

## Chemical Safety Data Sheet MSDS / SDS

## Silicon tetrahydride

Revision Date:2024-12-21 Revision Number:1

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

## Product identifier

Product name : Silicon tetrahydride  
CBnumber : CB4854366  
CAS : 7803-62-5  
EINECS Number : 232-263-4  
Synonyms : Silane, SiH<sub>4</sub>

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

## Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 400-158-6606

## SECTION 2: Hazards identification

## Classification of the substance or mixture

Flammable gases, Category 1A, Flammable gas

## Label elements

## Pictogram(s)

Signal word Danger

## Hazard statement(s)

H220 Extremely flammable gas

H280 Contains gas under pressure; may explode if heated

## Precautionary statement(s)

## Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

## Response

P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381 In case of leakage, eliminate all ignition sources.

**Storage**

P403 Store in a well-ventilated place.

**Disposal**

none

**Other hazards**

no data available

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## SECTION 3: Composition/information on ingredients

**Substance**

|              |                            |
|--------------|----------------------------|
| Product name | : Silicon tetrahydride     |
| Synonyms     | : Silane, SiH <sub>4</sub> |
| CAS          | : 7803-62-5                |
| EC number    | : 232-263-4                |
| MF           | : H <sub>4</sub> Si        |
| MW           | : 32.12                    |

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## SECTION 4: First aid measures

**Description of first aid measures****If inhaled**

Fresh air, rest. Refer for medical attention.

**Following skin contact**

ON FROSTBITE: rinse with plenty of water, do NOT remove clothes. Rinse skin with plenty of water or shower.

**Following eye contact**

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

**Following ingestion**

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

**Most important symptoms and effects, both acute and delayed**

no data available

**Indication of any immediate medical attention and special treatment needed**

no data available

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## SECTION 5: Firefighting measures

**Extinguishing media**

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

## Specific Hazards Arising from the Chemical

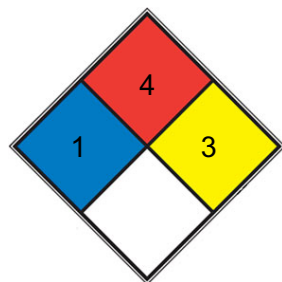
Extremely flammable. Gas/air mixtures are explosive.

### Advice for firefighters

Shut off supply; if not possible and no risk to surroundings, let the fire burn itself out. In other cases extinguish with powder, carbon dioxide.

Combat fire from a sheltered position.

### NFPA 704



☒ HEALTH 1 Exposure would cause irritation with only minor residual injury (e.g. [acetone](#), sodium bromate, potassium chloride)

Will rapidly or completely vaporize at normal atmospheric pressure and temperature, or is readily dispersed in air and will

☒ FIRE 4 burn readily. Includes pyrophoric substances. Flash point below room temperature at 22.8 °C (73 °F). (e.g. acetylene, propane, [hydrogen gas](#))

Capable of detonation or explosive decomposition but requires a strong initiating source, must be heated under

☒ REACT 3 confinement before initiation, reacts explosively with water, or will detonate if severely shocked (e.g. [ammonium nitrate](#), cesium, hydrogen peroxide)

☐ SPEC.

☐ HAZ.

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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Consult an expert! Personal protection: self-contained breathing apparatus. Ventilation. Remove gas with fine water spray.

### Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

### Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

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## SECTION 7: Handling and storage

## Precautions for safe handling

NO open flames, NO sparks and NO smoking. Closed system, ventilation, explosion-proof electrical equipment and lighting. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

## Conditions for safe storage, including any incompatibilities

Fireproof.

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# SECTION 8: Exposure controls/personal protection

## Control parameters

### Occupational Exposure limit values

TLV: 5 ppm as TWA

### Biological limit values

no data available

## Exposure controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

## Individual protection measures

### Eye/face protection

Wear safety goggles or eye protection in combination with breathing protection.

### Skin protection

Cold-insulating gloves.

### Respiratory protection

Use ventilation, local exhaust or breathing protection.

### Thermal hazards

no data available

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# SECTION 9: Physical and chemical properties

## Information on basic physicochemical properties

|  |                   |
|--|-------------------|
| Physical state   | colorless gas     |
| Colour   | no data available |
| Odour  | no data available |
| Melting point/freezing point                             | -185°C            |
| Boiling point or initial boiling point and boiling range | -112°C            |
| Flammability   | no data available |
| Lower and upper explosion limit/flammability limit       | no data available |

|                                       |                                    |
|---------------------------------------|------------------------------------|
| Flash point                           | no data available                  |
| Auto-ignition temperature             | no data available                  |
| Decomposition temperature             | no data available                  |
| pH                                    | no data available                  |
| Kinematic viscosity                   | no data available                  |
| Solubility                            | Solubility in water: slow reaction |
| Partition coefficient n-octanol/water | no data available                  |
| Vapour pressure                       | no data available                  |
| Density and/or relative density       | 0.680                              |
| Relative vapour density               | 0.680                              |
| Particle characteristics              | no data available                  |

## SECTION 10: Stability and reactivity

### Reactivity

no data available

### Chemical stability

no data available

### Possibility of hazardous reactions

The gas is heavier than air. The substance may ignite spontaneously on contact with air. Decomposes on heating and on burning. This produces silicon and hydrogen. This generates fire and explosion hazard. The substance is a strong reducing agent. It reacts violently with oxidants. Reacts with potassium hydroxide solution and halogens.

### Conditions to avoid

no data available

### Incompatible materials

no data available

### Hazardous decomposition products

no data available

## SECTION 11: Toxicological information

### Acute toxicity

- Oral: no data available
- Inhalation: no data available
- Dermal: no data available

### Skin corrosion/irritation

no data available

### **Serious eye damage/irritation**

no data available

### **Respiratory or skin sensitization**

no data available

### **Germ cell mutagenicity**

no data available

### **Carcinogenicity**

no data available

### **Reproductive toxicity**

no data available

### **STOT-single exposure**

The substance is irritating to the eyes, skin and respiratory tract. Rapid evaporation of the liquid may cause frostbite.

### **STOT-repeated exposure**

no data available

### **Aspiration hazard**

A harmful concentration of this gas in the air will be reached very quickly on loss of containment.

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## **SECTION 12: Ecological information**

### **Toxicity**

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

### **Persistence and degradability**

no data available

### **Bioaccumulative potential**

no data available

### **Mobility in soil**

no data available

### **Other adverse effects**

no data available

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## SECTION 13: Disposal considerations

### Disposal methods

#### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

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## SECTION 14: Transport information

### UN Number

ADR/RID: UN2203 (For reference only, please check.)

IMDG: UN2203 (For reference only, please check.)

IATA: UN2203 (For reference only, please check.)

### UN Proper Shipping Name

ADR/RID: SILANE (For reference only, please check.)

IMDG: SILANE (For reference only, please check.)

IATA: SILANE (For reference only, please check.)

### Transport hazard class(es)

ADR/RID: 2.1 (For reference only, please check.)

IMDG: 2.1 (For reference only, please check.)

IATA: 2.1 (For reference only, please check.)

### Packing group, if applicable

ADR/RID: (For reference only, please check.)

IMDG: (For reference only, please check.)

IATA: (For reference only, please check.)

### Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

### Special precautions for user

no data available

### Transport in bulk according to IMO instruments

## SECTION 15: Regulatory information

### Safety, health and environmental regulations specific for the product in question

#### European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

#### EC Inventory

Listed.

#### United States Toxic Substances Control Act (TSCA) Inventory

Listed.

#### China Catalog of Hazardous chemicals 2015

Listed.

#### New Zealand Inventory of Chemicals (NZIoC)

Listed.

#### PICCS

Listed.

#### Vietnam National Chemical Inventory

Listed.

#### IECSC

Listed.

#### Korea Existing Chemicals List (KECL)

Listed.

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## SECTION 16: Other information

### Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

### References

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>



eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pagelD=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pagelD=0&request_locale=en)

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

**Disclaimer:**

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