



Safety Data Sheet

Silane

Section 1: Product and Company Identification

Middlesex Gases & Technologies

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Product Code: Silane

Section 2: Hazards Identification



Warning

Hazard Classification:

Gases Under Pressure

Hazard Statements:

Contains gas under pressure; may explode if heated

Precautionary Statements

Storage:

Protect from sunlight.
Store in well-ventilated place.

Section 3: Composition/Information on Ingredients

CAS #
7803-62-5

Chemical Substance	Chemical Family	Trade Names
SILANE	hydrides	MONOSILANE (SIH4); SILICANE; SILICON HYDRIDE (SIH4); SILICON TETRAHYDRIDE; SILICON HYDRIDE; MONOSILANE; STCC 4920168; UN 2203; H4Si

Section 4: First Aid Measures

Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.	Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.	If a large amount is swallowed, get medical attention.	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.	None

Section 5: Fire Fighting Measures

Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
Carbon dioxide, regular dry chemical Large fires: Use regular foam or flood with fine water spray.	Pyrophoric or shock-sensitive, dark-colored solids may be formed due to incomplete oxidation	<ul style="list-style-type: none"> ▪ Any self-contained breathing apparatus with a full facepiece. ▪ Any self-contained breathing apparatus with a full facepiece.

Section 6: Accidental Release Measures

Personal Precautions	Environmental Precautions	Methods for Containment
Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering.	Avoid heat, flames, sparks and other sources of ignition.	Stop leak if possible without personal risk. Reduce vapors with water spray. Remove sources of ignition.

Methods for Cleanup	Other Information
Evacuate area. Contact emergency personnel.	None

Section 7: Handling and Storage

Handling	Storage
Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Store above -110 C. Store in a tightly closed container.	May ignite on exposure to air. Keep separated from incompatible substances.

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines
SILANE: 5 ppm (7 mg/m ³) OSHA TWA (vacated by 58 FR 35338, June 30, 1993) 5 ppm ACGIH TWA 5 ppm (7 mg/m ³) NIOSH recommended TWA 10 hour(s).

Engineering Controls

Handle only in fully enclosed systems.

Eye Protection	Skin Protection	Respiratory Protection
Wear helmet with full face shield and fire-proof hood to prevent any possibility of burns if in contact with this substance.	Wear appropriate chemical resistant clothing.	Any self-contained breathing apparatus with a full facepiece.

General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

Section 9: Physical and Chemical Properties

Physical State	Appearance	Color	Change in Appearance	Physical Form	Odor	Taste
Gas	Clear	Colorless	N/A	Gas	Unpleasant odor	N/A

Flash Point	Flammability	Partition Coefficient	Autoignition Temperature	Upper Explosive Limits	Lower Explosive Limits
Not available	Not available	Not available	Not available	1	0.01

Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity	Water Solubility	pH	Odor Threshold	Evaporation Rate	Viscosity
-170 F (-112 C)	-301 F (-185 C)	Not available	1.3 (Air=1)	Not applicable	Insoluble	Not applicable	Not available	Not applicable	0.01092 cP @ 25 C

Molecular Weight	Molecular Formula	Density	Weight per Gallon	Volatility by Volume	Volatility	Solvent Solubility
32.12	SI-H4	1.342 g/L @ 20 C	Not available	100%	1	Insoluble: Not available

Section 10: Stability and Reactivity

Stability	Conditions to Avoid	Incompatible Materials
May ignite on exposure to air.	May ignite on exposure to air.	Metal salts, bases, halogens, oxidizing materials

Hazardous Decomposition Products	Possibility of Hazardous Reactions
Silicon, hydrogen. Thermal decomposition in the presence of air produces hydrogen gas, silicon, silicon oxides and unidentified dark-colored solid substances that may be pyrophoric or shock-sensitive.	Will not polymerize.

Section 11: Toxicology Information

Acute Effects

Oral LD50	Dermal LD50	Inhalation
LC50, 1 hr, rat = 19,200 ppm	Not available	Irritation, nausea, headache

Eye Irritation	Skin Irritation	Sensitization
Irritation, blurred vision	Liquid: irritation, blisters	Respiratory tract irritation, skin irritation, eye irritation

Chronic Effects

Carcinogenicity	Mutagenicity	Reproductive Effects	Developmental Effects
Not available	Available.	Not available	No data

Section 12: Ecological Information

Fate and Transport

Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment
Fish toxicity: Not available Invertebrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available	Not available	Not available	Not available

Section 13: Disposal Considerations

Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001. Dispose in accordance with all applicable regulations.

Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Labeling Requirements	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
Silane	UN2203	2.1	Not applicable	2.1	Forbidden	Forbidden	N/A

Canadian Transportation of Dangerous Goods

Shipping Name	UN Number	Class	Packing Group / Risk Group
Silane, compressed	UN2203	2.1	Not applicable

Section 15: Regulatory Information

U.S. Regulations

CERCLA Sections	SARA 355.30	SARA 355.40
Not regulated.	Not regulated.	Not regulated.

SARA 370.21

Acute	Chronic	Fire	Reactive	Sudden Release
Yes	No	Yes	Yes	Yes

SARA 372.65

Not regulated.

OSHA Process Safety

Not regulated.

State Regulations

CA Proposition 65

Not regulated.

Canadian Regulations

WHMIS Classification

AB

National Inventory Status

US Inventory (TSCA)	TSCA 12b Export Notification	Canada Inventory (DSL/NDSL)
Listed on inventory.	Not listed.	Not determined.

Section 16: Other Information

NFPA Rating

HEALTH=2 FIRE=4 REACTIVITY=3

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard