure of methanol and use air-supply or self-contained breathing apparatus to provide ventilation. Do not get into eyes. Avoid skin contact. Avoid breathing vapor, mist, dust or fumes. Keep container tightly closed. Don't take it internally. Remove contaminated clothing immediately. To develop good industrial hygiene habits, you must wash before eating, drinking, or smoking. Take fire protection measures.

7.2 Storage: Store in a cool place. Keep container tightly closed in a dry and well-ventilated place. Opened containers must be carefully resealed and kept upright to prevent leakage.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Maximum allowable concentration

Ingredient name	CAS	Maximum allowable concentration
γ-(Methacryloxy)propyltrimethoxysilane	2530-85-0	See methanol
Methanol	67-56-1	CHINA: TWA 25 mg/m3. STEL 50 mg/m3. Can be absorbed through the skin OSHA PEL (final rule): TWA 200 ppm, 260 mg/m3 ACGIH TLV-skin: TWA 200ppm, STEL 250 ppm.

8.2 **Engineering Controls**: The workplace is recommended to be separated from other workplaces. Closed operation to prevent leakage. Increase ventilation. Set up automatic alarm devices and accident ventilation facilities. Set up emergency evacuation routes and necessary escape areas. Set up red area warning lines, warning signs and set up a communication alarm system. Provide safety shower and eyewash equipment.

Personal protective equipment

Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin 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 dryhands.

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.

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 airrespirator. Use respirators and components tested and approved under appropriate governmentstandards such as NIOSH (US) or CEN (EU).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state/form	liquid
Colour	colourless
pH	not determined
Boiling point	255°C at 760mmHg
Melting point	not determined
Flash point	108°C
Upper explosion limit	no data available
Lower explosion limit	no data available
Vapor pressure	no data available
Vapor density	no data available
Density/relative density	1.045g/ml (25°C)
Solubility.....	not miscible in water

9.2 Other safety information

no data available

SECTION 10: STABILITY AND REACTIVITY

10.1 **Reactivity**

If stored and handled in accordance with standard industrial practices no hazardous reactions are known.

10.2 **Chemical stability**

Stable in closed containers under specified storage and handling conditions. Reacts with water, sensitive to humidity.

10.3 **Possibility of hazardous reactions**

no data available

10.4 **Conditions to avoid:** Sources of ignition or heat (e.g. open flames, direct sunlight, smoking, hot surfaces), incompatible substances, exposed to moist air.

10.5 **Incompatible materials**

Strong acids, Strong oxidizing agents, Water, Bases, Alcohols, Peroxides

10.6 **Hazardous decomposition products:** Reacts with water to produce methanol. In case of a fire, oxides of carbon, hydrocarbons, silicon dioxide, fumes, and smoke may be generated by thermal decomposition or combustion.

10.7 **Hazardous Polymerization**: Polymerization may occur in the presence of water, strong acids, and heat.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 **Information on toxicological effects**

Route of infection: inhalation, skin contact and ingestion.

11.2 **Signs and symptoms of overexposure:**

Harmful if inhaled. May be harmful if swallowed. Causes serious eye damage. May cause skin irritation. May cause an allergic skin reaction.

11.3 Acute toxicity

Chemical name	CAS	LD50 (oral)	LD50 (percutaneous)	LC50 (inhalation)
γ-(Methacryloxy)propyltrimethoxysilane	2530-85-0	＞2000 mg/kg (rat)	＞2000 mg/kg (rabbit)	> 2.28 mg/l (rat 4h)

Potential health effects

Inhalation May be harmful if inhaled. May cause respiratory irritation.
Ingestion Harmful if swallowed.
Skin May be harmful if absorbed through skin. May cause skin irritation.
Eye Causes eye irritation.

11.4 Chronic toxicity Organosilicon compounds are generally low in toxicity.

11.5 Other health hazard information: This material may liberate methanol from contact with moisture or humid air. Excessive methanol can cause blindness and nervous system effects.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Ecotoxicity:
Fish: LC50> 1024 mg / l Test time: 96 hours Brachydanio rerio
Toxicity to daphnia and other aquatic invertebrates: EC50 876 mg / l Test time: 48 hours Daphnia magna
Algae: EC50 536 mg / l Test time: 72 hoursScenedesmus subspicatus

12.2 Residual / degradable
This product hydrolyzes in water or humid air, releasing methanol and organic silicon compounds

12.3 Potential Bioaccumulation (BCF): No data available

12.4 Mobility in soil: No data available

12.5 Additional environmental information
Even in the case of professional handling or disposal, environmental hazards cannot be ruled out.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Product
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Disposal should be in accordance with applicable regional, national and local laws and regulations. The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
Contaminated packaging
Contaminated packaging material should be treated equivalent to residual chemical. Clean packaging material should be subjected to waste management schemes (recovery recycling, reuse) according to local legislation. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Refer to Section 7 and Section 8 for additional handling information and protection of employees.

SECTION 14: TRANSPORT INFORMATION

14.1 UN Number
ADR/RID: - **IMDG: -** **IATA: -**

14.2 UN proper shipping name
γ-(Methacryloxy)propyltrimethoxysilane
ADR/RID: Not dangerous goods
IMDG: Not dangerous goods
IATA: Not dangerous goods

14.3 Transport hazard class (es)
ADR/RID: - **IMDG: -** **IATA: -**

14.4 Packaging group
ADR/RID: - **IMDG: -** **IATA: -**

14.5 Environmental hazards
ADR/RID: - **IMDG: -** **IATA: -**

14.6 Special precautions for user
No data available

SECTION 15: REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Reference to the local, national, US, EU, CA and international regulations.

CAS NO.	TSCA	Canada	IECSC	ENCS	OSHA
2530-85-0	Listed	DSL Listed	Listed	Listed	Unlisted

SECTION 16: OTHER INFORMATION

This data is offered in good faith as typical values and not as a product specification. No warranty, either expressed or implied, is made.

The recommended handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific content of the intended use.

This SDS was prepared sincerely on the basis of the information we could obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority. Products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.
This SDS is compliant with the GHS requirements outlined at http://www.ccohs.ca/oshanswers/chemicals/whmis_ghs/sds.html

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