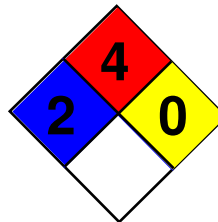


Silane

In an emergency, call CHEMTREC at 800-424-9300 or MEMC Pasadena at 713-740-1501



SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Silane
Chemical Name: Silicon Tetrahydride
Chemical Formula: H₄Si
Synonyms: Monosilane, Silicane, Silicon Tetrahydride
Company Name: MEMC Pasadena
3000 N. South Street
Pasadena, Texas 77503
713-740-1501

SECTION 2: COMPOSITION & INFORMATION ON INGREDIENTS

Substance Name	Contents	CAS No.	OSHA PEL	ACGIH TLV
Silicon Tetrahydride	100%	7803-62-5	Not established	5 ppm

SECTION 3: HAZARDS IDENTIFICATION

NFPA 704 Rating: Health 2, Fire 4, Reactivity 0, Special None
Eye Contact: Expected to be an eye irritant.

Silane

SECTION 4: FIRST AID MEASURES

Inhalation:	Remove to fresh air. If breathing is difficult, give oxygen and seek medical attention.
Eye Contact:	Flush with copious amounts of water for at least 15 minutes. If irritation persists, seek medical attention.
Skin Contact:	Remove contaminated clothing. Immediately flush skin with plenty of water for at least 15 minutes. Get medical attention promptly.
Ingestion:	If swallowed, drink as much water as possible. Do not induce vomiting. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

Flammability Classification (Per 49 CFR Part 173 Subpart D):	2.1 (Flammable Gas)
Known or Anticipated Hazardous Products of Combustion:	Includes amorphous silica dust
Extinguishing Media:	Not applicable. Use water spray or fog to cool exposed equipment and containers. Do not breathe smoke or vapors.
Fire Fighting Instructions:	Evacuate all personnel from danger area. Do not approach area without self-contained breathing apparatus and protective clothing. Immediately cool containers with water spray from maximum distance. Stop flow of gas, if without risk, while continuing cooling water spray. If flow of gas can not be shut off, allow fire to burn out. Reduce combustion products with water spray or fog. Remove all containers from area of fire, if without risk.
Unusual Fire And Explosion Hazards:	Pyrophoric gas (may ignite spontaneously in air either immediately or delayed). Containers may rupture due to heat of fire. Containers should not be subjected to a temperature higher than 52°C/126°F. Backflow into cylinder may cause explosion. Most containers are provided with a pressure relief device designed to vent container contents when they are exposed to elevated temperature.

Silane

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personnel Protection:	Avoid skin contact. Do not inhale vapors. Evacuate immediate areas as necessary. Use NIOSH-approved dust, fume, mist respirator. Ensure adequate ventilation. Keep unprotected personnel away.
Environmental Protection:	Take precautions to ensure material does not contaminate the ground or enter the drainage system.

SECTION 7: HANDLING AND STORAGE

Handling:	Avoid contact with eyes, skin and clothing. Keep containers tightly sealed.
Storage:	Store in cool, dry, well-ventilated area. Close valve on container when not in use.

See Section 16 Additional Precautions for additional hazard information.

SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

Ventilation and Engineering Controls:	Use local exhaust ventilation.
Respiratory Protection:	Use NIOSH (U.S.) or CEN (EU) approved dust, fume, mist respirator for combustion or decomposition products.
Eye Protection:	Chemical goggles and the aluminized hood of a proximity suit. Use goggles and face shield for small-scale laboratory operation.
Hand Protection:	Use loose-fitting aluminized or leather gloves.
General Hygiene Measures:	Keep away from foodstuffs, beverages and feed. Remove all soiled/contaminated clothing immediately. Wash hands before breaks and at the end of work. Avoid contact with eyes and skin.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colorless gas
Odor:	Repulsive, choking odor
pH:	Not applicable
Sublimation Temperature (at 1 atm):	Unknown
Solubility in Water:	Reacts with water
Melting Point:	-185 °C
Boiling Point:	-112 °C
Specific gravity/Density:	0.7 g/ml (liquid), 1.342 kg/m ³ (gas)
Vapor Pressure:	Gas at 20 °C
Vapor Density:	1.2 (Air=1)

Silane

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)

Flammability:	Unknown
Flash Point:	Pyrophoric gas
Flammability Limits in Air:	LEL=1.4% UEL=96%
Auto Ignition temperature:	21 °C (70 °F)

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability:	Unstable
Conditions to Avoid:	Cylinder temperature should not exceed 52°C (126°F)
Incompatibility with Other Materials:	Air, water, solutions of bases, oxidizing agents, halogens
Hazardous Decomposition, Reaction And Oxidation (other than burning) Products:	Amorphous silica dust.

Hazardous Polymerization:	Will not occur.
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SECTION 11: TOXICOLOGICAL INFORMATION

RTECS Number:	VV1400000
Acute Toxicity:	Unknown
Chronic and Subchronic Data:	Inhalation LC ₅₀ (rat)>9,600 ppm (4 hours) Dermal LD ₅₀ (rabbit)=3,540 mg/kg
Special Studies:	None known to MEMC Pasadena, Inc.
Suspected cancer agent:	Silane is not found on the following lists: FEDERAL OSHA Z LIST, IARC, NTP, and California and therefore is neither considered to be nor suspected to be a cancer-causing agent by these agencies.
Irritancy of product:	Silane is expected to be irritating to respiratory system.
Sensitization of product:	Silane is not known to be a sensitizer to humans upon prolonged or repeated contact.
Reproductive toxicity information:	Listed below is information concerning the effects of Silane on the human reproductive system.
Mutagenicity:	No human mutagenic effects have been described for Silane.
Embryotoxicity:	No human embryotoxic effects have been described for Silane.
Teratogenicity:	No human teratogenic effects have been described for Silane.
Reproductive Toxicity:	No human reproductive effects have been described for Silane.

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SECTION 12: ECOLOGICAL INFORMATION

Ecological Effects: Take care to prevent material from entering the ground, water courses or drainage systems.

SECTION 13: DISPOSAL CONSIDERATIONS

Consult local, state or national regulations to endure proper disposal.

SECTION 14: TRANSPORTATION INFORMATION

DOT Description/Shipping Name: Silane
DOT Hazard Class: 2.1 (Flammable Gas)
DOT ID Number: UN2203

SECTION 15: REGULATORY INFORMATION

ADDITIONAL U.S. REGULATIONS:

U.S. Sara Reporting Requirements: Silicon Tetrahydride is subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act, as follows:

<u>CHEMICAL NAME</u>	<u>SARA 302</u> (40 CFR 355, Appendix A)	<u>SARA 304</u> (40 CFR Table 302.4)	<u>SARA 313</u> (40 CFR 372.65)
Silicon Tetrahydride	No	No	No

U.S. SARA Threshold Planning Quantity: Not applicable.

U.S. CERCLA Reportable Quantity (RQ): Not applicable.

U.S. TSCA Inventory Status: Silicon Tetrahydride is listed on the TSCA Inventory.

Other U.S. Federal Regulations: Silicon Tetrahydride is not subject to the reporting requirements of CFR 29 1910.1000.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): Silicon Tetrahydride is not on the California Proposition 65 lists.

Pennsylvania Right To Know: Silicon Tetrahydride – Yes

New Jersey Right To Know: Silicon Tetrahydride – Yes

Canadian Regulatory Information: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL – No, NDSL – Yes.

EU Risk Phrases:

R17-36/37/38 Spontaneously flammable in air. Irritating to eyes, respiratory system and skin.

S3/9/49 Keep only in the original container in a cool, well-ventilated place.

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SECTION 16: OTHER INFORMATION

ADDITIONAL PRECAUTIONS OR COMMENTS

Flammable, pyrophoric, high pressure gas (may ignite spontaneously in air, either immediately or delayed). May form an explosive mixture with air. Does not need a source of ignition. Use piping and equipment adequately designed to withstand pressures to be encountered. Use only in a closed system purged with an inert gas prior to discharge from cylinder. Backflow into a cylinder may cause an explosion. Use a check valve or protection apparatus in any line or piping from the cylinder to prevent backflow.

Disclaimer

MEMC Pasadena, Inc. cannot guarantee that these are the only hazards that exist. Users are solely responsible for the safe storage, handling, use and disposal of this material, and for compliance with the applicable laws, regulations and accepted practices. MEMC Pasadena, Inc. makes no representations or warranties; either expressed or implied, of merchantability, fitness for a particular purpose, or any other nature.