SAFETY DATA SHEET

FILE NO.: SC-3100 DATE: 29/JAN/2024

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1 PRODUCT NAME:	**SC-3100 Silane**
1.2 CHEMICAL NAME/FAMILY:	**3-Glycidoxypropyl trimethoxysilane**
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 [24 Hr.] CANADA 888-226-8832 or 613-996-6666** **CHEMTREC [24 Hr.] USA 1-800-262-8200**

SECTION 2: HAZARD IDENTIFICATION

2.1 GHS CLASSIFICATION:

Classification according to REGULATION (EC) No 1272/2008[CLP]

Health Hazard

Serious eye damage	Category: 1	H318

Environmental Hazard

Acute Aquatic Toxicity	Category: 3	H402

2.2 GHS LABELLING:

Signal Word: **Danger**

Hazard Statements:

H318	Causes serious eye damage
H402	Harmful to aquatic life

Precautionary statement prevention:

P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.

Precautionary statement reaction:

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 POISON CENTER or doctor/ physician.

Safe storage

P405	Store locked up

Disposal consideration

P501	Dispose of contents/container in accordance with local regulation.

2.3 Other Hazards:

Chronic exposure: No relevant data

Not a PBT, vPvB substance as per the criteria of the REACH Regulation.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Substances

Formula	$C_9H_{20}O_5Si$
Molecular weight:	236 g/mol
CAS-No.	2530-83-8
EC-No.	219-784-2

Hazardous components

Component	Cas No.	Concentration
3-Glycidoxypropyl trimethoxysilane	2530-83-8	≥ 98.0%
Methanol	67-56-1	≤ 3.0%

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures:

Take off all contaminated clothing immediately.

If inhaled

If aerosol or mists are formed: Move victims into fresh air.

In case of persistent discomfort: Consult doctor immediately.

In case of skin contact

Wash off immediately with plenty of water.

Consult a doctor in the event of permanent skin irritation.

In case of eye contact

With eye held open, thoroughly rinse immediately with plenty of water for at least 10 minutes. Continue rinsing process with eye rinsing solution.

Protect unharmed eye.

Call ambulance. (Cue: caustic burn of the eyes)

Immediate further treatment in eye clinic/by eye doctor. Continue rinsing eye until arrival at ophthalmic hospital.

If swallowed

Have the mouth rinsed with water.

Only when patient fully conscious:

Have patient drink plenty of water in small sips.

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

If required, therapy of irritative effect.

Treatment:

Early endoscopy in order to assess mucosa lesions in the esophagus and stomach which may appear. If necessary, aspirate leftover substance.

Detection of substance (methanol) possible in:

Blood

Antidote treatment: ethanol.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 **Suitable extinguishing media:** Water spray, foam, dry powder or carbon dioxide
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.
In case of fire: wear a self-contained respiratory apparatus

5.4 **Further information**
No data available

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions and Protective Equipment:
Wear personal protective equipment.
Do not inhale vapors / aerosols.

6.2 Environmental Precautions:
Do not allow entrance in sewage water, soil stretches of water, groundwater, drainage systems.

Should not be released into the environment.

6.3 Spills/Leaks:

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Transfer into suitable containers.
To be disposed of in compliance with existing regulations.
Suitable binder:
sand (for damming up)

Reference to other sections

Wear personal protective equipment; see section 8.
For disposal see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

Handle in a well-ventilated area
When used, it comes into contact with flammable methanol in water or moist air.
When used, methanol exposure must be controlled and ventilation provided by air supply or self-contained breathing apparatus.
Keep out of the eyes.
Avoid skin contact.
Avoid breathing in steam, mist, dust or smoke.
Keep container sealed.
Do not take internally.
Take off contaminated clothing immediately.
Develop good industrial hygiene habits, and wash hands before eating, drinking or smoking.
Take fire precautions

7.2 Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place.
Containers opened must be carefully resealed and kept upright to prevent leakage.
Keep away from sources of ignition - No smoking.

Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure limits

Components with workplace control parameters

Component	CAS No.	Value
3-Glycidoxypropyl trimethoxysilane	2530-83-8	See methanol
Methanol	67-56-1	China: TWA 25 mg/m^3. STEL 50 mg/m^3, can be absorbed through the skin. OSHA PEL (final rule): TWA 200 ppm, 260 mg/m^3 ACGIH TLV-skin: TWA 200 ppm, STEL 250 ppm.

DNEL/DMEL values

End Use	Worker
Routes of exposure	Inhalation
Possible health damage	Long-term - systemic effects
Value	147 mg/m3
Remarks	Repeated dose toxicity
End Use	Worker
Routes of exposure	Inhalation
Possible health damage	Acute - systemic effects
Value	147 mg/m3
Remarks	Repeated dose toxicity
End Use	Worker
Routes of exposure	Inhalation
Possible health damage	Long-term local effects
Remarks	Not quantifiable
End Use	Worker
Routes of exposure	Inhalation
Possible health damage	Acute local effects

Remarks	Not quantifiable
End Use	Worker
Routes of exposure	dermal
Possible health damage	Long-term - systemic effects
Value	21 mg/kg bodyweight/day
Remarks	Repeated dose toxicity
End Use	Worker
Routes of exposure	dermal
Possible health damage	Acute - systemic effects
Value	21 mg/kg bodyweight/day
Remarks	Repeated dose toxicity
End Use	Worker
Routes of exposure	dermal
Possible health damage	Long-term local effects
Remarks	Not quantifiable
End Use	Worker
Routes of exposure	dermal
Possible health damage	Acute local effects
Remarks	Not quantifiable
End Use	Consumers
Routes of exposure	Inhalation
Possible health damage	Long-term - systemic effects
Value	43.5 mg/m3
Remarks	Repeated dose toxicity
End Use	Consumers
Routes of exposure	Inhalation
Possible health damage	Acute - systemic effects
Value	43.5 mg/m3
Remarks	Repeated dose toxicity
End Use	Consumers
Routes of exposure	Inhalation
Possible health damage	Long-term local effects
Remarks	Not quantifiable
End Use	Consumers
Routes of exposure	Inhalation
Possible health damage	Acute local effects
Remarks	Not quantifiable
End Use	Consumers
Routes of exposure	dermal
Possible health damage	Long-term - systemic effects
Value	12.5 mg/kg bodyweight/day
Remarks	Repeated dose toxicity
End Use	Consumers
Routes of exposure	dermal
Possible health damage	Acute - systemic effects
Value	12.5 mg/kg bodyweight/day
Remarks	Repeated dose toxicity
End Use	Consumers
Routes of exposure	dermal
Possible health damage	Long-term local effects
Remarks	Not quantifiable
End Use	Consumers
Routes of exposure	dermal
Possible health damage	Acute local effects
Remarks	Not quantifiable
End Use	Consumers
Routes of exposure	Oral
Possible health damage	Long-term systemic effects
Value	12.5 mg/kg bw/day
Remarks	Repeated dose toxicity

PNEC values

	Freshwater
Value	1 mg/l
	marine water
Value	0.1 mg/l
	water - intermittent releases
Value	1 mg/l
	sediment
Value	0.79 mg/kg wet weight

Soil

Value	0.13 mg/kg wet weight

STP

Value	> 10 mg/l

8.2 Exposure controls

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 physical tests, references from the literature and information from glove manufacturers, or derived by analogy with similar materials.
Please observe that the daily duration of usage of a chemical protective glove is in practice far shorter due to the many influencing factors (e.g. temperature, mechanical strain on the glove material) than the permeation time determined acc. EN 374.

Eye protection

Close-fitting protective goggles (e.g. closed goggles)

Skin and body protection

No special protective equipment required.

Hygiene measures

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

Control of environmental exposure

Prevent product from entering drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state/form:	liquid
Color:	colorless
pH:	approx. 7 at 25°C (50g/l H_2O)
Boiling point:	290°C at 760mmHg
Melting point:	< -50°C
Flash point:	110°C（Tag closed cup tested）
Ignition temperature:	No data available
Oxidizing properties:	No
Upper explosion limit:	not determined
Lower explosion limit:	not determined
Vapor pressure:	0.00213mmHg at 25°C
Vapor density:	no data available
Density/relative density:	1.070g/cm3(25°C)

Solubility:	react with water
Heat of combustion:	no data available
Viscosity(dynamic):	approx. 3mPa·s at 25°C

9.2 Other safety information
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 – moisture sensitive

10.3 Possibility of hazardous reactions:
Avoid contact conditions: peroxides, ignition sources, excess heat, exposure to moist air.

10.4 Conditions to avoid:
Protect from moisture.

10.5 Incompatible materials
peroxides, water

10.6 Hazardous decomposition products: Silicon dioxide, nitrogen oxides, carbon monoxide.
Hazardous polymerization: Polymeric reactions tend to occur in the presence of water, strong acids,heat and especially iron.
In the event of fire: see section 5

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Route of exposure: inhalatoion, skin exposure and ingestion.

11.2 Signs and symptoms of overexposure:
Inhalation is harmful. Ingestion is harmful, eyes damage. May cause skin irritation.

11.3 Acute toxicity:

Chemical name	CAS No.	Median lethal dose (Oral)	Median lethal dose (Skin)	LC 50 (Inhalation)
3-Glycidoxypropyl trimethoxysilane	**2530-83-8**	**7010 mg/kg (rat)**	**3970 mg/kg (Rabbit)**	**-**

Potential health effects
Inhale: Inhalation is harmful, may cause respiratory irritation.
Intake: Ingestion is harmful to human health
Skin: It can be harmful if absorbed through the skin. May cause skin irritation.
Eye: Eye irritation

11.4 Chronic toxicity
Organosilicon compounds generally have low chonic toxicity

11.5 Other health hazard information
This material may release methanol in contact with moisture or moist air. Excessive methanol exposure/consumption can lead to blindness and neurological effects.

SECTION 12: ECOLOGICAL INFORMATION

12.1 EcoToxicity

Fish:	LC50 237mg/l	test time:96 hours	rainbow trout
Water flea and other aquatic invertebrate:	EC50 55mg/l	test time:48 hours	carp
Algae:	EC50 40 mg/l	test time: 72 hours	Sweet water algae

12.2 Persistence and degradability
Hydrolyzed in water or moist air, the product releases methanol and organic silicone compounds

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
Environmetal hazards cannot be ruled out even in cases of professional treatment or disposal

12.6 Other adverse effects
No data available

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

UN number

ADR/RID: -	IMDG: -	IATA: -

UN proper shipping name

ADR/RID:	Not dangerous goods
IMDG:	Not dangerous goods
IATA:	Not dangerous goods

Transport hazard class(es)

ADR/RID:	- IMDG:	- IATA: -

Packing group

ADR/RID:	- IMDG:	- IATA: -

Environmental hazards

ADR/RID: no	IMDG Marine Pollutant: no	IATA: no

Special precautions for user

No data available

SECTION 15: REGULATORY INFORMATION

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

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

Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

SECTION 16: OTHER INFORMATION

Relevant H phrases from chapter 3

H318	Causes serious eye damage
H402	Harmful to aquatic life

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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