SAFETY DATA SHEET

FILE NO.: SC-2300 DATE: 11/24/2021

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1 PRODUCT NAME:	**SC-2300 Silane**
1.2 CHEMICAL NAME/FAMILY:	**3-trimethoxysilylpropane-1-thiol**
1.3 IDENTIFIED USE:	**CHEMICAL FOR SYNTHESIS**
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[CLP]

Acute toxicity, Oral	Category 4	H302
Skin sensitization	Category 1	H317
Chronic aquatic toxicity	Category 2	H411

2.2 GHS LABELLING:

Signal Word: **Warning**

Hazard Statements:

H302	Harmful if swallowed.
H317	May cause an allergic skin reaction**.**
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statements:

PREVENTION

P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P302 + P352	IF ON SKIN: Wash with plenty of water/ soap.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P330	Rinse mouth.

DISPOSAL

P501:	Dispose of contents/container to in accordance with local/regional/national/international regulations.

2.3 Other Hazards:

A PBT/vPvB evaluation is not available, since a chemical safety evaluation is not required / has not been carried out.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Substances

Information on ingredients / Hazardous components as per EU-CLP Regulation (EC) No.1272/2008

3-trimethoxysilylpropane-1-thiol					
CAS-No.	4420-74-0	EC-No.	224-588-5		
Acute toxicity (Oral)				**Category 4**	**H302**
Skin Sensitization				**Category 1**	**H317**
Chronic aquatic toxicity				**Category 2**	**H411**

Texts of H phrases, see in Chapter 16

Mixtures -

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures: Remove contaminated or saturated clothing.

If inhaled	If aerosol or mists are formed: Move victims into fresh air. If symptoms persist, consult a physician for treatment.
In case of skin contact	Wash off immediately with plenty of water.
In case of eye contact:	Rinse thoroughly with plenty of water keeping eyelid open. In case of persistent discomfort: Consult an ophthalmologist.
If swallowed:	Have the mouth rinsed with water. Call a physician immediately.

Most important symptoms and effects, both acute and delayed symptoms

After absorbing large amounts of substance:	Liberation of reaction products (Methanol) can lead to symptoms of poisoning.
Possible signs of poisoning:	daze, dizziness, nausea, colicky abdominal pain, respiratory disturbance.
Symptoms upon increasing intoxication:	dysopia, loss of eyesight.

Indication of any immediate medical attention and special treatment needed

Treatment:	Immediate gastric lavage. Antidote treatment, correction of acid-base balance.
Detection of substance (Methanol) possible in:	Blood Antidote treatment: ethanol.

Allergic reactions cannot be excluded.

Treatment of allergic reaction if necessary.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Foam water spray Carbon dioxide (CO_2) dry powder

Unsuitable extinguishing media: high volume water jet

5.2 Special hazards arising from the substance or mixture:

Standard procedure for chemical fires.

5.3 Advice for firefighters

Water used to extinguish fire should not enter drainage systems, soil, or stretches of water.
Ensure there are sufficient retaining facilities for water used to extinguish fire.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

5.4 Further information

In case of fire: wear a self-contained respiratory apparatus

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions and Protective Equipment:

Use personal protective equipment.
Ensure adequate ventilation.

6.2 Environmental Precautions:

Do not allow entrance in sewage water, soil, stretches of water, groundwater, drainage systems.

6.3 Spills/Leaks:

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Fill into marked, sealable containers.
To be disposed of in compliance with existing regulations.

Reference to other sections

Wear personal protective equipment; see section 8.
Disposal considerations; see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling: Ventilators required at emission site.

7.2 Conditions for safe storage, including any incompatibilities

Advice on protection against fire and explosion

Take precautionary measures against static discharges.

Keep away from sources of ignition - No smoking.

Storage

Keep containers tightly closed in a cool, well-ventilated place. Protect from moisture.

Specific end use(s)

No further information available

Applications; see Section 1.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure control

8.2 Engineering measures: Provide for good ventilation if vapors/aerosols are formed.

Personal protective equipment

Respiratory protection

In case of dusts/vapors/aerosols being formed or if the limit values like TLV are exceeded: use respiratory equipment with suitable filter (filter type ABEK) or wear a self-contained respiratory apparatus

Use only respiratory protection equipment with CE-symbol including four digit test number.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Note time limit for wearing respiratory protective equipment.

Hand protection

Glove material for example, butyl-rubber

Material thickness 0,5 mm

Break through time >= 480 min

Glove material for example, Fluorinated rubber (Viton)

Material thickness 0,4 mm

Break through time >= 480 min

Selection of protective gloves to meet the requirements of specific workplaces.

Suitability for specific workplaces should be clarified with protective glove manufacturers.

The information is based on our own tests, references from the literature and information from glove manufacturers, or derived by analogy with similar materials.

Remember that the useful time per day of a chemical protection glove may be much shorter than the permeation time determined according to EN 374 due to the many different influential factors involved (e.g. temperature).

Eye protection

Safety glasses

Skin and body protection

Suitable protective clothing - Use disposable clothing if appropriate.

Hygiene measures

When using, do not eat, drink or smoke. Wash face and/or hands before break and end of work.

Remove contaminated or saturated clothing.

Wash contaminated clothing before re-use.

Protective measures

Handle in accordance with good industrial hygiene and safety practice.

The personal protective equipment used must meet the requirements of directive 89/686/EEC and amendments (CE certification).

If workplace exposure limits are exceeded and/or larger amounts are released (leakage, spilling, dust) the indicated respiratory protection should be used.

If there is the possibility of skin/eye contact, the indicated hand/eye/body protection should be used.

Do not breathe in vapors or aerosols.

Avoid contact with skin and eyes.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form:	clear liquid
Color:	colorless to yellowish
Physical state:	liquid
Odor:	ester-like
Odor Threshold:	no data available
pH:	no data available
Melting point/range:	no data available
Boiling point/range:	85°C (4 hPa) Method: DIN 51356

Flash point:	85°C Method: DIN 51758
Evaporation rate:	no data available
Lower explosion limit:	not determined
Upper explosion limit:	not determined
Vapor pressure:	0,2 hPa (20°C)
Density:	1,05 g/cm3 (25°C) Method: DIN 51757
Water solubility:	decomposition by hydrolysis
Partition coefficient: n-octanol/water	no data available
Thermal decomposition:	not determined
Viscosity, dynamic:	2 mPa.s (20°C) Method: DIN 53 015

9.2 Other safety information

Ignition temperature: no data available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:
No dangerous reaction known under conditions of normal use.

10.2 Chemical stability:
Stable in closed containers under specified storage and handling conditions

10.3 Possibility of hazardous reactions:
No dangerous reactions known.

10.4 Conditions to avoid:
Protect from moisture.

10.5 Incompatible materials
Water

10.6 Hazardous decomposition products:
Methanol in case of hydrolysis.
Alcohol formed by hydrolysis lowers the flash point of the product.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity
LD50 rat (male): 933 mg/kg
LD50 Rat(female): 774 mg/kg

Acute dermal toxicity
LD50 Rat(male): 2608 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity
LD50 Rat(female): 2268 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Skin irritation
Rabbit
No skin irritation

Eye irritation
Rabbit
No eye irritation
Method: OECD Test Guideline 405

Sensitization
Buehler Test Guinea pig: May cause sensitization by skin contact.
Method: OECD Test Guideline 406

Assessment of STOT single exposure
No evidence for hazardous properties

Assessment of STOT repeat exposure
No evidence for hazardous properties

Risk of aspiration toxicity
No evidence of aspiration toxicity

Gentoxicity in vitro
No data available

Carcinogenicity
No data available

Toxicity to reproduction
No data available

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish

LC50 Brachydanio rerio (zebrafish): 439 mg/l / 96 h
Method: EC 92/69
LC0 Brachydanio rerio (zebrafish): 350 mg/l / 96 h
Method: EC 92/69
Toxicity in aquatic invertebrates
EC50 Daphnia magna (Water flea): 6,7 mg/l / 48 h
Method: EC 92/69
Toxicity to algae
EC50 Desmodesmus subspicatus (green algae): 267 mg/l / 72 h
Method: EC 92/69
Toxicity to bacteria
EC 10 activated sludge, mixed population: 440 mg/l / 3 h
Method: EG L133/118 (5.88)
in case of breathing test EC50 is concerned

12.2 Persistence and degradability

Biodegradability
Result: 51 % Not readily biodegradable.
Method: EC 92/69

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

A PBT/vPvB evaluation is not available, since a chemical safety evaluation is not required / has not been carried out.

12.6 Other adverse effects

Further Information: Toxic to aquatic life with long lasting effects.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

With respect to local regulations, e.g. dispose of to suitable waste incineration plant.

Contaminated packaging

Do not reuse empty containers and dispose of in accordance with the regulations issued by the appropriate local authorities.
If there is product residue in the emptied container, follow directions for handling on the container's label.
Incorrect disposal or reuse of this container is illegal and can be dangerous.
Other countries: observe the national regulations.

Waste Key Number

No waste key number as per the European Waste Types List can be assigned to this product, since such classification is based on the (as yet undetermined) use to which the product is put by the consumer.
The waste key number must be determined as per the European Waste Types List (decision on EU Waste Types List 2000/532/EC) in cooperation with the disposal firm / producing firm / official authority.

SECTION 14: TRANSPORT INFORMATION

Transport on land (ADR/RID/GGVSEB)

UN Number	UN 3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(3-mercaptopropyl-trimethoxysilane)
Transport hazard class (es)	9
Packaging group	III
Environmental hazards	YES
Special precautions for user	YES

ADR: Tunnel Restriction Code: (-)

Inland waterway transport (ADN/GGVSEB (Germany))

UN number:	UN 3082
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(3-mercaptopropyl-trimethoxysilane)
Transport hazard class(es):	9
Packing group:	III
Environmental hazards:	Yes
Special precautions for user:	No

Air transport ICAO-TI/IATA-DGR

UN Number	UN 3082

UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(3-mercaptopropyl-trimethoxysilane)
Transport hazard class (es)	9
Packaging group	III
Environmental hazards	YES
Special precautions for user	YES

IATA-C: ERG-Code 9L
IATA-P: ERG-Code 9L

Sea transport IMDG-Code/GGVSee (Germany)

UN number:	UN 3082
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(3-mercaptopropyl-trimethoxysilane)
Transport hazard class(es):	9
Packing group:	III
Environmental hazards:	Yes
Special precautions for user:	No

EmS: F-A,S-F
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:
for transport approval see regulatory information

SECTION 15: REGULATORY INFORMATION

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

National legislation

Major Accident Hazard Legislation
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
listing: ENVIRONMENTAL HAZARDS (E2)
quantity: 200 t 500 t

Chemical Safety Assessment

No substance-related safety assessment is necessary / has been conducted for this product.

SECTION 16: OTHER INFORMATION

Relevant H phrases from chapter 3

H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H411	Toxic to aquatic life with long lasting effects.

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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