

## Safety Data Sheet

RECSiLICON

## Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

## 1.1 Product identifier

- Product Name** • **Silane**
- Synonyms** • Hydrogen silicide; Monosilane; SiH<sub>4</sub>; Silane, compressed; silicane; Silicon hydride; Silicon tetrahydride
- REACH Registration Number** • 01-2119436667-29-0001 "TRANSPORTED ISOLATED INTERMEDIATE"

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

- Relevant identified use(s)** • Semiconductor, Doping Agent, Industrial and Specialty Gas applications, Silicon Deposition
- Use(s) advised against** • None known

## 1.3 Details of the supplier of the safety data sheet

- Manufacturer** • REC Advanced Silicon Materials LLC  
119140 Rick Jones Way  
Silver Bow, MT 59750  
United States  
<http://www.recsilicon.com>  
[RECSiliconSDS@RECSilicon.com](mailto:RECSiliconSDS@RECSilicon.com)
- Telephone (General)** • +1-406-496-9877
- Telephone (General)** • +1 (406) 496-9854 - Fax

## 1.4 Emergency telephone number

- Manufacturer** • +1 (406) 496-9877 - REC
- Manufacturer** • +1 703-741-5970 - CHEMTREC
- Manufacturer** • 1-800-424-9300 - CHEMTREC (CCN403)
- Manufacturer** • 4001-204937 - CHEMTREC Local # in China (mandarin)

## Section 2: Hazards Identification

## EU/EEC

According to: Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 2015/830]

## 2.1 Classification of the substance or mixture

- CLP** • Flammable Gases 1 - H220  
Pyrophoric Liquids 1 - H250  
Liquefied Gas - H280  
Acute Toxicity Inhalation 4 - H332

## 2.2 Label Elements

CLP

**DANGER**



- Hazard statements** • H220 - Extremely flammable gas  
 H250 - Catches fire spontaneously if exposed to air  
 H280 - Contains gas under pressure; may explode if heated  
 H332 - Harmful if inhaled

### Precautionary statements

- Prevention** • P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 P222 - Do not allow contact with air.  
 P261 - Avoid breathing gas.  
 P271 - Use only outdoors or in a well-ventilated area.
- Response** • P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
 P381 - Eliminate all ignition sources if safe to do so.  
 P370+P378 - In case of fire: Use to extinguish.  
 P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 P312 - Call a POISON CENTER/doctor if you feel unwell.  
 P302+P334 - IF ON SKIN: Immerse in cool water/wrap in wet bandages.
- Storage/Disposal** • P410+P403 - Protect from sunlight. Store in a well-ventilated place.  
 P271 - Use only outdoors or in a well-ventilated area.  
 P422 - Store contents under appropriate liquid or inert gas - .

## 2.3 Other Hazards

- CLP
- According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.

## UN GHS Revision 6

According to: UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS): Sixth Revised Edition

### 2.1 Classification of the substance or mixture

- UN GHS
- Flammable Gases 1
  - Pyrophoric Liquids 1
  - Liquefied Gas
  - Acute Toxicity Inhalation 4

### 2.2 Label elements

UN GHS

#### DANGER



- Hazard statements** • Extremely flammable gas  
 Catches fire spontaneously if exposed to air  
 Contains gas under pressure; may explode if heated  
 Harmful if inhaled

### Precautionary statements

- Prevention** • Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 Do not allow contact with air.  
 Handle and store contents under inert gas . Protect from moisture.  
 Keep container tightly closed.  
 Avoid breathing gas.  
 Use only outdoors or in a well-ventilated area.

- Response** • Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
In case of leakage, eliminate all ignition sources.  
In case of fire: Use to extinguish.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
Call a POISON CENTER/doctor if you feel unwell.  
IF ON SKIN: Immerse in cool water or wrap in wet bandages.

- Storage/Disposal** • Protect from sunlight. Store in a well-ventilated place.  
Use only outdoors or in a well-ventilated area.

## 2.3 Other hazards

### UN GHS

- According to the Globally Harmonized System for Classification and Labeling (GHS) this product is considered hazardous

## United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

## 2.1 Classification of the substance or mixture

### OSHA HCS 2012

- Pyrophoric Gas
- Flammable Gases 1
- Liquefied Gas
- Acute Toxicity Inhalation 4

## 2.2 Label elements

### OSHA HCS 2012

### DANGER



- Hazard statements** • Extremely flammable gas  
Catches fire spontaneously if exposed to air  
Contains gas under pressure; may explode if heated  
Harmful if inhaled

## Precautionary statements

- Prevention** • Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking.  
Do not allow contact with air.  
Avoid breathing gas.  
Use only outdoors or in a well-ventilated area.

- Response** • Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
Eliminate all ignition sources if safe to do so.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
Call a POISON CENTER/doctor if you feel unwell.

- Storage/Disposal** • Protect from sunlight. Store in a well-ventilated place.

## 2.3 Other hazards

### OSHA HCS 2012

- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

## Canada

According to: WHMIS 2015

## 2.1 Classification of the substance or mixture

### WHMIS 2015

- Pyrophoric Gases 1
- Flammable Gases 1
- Liquefied Gas
- Acute Toxicity Inhalation 4

## 2.2 Label elements

### WHMIS 2015

#### DANGER



- Hazard statements** • Extremely flammable gas  
Catches fire spontaneously if exposed to air  
Contains gas under pressure; may explode if heated  
Harmful if inhaled

#### Precautionary statements

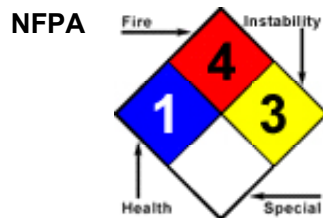
- Prevention** • Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.  
No smoking.  
Do not allow contact with air.  
Avoid breathing gas.  
Use only outdoors or in a well-ventilated area.
- Response** • In case of leakage, eliminate all ignition sources.  
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
Call a POISON CENTER/doctor if you feel unwell.
- Storage/Disposal** • Protect from sunlight. Store in a well-ventilated place.

## 2.3 Other hazards

### WHMIS 2015

- In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

## 2.4 Other information



- NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=4 REACTIVITY=3

## Section 3 - Composition/Information on Ingredients

### 3.1 Substances

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments
Silane	CAS:7803-62-5 EINECS:232-263-4	> 99%	Inhalation-Rat LC50 • 9600 ppm 4 Hour(s)	<b>EU CLP:</b> Pyr. Gas, H250; Flam. Gas 1, H220; Press Gas. - Liq., H280; Acute Tox. 4, H332 <b>UN GHS Revision 6:</b> Pyr. Gas; Flam. Gas 1; Press Gas.; Acute Tox. 4 (Inhl) <b>OSHA HCS 2012:</b> Pyr. Gas; Flam. Gas 1; Press Gas.; Acute Tox. 4 (Inhl) <b>WHMIS 2015:</b> Pyr. Gas; Flam. Gas 1; Press Gas.; Acute Tox. 4 (Inhl)	NDA

## 3.2 Mixtures

- Material does not meet the criteria of a mixture.

## Section 4 - First Aid Measures

### 4.1 Description of first aid measures

#### Inhalation

- Move victim to fresh air. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult. If signs/symptoms continue, get medical attention.

#### Skin

- If frostbite has occurred, seek medical attention immediately; do NOT rub the affected area(s) or flush them with water. In order to prevent further tissue damage, do NOT attempt to remove frozen clothing from frostbitten areas. If frostbite has not occurred, immediately and thoroughly wash contaminated skin with soap and water.

#### Eye

- If eye tissue is frozen, seek medical attention immediately; if tissue is not frozen, immediately and thoroughly flush the eyes with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation, pain, swelling, lacrimation or photophobia persist, get medical attention as soon as possible.

#### Ingestion

- If frostbite has occurred, seek medical attention immediately; do NOT rub the affected area(s) or flush them with water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting.

### 4.2 Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

### 4.3 Indication of any immediate medical attention and special treatment needed

#### Notes to Physician

- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

### 4.4 Other information

- The primary health hazard associated with silane are burns due to silane flame exposure or thermal radiation.

## Section 5 - Firefighting Measures

### 5.1 Extinguishing media

**Suitable Extinguishing Media** • DO NOT EXTINGUISH burning silane unless silane leak can be safely stopped. Use water spray or fog to keep container cooled.

**Unsuitable Extinguishing Media** • No data available

### 5.2 Special hazards arising from the substance or mixture

#### Unusual Fire and Explosion Hazards

- **EXTREMELY FLAMMABLE**  
Will be easily ignited by heat, sparks or flames.  
Will form explosive mixtures with air.  
Vapors from liquefied gas are initially heavier than air and spread along ground.  
Vapors may travel to source of ignition and flash back.  
Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.  
Containers may explode when heated.  
Ruptured cylinders may rocket.

#### Hazardous Combustion Products

- No data available

### 5.3 Advice for firefighters

- DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED

Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

Always wear thermal protective clothing when handling refrigerated/cryogenic liquids. Wear positive pressure self-contained breathing apparatus (SCBA).

Move containers from fire area if you can do it without risk.

FIRE: If MEGC, tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all direction; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

FIRE INVOLVING TANKS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.

FIRE INVOLVING TANKS: Cool containers with flooding quantities of water until well after fire is out.

FIRE INVOLVING TANKS: Do not direct water at source of leak or safety devices; icing may occur.

FIRE INVOLVING TANKS: Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.

FIRE INVOLVING TANKS: ALWAYS stay away from tanks engulfed in fire.

FIRE INVOLVING TANKS: For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

## Section 6 - Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

#### Personal Precautions

- Ventilate the area before entry. Do not walk through spilled material. Use appropriate Personal Protective Equipment (PPE) Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.

#### Emergency Procedures

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away. Keep out of low areas. Stay upwind. LARGE SPILL: Consider initial downwind evacuation for at least 800 meters (1/2 mile) As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.

### 6.2 Environmental precautions

- Prevent spreading of vapors through sewers, ventilation systems and confined areas.

### 6.3 Methods and material for containment and cleaning up

#### Containment/Clean-up Measures

- Stop leak if you can do it without risk. Allow substance to evaporate. Isolate area until gas has dispersed. If possible, turn leaking containers so that gas escapes rather than liquid. Use water spray to reduce vapors; do not put water directly on leak, spill area or inside container. Do not direct water at spill or source of leak. All equipment used when handling the product must be grounded.

### 6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

## Section 7 - Handling and Storage

### 7.1 Precautions for safe handling

#### Handling

- Use good safety and industrial hygiene practices. Use only with adequate ventilation. Do not enter storage areas and confined spaces unless adequately ventilated. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Store and use away from heat, sparks, open flame or any other ignition source. Contains gas under pressure. Put on appropriate personal

protective equipment (see Section 8). Wear appropriate respirator when ventilation is inadequate. Avoid breathing gas. Avoid contact with skin, eyes, and clothing. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back-flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

## 7.2 Conditions for safe storage, including any incompatibilities

### Storage

- Use a first-in, first-out inventory system to prevent storing full containers for long periods. Store only where temperature will not exceed 125°F (52°C). Post "No Smoking/No Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g, NFPA 30, NFPA 55, NFPA 70, NFPA 221, and/or CGA G-13 in the U.S.) or per requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Always install valve protection cap firmly in place by hand when the container is not in use. Store full and empty containers separately.

### 7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

## Section 8 - Exposure Controls/Personal Protection

### 8.1 Control parameters

Exposure Limits/Guidelines			
	Result	ACGIH	NIOSH
Silane (7803-62-5)	TWAs	5 ppm TWA	5 ppm TWA; 7 mg/m3 TWA

### 8.2 Exposure controls

#### Engineering Measures/Controls

- Use only with adequate ventilation. Engineering controls may be required to control the primary or secondary risks associated with this product. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

#### Personal Protective Equipment

##### Respiratory

- Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable).

##### Eye/Face

- Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Select eye protection in accordance with OSHA 29 CFR 1910.133 or local authority.

##### Hands

- Flame and chemical-resistant, impervious gloves complying with an approved standard should be worn always when handling chemical products if a risk assessment

indicates this is necessary. Select per OSHA 29 CFR 1910.132, 1910.136, and 1910.138 or local authority. Wear cold insulating gloves when transfilling or breaking transfer connections.

### Skin/Body

- Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Select per OSHA 29 CFR 1910.132, 1910.136, and 1910.138 or local authority. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Select per OSHA 29 CFR 1910.132, 1910.136, and 1910.138 or local authority.

### General Industrial Hygiene Considerations

- Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

### Environmental Exposure Controls

- Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

#### Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

NIOSH = National Institute of Occupational Safety and Health

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

## Section 9 - Physical and Chemical Properties

### 9.1 Information on Basic Physical and Chemical Properties

Material Description			
Physical Form	Gas	Appearance/Description	Colorless gas with repulsive, choking odor.
Color	Colorless	Odor	Repulsive, choking odor.
Odor Threshold	Data lacking		
General Properties			
Boiling Point	-111.7 °C(-169.06 °F) at 1 atm	Melting Point/Freezing Point	-185.2 °C(-301.36 °F)
Decomposition Temperature	400 °C(752 °F)	pH	Data lacking
Specific Gravity/Relative Density	(gas) 1 atm @ 70F (21.1C)	Water Solubility	Negligible < 0.1 %
Viscosity	Data lacking	Explosive Properties	Data lacking
Oxidizing Properties:	Data lacking		
Volatility			
Vapor Pressure	53.3 kPa @ -188 °C(-306.4 °F)	Vapor Density	1.1 Air=1
Evaporation Rate	Data lacking		
Flammability			
Flash Point	Data lacking	UEL	96 %
LEL	1.37 %	Autoignition	Data lacking
Flammability (solid, gas)	Data lacking		
Environmental			
Octanol/Water Partition coefficient	Data lacking		

### 9.2 Other Information

- The ignition and combustion characteristics of a 100% silane release have been the subject of major studies. Based on these studies, the LFL of silane in air has been



established as 1.37%. Concentrations from 1.37% to 4.5% in air are able to be ignited by an external source (piloted ignition) resulting in deflagration with laminar burning velocity reaching 5 m/s (985 linear ft/min) . When the silane concentration is greater than 4.5% in air, the mixture is metastable and is capable of autoignition after a certain delay, with shorter ignition delays at higher concentrations. Test results also have shown that silane air mixtures do not always autoignite, even at higher concentrations. A delayed ignition is capable of resulting in a deflagration or a detonation.

## Section 10: Stability and Reactivity

### 10.1 Reactivity

- This product, by reaction with air and without energy supply, is liable to self-heat and may ignite when in large amounts and after long periods of time.

### 10.2 Chemical stability

- Stable under normal temperatures and pressures.

### 10.3 Possibility of hazardous reactions

- This product, by reaction with air and without energy supply, is liable to self-heat and may ignite when in large amounts and after long periods of time.

### 10.4 Conditions to avoid

- Do not allow contact with air. Keep away from heat, sparks, and flame.

### 10.5 Incompatible materials

- Reactive or incompatible with the following materials: oxidizing materials, alkalis, moisture, air, halogenated compounds, Chlorine.

### 10.6 Hazardous decomposition products

- Under normal conditions of storage and use: Hazardous decomposition products should not be produced. When released: Hydrogen. Silica dust. Silicon dioxide. Powder produced in the absence of air may be flammable.

## Section 11 - Toxicological Information

### 11.1 Information on toxicological effects

Components		
Silane (> 99%)	7803-62-5	<b>Acute Toxicity:</b> Inhalation-Rat LC50 • 9600 ppm 4 Hour(s)

GHS Properties	Classification
<b>Acute toxicity</b>	EU/CLP • Acute Toxicity - Inhalation 4 UN GHS 6 • Acute Toxicity - Inhalation 4 OSHA HCS 2012 • Acute Toxicity - Inhalation 4 WHMIS 2015 • Acute Toxicity - Inhalation 4
<b>Skin corrosion/Irritation</b>	EU/CLP • Data lacking UN GHS 6 • Data lacking OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
<b>Serious eye damage/Irritation</b>	EU/CLP • Data lacking UN GHS 6 • Data lacking OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking

<b>Skin sensitization</b>	EU/CLP • Data lacking UN GHS 6 • Data lacking OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
<b>Respiratory sensitization</b>	EU/CLP • Data lacking UN GHS 6 • Data lacking OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
<b>Aspiration Hazard</b>	EU/CLP • Data lacking UN GHS 6 • Data lacking OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
<b>Carcinogenicity</b>	EU/CLP • Data lacking UN GHS 6 • Data lacking OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
<b>Germ Cell Mutagenicity</b>	EU/CLP • Data lacking UN GHS 6 • Data lacking OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
<b>Toxicity for Reproduction</b>	EU/CLP • Data lacking UN GHS 6 • Data lacking OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
<b>STOT-SE</b>	EU/CLP • Data lacking UN GHS 6 • Data lacking OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking
<b>STOT-RE</b>	EU/CLP • Data lacking UN GHS • Data lacking OSHA HCS 2012 • Data lacking WHMIS 2015 • Data lacking

## Potential Health Effects

### Inhalation

#### Acute (Immediate)

- Harmful if inhaled. This material is a simple asphyxiant. May displace or reduce oxygen available for breathing especially in confined spaces. If this material is released in a small, poorly ventilated area (i.e. an enclosed or confined space), an oxygen-deficient environment may occur. Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. Under some circumstances of over-exposure, death may occur. The following effects associated with decreased levels of oxygen: increase in breathing and pulse rate, emotional upset, abnormal fatigue, nausea, vomiting, collapse, loss of consciousness, convulsive movements, respiratory collapse and death.

#### Chronic (Delayed)

- No data available

### Skin

#### Acute (Immediate)

- Contact with gas or liquefied gas will cause burns, severe injury and/or frostbite.

#### Chronic (Delayed)

- No data available

### Eye

#### Acute (Immediate)

- Contact with gas or liquefied gas will cause burns, severe injury and/or frostbite.

**Chronic (Delayed)** • No data available

### Ingestion

**Acute (Immediate)** • Contact with gas or liquefied gas will cause burns, severe injury and/or frostbite.

**Chronic (Delayed)** • No data available

## Section 12 - Ecological Information

### 12.1 Toxicity

- No known significant effects or critical hazards.

### 12.2 Persistence and degradability

- No data available

### 12.3 Bioaccumulative potential

- No data available

### 12.4 Mobility in Soil

- No data available

### 12.5 Results of PBT and vPvB assessment

- No PBT and vPvB assessment has been conducted.

### 12.6 Other adverse effects

- No data available.

## Section 13 - Disposal Considerations

### 13.1 Waste treatment methods

**Product waste** • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**Packaging waste** • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

## Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	UN2203	Silane	2.1	Not Applicable	NDA
TDG	UN2203	SILANE	2.1	Not Applicable	NDA
IMO/IMDG	UN2203	SILANE	2.1	Not Applicable	NDA
ADR/RID	UN2203	Silane	2.1	Not Applicable	NDA
IATA/ICAO	UN2203	Silane	2.1	Not Applicable	NDA

**14.6 Special precautions for user** • None specified.

**14.7 Transport in bulk according to Annex II of Marpol and the IBC Code** • Data lacking.

### 14.8 Other information

**DOT** • Passenger Aircraft: Forbidden. Cargo Aircraft Only: Forbidden. Vessel Stowage

Location: E – See 49CFR§172.101(k)(5) for details. ERG: 116.

**TDG** • (EmS): F-D, S-U. MFAG-no: 116.

**ADR/RID** • Hazard identification number: 23. Limited quantity: LQ0. Special provisions: 632.  
Tunnel code: (B/D).

## Section 15 - Regulatory Information

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

Inventory						
Component	CAS	Canada DSL	Canada NDSL	EU EINECS	EU ELNICS	TSCA
Silane	7803-62-5	Yes	No	Yes	No	Yes

#### Canada

##### Environment

###### Canada - CEPA - Priority Substances List

• Silane	7803-62-5	Not Listed
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#### United States

##### Labor

###### U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

• Silane	7803-62-5	Not Listed
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###### U.S. - OSHA - Specifically Regulated Chemicals

• Silane	7803-62-5	Not Listed
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##### Environment

###### U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

• Silane	7803-62-5	Not Listed
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###### U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• Silane	7803-62-5	Not Listed
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###### U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Silane	7803-62-5	Not Listed
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###### U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Silane	7803-62-5	Not Listed
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###### U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Silane	7803-62-5	Not Listed
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###### U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Silane	7803-62-5	Not Listed
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###### U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

• Silane	7803-62-5	Not Listed
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#### United States - California

##### Environment

###### U.S. - California - Proposition 65 - Carcinogens List

• Silane	7803-62-5	Not Listed
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<b>U.S. - California - Proposition 65 - Developmental Toxicity</b> • Silane	7803-62-5	Not Listed
<b>U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)</b> • Silane	7803-62-5	Not Listed
<b>U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)</b> • Silane	7803-62-5	Not Listed
<b>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</b> • Silane	7803-62-5	Not Listed
<b>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</b> • Silane	7803-62-5	Not Listed

## 15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

## Section 16 - Other Information

<b>Revision Date</b>	• 18/June/2019
<b>Last Revision Date</b>	• 18/June/2019
<b>Preparation Date</b>	• 10/May/2019
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### Key to abbreviations

NDA = No Data Available