SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifier

Product name:	n-Octyltrimethoxysilane
Product Number:	SS-5019
CAS No.	3069-40-7
EC-No.	221-338-7

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use: Industrial use. Intermediate chemcial

Uses advised against: Not for food, drug, pesticide or biocidal product use

1.3 Details of the supplier of the safety data sheet

Manufactured/Supplied by Silsource Inc.

ADDRESS: 10625 Bryant Sideroad, Port Perry, Ontario, L9L 2C6

CHEMICAL EMERGENCY ONLY (PHONE): CANUTEC (613) 996-6666 [24 Hr.]

SECTION 2: HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Skin irritation (Category 2) H315

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]

Pictogram

Signal word : Warning

Hazard statement(s)

H315	Causes skin irritation.

Precautionary statement(s)

P280	Wear protective gloves/protective clothing/eye protection.
P302 + P352	IF ON SKIN: Wash with plenty of water/soap.
P332 + P313	If skin irritation occurs: Get medical advice/attention.

2.3 Other hazards – not a PBT, vPvB substance as per the criteria of the REACH Regulation.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

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

Trimethoxyoctylsilane

CAS-No. 3069-40-7	EC-No. 221-338-7	
Skin irritation	Category 2	H315
Impurity		
Methanol <0,2%		
CAS-No. 67-56-1	EC-No. 200-659-6	
Flammable liquids	Category 2	H225
Acute toxicity (Oral)	Category 3	H301

Acute toxicity (Dermal)	Category 3	H311
Acute toxicity (Inhalation)	Category 3	H331
Specific target organ toxicity - single exposure	Category 1	H370

Texts of H phrases, see in Chapter 16

3.2 Mixtures

Not Relevant

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice

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 with soap and plenty of water. Consult a physician in the event of permanent skin irritation.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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:

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

Antidote treatment: ethanol.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides, silicon oxides

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Ensure adequate ventiliation. Avoid breathing vapors, mist or gas.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains, ewage water, soil stretches of water, or groundwater

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Fill into marked, sealable containers for disposal according to local regulations (see section 13).

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Provide good ventilation or extraction.

Normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Moisture sensitive.

7.3 Specific end uses

no data available

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

DNEL/DMEL values	
End Use	Worker
Routes of exposure	Inhalation
Possible health damage	Long-term systemic effects
Value	8 mg/m3
End Use	Worker
Routes of exposure	Inhalation
Possible health damage	Acute systemic effects
Value	8 mg/m3
End Use	Worker
Routes of exposure	Inhalation
Possible health damage	Long-term local effects
Remarks	Low hazard (no threshold derived).
End Use	Worker
Routes of exposure	Inhalation
Possible health damage	Acute local effects
Remarks	Low hazard (no threshold derived).
End Use	Worker
Routes of exposure	dermal
Possible health damage	Long-term systemic effects
Value	4,5 mg/kg bw/day
End Use	Worker

Routes of exposure	dermal
Possible health damage	Acute systemic effects
Value	4,5 mg/kg bw/day
End Use	Worker
Routes of exposure	dermal
Possible health damage	Long-term local effects
Remarks	Medium hazard (no threshold derived).
End Use	Worker
Routes of exposure	dermal
Possible health damage	Acute - local effects
Remarks	Medium hazard (no threshold derived).
End Use	general populace
Routes of exposure	Inhalation
Possible health damage	Long-term systemic effects
Remarks	No hazard identified.
End Use	general populace
Routes of exposure	Inhalation
Possible health damage	Long-term local effects
Remarks	No hazard identified.
End Use	general populace
Routes of exposure	Inhalation
Possible health damage	Acute local effects
Remarks	No hazard identified.
End Use	general populace
Routes of exposure	dermal
Possible health damage	Acute systemic effects
Remarks	No hazard identified.
End Use	general populace
Routes of exposure	dermal
Possible health damage	Long-term local effects
Remarks	No hazard identified.
End Use	general populace
Routes of exposure	dermal
Possible health damage	Acute - local effects
Remarks	No hazard identified.
End Use	general populace
Routes of exposure	Oral
Possible health damage	Long-term systemic effects 3,1 mg/kg bw/day
Value	
End Use	general populace
Routes of exposure	Oral
Possible health damage	Acute systemic effects
Value	3,1 mg/kg bw/day
PNEC values	Fresh water
Value	0,64 mg/l
	Marine water
Value	0,064 mg/l
	water - intermittent releases
Value	6,4 mg/l
	Fresh water sediment
Value	4,8 mg/kg dry weight
	Marine sediment
Value	0,48 mg/kg dry weight
	Soil
Value	0,59 mg/kg dry weight
Value	sewage treatment plant (STP) >= 100mg/l

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. Provide good ventilation or extraction.

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	or 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. 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

Safety glasses

Skin and body protection

When handling larger quantities: chemical protective suit, disposable protective suit (Solvent-resistant)

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

Appearance	Colourless liquid
Odour	fruity
Odour Threshold	no data available
pH	no data available
Melting point/freezing	-66 °C (1013,25 hPa) Method: EC Method A.1
Initial boiling point and	246 °C (1013 hPa) Method: DIN 51 751
Flash point	102°C Method: DIN EN ISO 2719 (Pensky-Martens, Closed Cup)
Evaporation rate	no data available
Flammability (solid, gas)	no data available
Upper/lower flammability or explosive limits	no data available
Vapour pressure	3 hPa (20 °C) Product 2,1 Pa (20 °C) Method: dynamic method pure substance 52,4 hPa (140 °C) Method: dynamic method pure substance
Density	ca. 0,91 g/cm3 (20 °C)
Relative density	0,91 (20 °C) Method: EC Method A.3
Water solubility	not miscible Decomposition by hydrolysis
Partition coefficient: noctanol/water	og Pow: 3,9 (25 °C)
Autoignition temperature	225 °C (1013 hPa) Method: EC Method A.15
Decomposition temperature	no data available
Viscosity, dynamic	2 mPa.s (20 °C) Method: DIN 53 015
Explosive properties	not explosive
Oxidizing properties	no data available

9.2 Other safety information

Ignition temperature	225 °C (1013 hPa) Method: DIN 51 794

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

Protect from moisture.

10.5 Incompatible materials

Alkalis, Acids, humid air and 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 toxicity	LD50 Rat: > 2000 mg/kg Method: OECD Test Guideline 401 Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity	LC50 Rat: 3,9 mg/l / 4 h / dust/mist Method: OECD Test Guideline 403 Assessment: The substance or mixture has no acute inhalation toxicity

Based on the data available, the acute toxicity of trimethoxy-octyl-silane is not classified in compliance with Regulation (EC) No. 1272/2008. The effects observed the acute inhalation study with rats did not result from the systemic availability of the test substance but from an exposure to an aerosol. The inhalation of aerosol droplets does not constitute a route of exposure which is relevant to humans.

Acute dermal toxicity	No data available Acute toxicity estimate: > 5000 mg/kg Method: Calculation method
Skin irritation	Rabbit Skin irritation Method: OECD Test Guideline 404
Eye irritation	Rabbit No eye irritation Method: OECD Test Guideline 405
Sensitization	Maximization test Guinea pig: Does not cause skin sensitization. Method: OECD Test Guideline 406 Test substance: Structurally similar substance
Repeated dose toxicity	Oral Rat / 28-day NOAEL: 150 mg/kg Method: OECD Test Guideline 407 Test substance: Structurally similar substance
Repeated dose toxicity	Species: Rat Application Route: inhalative Exposure duration: 28-day Frequency of exposure: 5 days/weeks, 6 hours/day NOAEC: 3000 mg/m³ Method: OECD TG 412 Test substance: Structurally similar substance
Assessment of STOT single exposure	Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.
Assessment of STOT repeat exposure	Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Risk of aspiration toxicity

Gentoxicity in vitro	No evidence of aspiration toxicity
	Ames test Salmonella typhimurium
	negative
	Method: OECD TG 471
	chromosomal aberration Chinese hamster (CHO K1 -cells) negative
	Method: OECD TG 473
	Test substance: Structurally similar substance
	gene mutation TK +/- mouse lymphoma cell (L5178Y)
	negative
	Method: OECD TG 476
	Test substance: Structurally similar substance
Carcinogenicity Toxicity to reproduction	No evidence that cancer may be caused.
	Screening for reproductive/developmental toxicity Oral Rat NOAEL (No Observed Adverse Effect Level) of parents:300 mg/kg
	Method: OECD TG 422
	Test substance: Structurally similar substance
Teratogenicity	Oral Rat
	NOAEL (No Observed Adverse Effect Level) teratogenesis: >= 1000 mg/kg
	NOAEL maternal (No Observed Adverse Effect Level): 300 mg/kg
	Method: OECD TG 422
	Test substance: Structurally similar substance

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 Oncorhynchus mykiss (rainbow trout): > 100 mg/l / 96 h Test substance: Structurally similar substance
	Method: OECD TG 203
Toxicity in aquatic invertebrates	Daphnia magna (Water flea)
	Method: OECD Test Guideline 202
	In the range of water solubility not toxic under test conditions.
Toxicity to algae	EC50 Pseudokirchneriella subcapitata (green algae): > 100 mg/l / 72 h
	Test substance: Structurally similar substance
	Method: OECD TG 201
Toxicity to bacteria	NOEC local activated sludge: > 1000 mg/l / 3 h
	Test substance: Structurally similar substance
	Method: OECD TG 209
	EC50 local activated sludge: > 1000 mg/l / 3 h
	Test substance: Structurally similar substance
	Method: OECD TG 209
Chronic toxicity in daphnia	NOEC Daphnia magna (Water flea): 32 mg/l / 21 d
	Test substance: Structurally similar substance
	Method: OECD TG 211

12.2 Persistence and degradability

Biodegradability — Exposure time: 28 d; Result: 31,5 % Not readily biodegradable.; Method: OECD TG 301 D

12.3 Bioaccumulative potential

not bioaccumulative

12.4 Mobility in soil

Adsorption on the floor: low.

12.5 Results of PBT and vPvB assessment

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

12.6 Other adverse effects

The data we have at our disposal do not necessitate identification concerning environmental hazard.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

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

Uncleaned 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

Not dangerous according to transport regulations.

14.1 UN number

ADR/RID :- IMDG: - IATA: -

14.2 UN proper shipping name

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: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

No

SECTION 15: REGULATORY INFORMATION

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

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

no data available

15.2 Chemical Safety Assessment

no data available

SECTION 16: OTHER INFORMATION

Relevant H phrases from chapter 3

H225: Highly flammable liquid and vapor.
H301: Toxic if swallowed.
H311: Toxic in contact with skin.
H315: Causes skin irritation.
H331: Toxic if inhaled.
H370: Causes damage to organs.

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 context of the intended use.

This SDS was prepared sincerely on the basis of the information we could obtain, 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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