

SPI Supplies Division

Structure Probe, Inc.

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Manufacturer's CAGE: 1P573

Safety Data Sheet

Date Effective: January 23, 2018

SPI Catalog #'s 01813-BA, 01813-CF, 01813-MB

SPI-Chem™ Silicon Monoxide (SiO) Chips, 3-6mm

Section 1.1: Identification

Chemical Name/Synonyms Silicon monoxide

Product or Trade Name SPI-Chem™ Silicon Monoxide (SiO) Chips, 3-6mm

CAS #'s 10097-28-6

Chemical Formula..... SiO

Section 1.2: Relevant Uses/Restrictions

For use in making thin films and replicas in the electron microscopy laboratory.

Section 1.3: Supplier of the Safety Data Sheet

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Section 1.4: Emergency telephone number

Emergencies

Contacting CHEMTREC:

24 Hour Emergency Use Only #'s...

Worldwide phone: 1-(703)-741-5970

Toll-free phone: 1-(800)-424-9300 USA + Canada only

Section 2: Hazard Identification

2.1 Classification of the substance

Not a hazardous substance or mixture.

2.2 GHS Label elements

Not a hazardous substance or mixture

2.3 Other Hazards

Hazards not otherwise classified (HNOC) or not covered by GHS: none

Hazardous Material Information System USA

Health 0
Fire Hazard 0
Reactivity 0
Personal Protection

NFPA Rating (estimated)

Health 1
Flammability..... 0
Reactivity 0

Section 3: Composition

3.1 Substances:

SiO, 99.9 %
CAS # 10097-28-6
EC-No 233-232-8

No components need to be disclosed according to the applicable regulations.

Section 4: First Aid Measures

4.1 Description of first aid measures:

Eyes: Flush eyes with lukewarm water, lifting eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.

Skin: remove contaminated clothing. Brush material off skin and wash affected area with mild soap and water. Seek medical attention if symptoms persist.

Ingestion: No acute or chronic health effects are known by ingestion.

Inhalation: Remove victim to fresh air. Give oxygen if breathing is difficult. Seek medical attention if symptoms persist.

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

No additional relevant information available.

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

No additional relevant information available.

Section 5: Fire Fighting Measures

5.1 Extinguishing media:

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

5.2 Special hazards arising from the substance or mixture:

No relevant information available.

Hazardous combustion products: Silicon monoxide may emit toxic fumes if involved in a fire. May be flammable and possibly pyrophoric on contact with air at extremely elevated temperatures.

5.3 Advice for firefighters:

Wear self-contained breathing apparatus for firefighting if necessary.

Section 6: Accidental Release Measures

6.1 Personal precautions:

Avoid dust formation.
Avoid breathing dust, vapors, mist, or gas.

6.2 Environmental precautions:

No special environmental precautions required.

6.3 Methods and material for containment and cleaning up:

Isolate spill area.
Provide ventilation.
Vacuum up spill using high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal.

6.4 Reference to other sections:

For personal protection see Section 8.
For disposal see Section 13.

Section 7: Handling and Storage

7.1 Precautions for safe handling:

Protective measures:

Further processing of solid materials may result in the formation of combustible dusts.
The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.

Advice on general hygiene conditions:

Wash thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities:

Store in cool, dry area in tightly closed containers.

7.3 Specific end uses:

For use in making thin films and replicas in the electron microscopy laboratory.
This material is not being offered for clinical or diagnostic applications, agricultural uses or for human or animal consumption.

Section 8: Exposure Controls and Personal Protection

8.1 Control parameter and Personal Protection:

Workplace exposure limits:

No exposure limits listed for ACGIH, NIOSH, OSHA.

OSHA:

Component	PerCent	TLV	PEL
Silicon monoxide	100%	10 mg/m ³ (total dust)	15 mg/m ³ (total dust)

Biological limit values:

No additional relevant information available.

8.2 Exposure controls:**8.2.1 Appropriate engineering controls:**

Use local exhaust to maintain concentration at low exposure levels.

8.2.2 Individual protection measures:

Eyes: Safety glasses

Skin: Impervious gloves

Clothing: Suitable to prevent skin contact

Respirators: Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components approved by NIOSH (US) or CEN (EU) where required by conditions.

8.2.3 Environmental exposure controls:

No special environmental precautions required.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties:

Physical State: solid

Appearance: black

Odor: none

pH: n/a

Vapor Pressure: n/a

Vapor Density: n/a

Evaporation Rate: n/a

Viscosity: n/a

Boiling Point: 1880°C (3416.0°F)

Freezing/Melting Point: 1702.0°C (3095.6°F)

Auto-ignition Temperature: n/a

Flash Point: n/a

Decomposition Temperature: n/a

Explosion Limits:

Lower: n/a

Upper: n/a

Solubility in water: insoluble

Specific Gravity/Density: 2.13 (water=1)

Molecular Formula: SiO

Molecular Weight: 44.08

n/a = not available

9.2 Other information:

No additional relevant information available.

Section 10: Stability and Reactivity

10.1 Reactivity:

No relevant information available.

10.2 Chemical Stability:

Stable under recommended storage conditions.

10.3 Possibility of Hazardous Reactions:

No relevant information available.

10.4 Conditions to avoid:

No relevant information available.

10.5 Incompatible materials: Strong oxidizing agents, Strong acids, Strong bases.

10.6 Hazardous decomposition products:

Hazardous decomposition products formed under fire conditions: silicon oxides.

Other decomposition products: No additional information available.

Section 11: Toxicological Information

11.1 Information on toxicological effects

RTECS#: n/a

LD₅₀/LC₅₀ Information: n/a

CAS# 10097-28-6 is not listed by ACGIH, NIOSH, NTP, IARC and is not listed by California Prop 65 as a known carcinogen.

Teratogenicity: n/a

Reproductive Effects: n/a

Neurotoxicity: n/a

Mutagenicity: n/a

Other Studies: n/a

Section 12: Ecological Information

12.1 Toxicity: No data available.

12.2 Persistence and degradability: No data available.

12.3 Bio-accumulative potential: No data available.

12.4 Mobility in soil: No data available.

12.5 Results of PBT and vPvB assessment: PBT / vPvB assessment not available as chemical safety assessment not required / not conducted.

12.6 Other adverse effects: No data available.

Section 13: Disposal Considerations

13.1 Waste treatment methods:

Product: Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging: Dispose of as unused product.

Section 14: Transport Information

DOT: Not regulated as dangerous goods.

IATA: Not regulated as dangerous goods.

IMDG: Not regulated as dangerous goods.

Section 15: Regulatory Information

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

TSCA

CAS# 10097-28-6 is listed on the TSCA Inventory.

Health & Safety Reporting List

CAS# 10097-28-6 is not on the Health & Safety Reporting List.

Chemical Test Rules

CAS# 10097-28-6 does not have a Chemical Test Rule.

Section 12b:

CAS# 10097-28-6 is not listed under TSCA Section 12b.

TSCA Significant New Use Rule:

CAS# 10097-28-6 does not have a SNUR.

CERCLA Section 103:

CAS# 10097-28-6 is not listed under CERCLA Section 103.

SARA:

CAS# 10097-28-6 is not listed under SARA.

State (Individual states in the USA)

CAS# 10097-28-6 is listed on the Pennsylvania and New Jersey Right to Know Components Lists.

California No Significant Risk Level:

CAS# 10097-28-6 not listed.

California Prop. 65:

CAS# 10097-28-6 not listed.

European/International Regulations:

European Labeling in Accordance with EC Directives

Hazard Symbols: Xn Harmful

Risk Phrases:

R20 Harmful by inhalation

Safety Phrases:

- S29 Do not empty into drains
- S36 Wear suitable protective clothing

WGK (Water Danger/Protection):

Not available.

Canada

WHMIS

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/NDSL

CAS# 10097-28-6 is listed on the NDSL List.

15.2 Chemical Safety Assessment: Not conducted / not required.

Date of Preparation: 23 January 2018.

Abbreviations and acronyms

IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
CMRG: Chemical Manufacturer's Recommended Guidelines
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
AIHA: American Industrial Hygiene Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bio-accumulative and Toxicological
vPvB: very Persistent and very Bio-accumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety Health
ATE: Acute Toxicity Estimates
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
STEL: Short Term Exposure Limit
CEIL: Ceiling

Section 16: Other Information

Disclaimer of Liability:

Caution! Do not use SPI Supplies products or materials in applications involving implantation within the body; direct or indirect contact with the blood pathway; contact with bone, tissue, tissue fluid, or blood; or prolonged contact with mucous membranes. Products offered by SPI Supplies are not designed or manufactured for use in

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