



Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment						
	<table><tr><td>Health Hazard</td><td>1</td></tr><tr><td>Fire Hazard</td><td>3</td></tr><tr><td>Reactivity</td><td>0</td></tr></table>	Health Hazard	1	Fire Hazard	3	Reactivity	0	 See Section 15.
Health Hazard	1							
Fire Hazard	3							
Reactivity	0							

Section 1. Chemical Product and Company Identification

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Common Name/ Trade Name	Silicon 100-200 Mesh, Powder	Catalog Number(s).	S1031
Manufacturer	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	CAS#	7440-21-3
Commercial Name(s)	Not available.	RTECS	CW0400000
Synonym	Not available.	TSCA	TSCA 8(b) inventory: Silicon
Chemical Name	Silicon	CI#	Not applicable.
Chemical Family	Element. (Inert material.)	IN CASE OF EMERGENCY CHEMTREC (24hr) 800-424-9300 CALL (310) 516-8000	
Chemical Formula	Si		
Supplier	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248		

Section 2. Composition and Information on Ingredients

		<i>Exposure Limits</i>			
Name	CAS #	TWA (mg/m ³)	STEL (mg/m ³)	CEIL (mg/m ³)	% by Weight
1) Silicon	7440-21-3	15			100

Toxicological Data on Ingredients	Silicon: ORAL (LD50): Acute: 3160 mg/kg [Rat].
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Section 3. Hazards Identification

Potential Acute Health Effects Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects

CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available.
Repeated or prolonged exposure is not known to aggravate medical condition.

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.
Skin Contact	Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.
Serious Skin Contact	Not available.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Serious Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.
Serious Ingestion	Not available.

Section 5. Fire and Explosion Data

Flammability of the Product	Flammable.
Auto-Ignition Temperature	780°C (1436°F)
Flash Points	Not available.
Flammable Limits	Not available.
Products of Combustion	Some metallic oxides.
Fire Hazards in Presence of Various Substances	Highly flammable in presence of open flames and sparks, of heat. Slightly flammable to flammable in presence of oxidizing materials, of moisture. Non-flammable in presence of shocks.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.
Fire Fighting Media and Instructions	Flammable solid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.
Special Remarks on Fire Hazards	Interaction of calcium and silicon is violently incandescent above 1050 deg. C after a short delay. Rubidium acetylide or Cesium acetylide react vigorously with silicon on heating. Amorphous or crystalline silicon both react exothermically when heated with alkali-metal carbonates attaining incandescence and evolving carbon monoxide. Amorphous powdered silicon is flammable when exposed to flame or by chemical reaction with oxidizers. Dust/air mixtures may ignite or explode When heated, silicon may react violently or explosively on contact with water or steam to produce hydrogen gas.
Special Remarks on Explosion Hazards	Material in powder form, capable of creating a dust explosion. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Mixture of silicon, aluminum, and lead oxide may explode when heated.

Section 6. Accidental Release Measures

Small Spill	Use appropriate tools to put the spilled solid in a convenient waste disposal container.
Large Spill	Flammable solid. Stop leak if without risk. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7. Handling and Storage

Precautions	Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents.
Storage	Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	<p>TWA: 5 (mg/m³) from OSHA (PEL) [United States] Inhalation Respirable. TWA: 15 (mg/m³) [United States] TWA: 10 (mg/m³) from NIOSH [United States] Inhalation Total. TWA: 5 (mg/m³) from NIOSH [United States] Inhalation Respirable. TWA: 10 STEL: 20 (mg/m³) [Canada] Inhalation Total. TWA: 3 (mg/m³) [Canada] Inhalation Respirable. TWA: 5 (mg/m³) [Canada] Inhalation Respirable. TWA: 10 STEL: 12 (mg/m³) [United Kingdom (UK)] Inhalation Total. TWA: 4 (mg/m³) [United Kingdom (UK)] Inhalation Respirable. STEL: 30 (ppm) [United Kingdom (UK)] Inhalation</p> <p>Consult local authorities for acceptable exposure limits.</p>

Section 9. Physical and Chemical Properties

Physical state and appearance	Solid. (Powdered solid. Amorphous solid powder)	Odor	Not available.
Molecular Weight	28.09 g/mole	Taste	Not available.
pH (1% soln/water)	Not applicable.	Color	Dark grey. Brown. (Dark.)
Boiling Point	2355°C (4271°F)		
Melting Point	1410°C (2570°F)		
Critical Temperature	4886°C (8826.8°F)		
Specific Gravity	2.33 (Water = 1)		
Vapor Pressure	Not applicable.		
Vapor Density	Not available.		
Volatility	Not available.		
Odor Threshold	Not available.		
Water/Oil Dist. Coeff.	Not available.		
Ionicity (in Water)	Not available.		

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Silicon 100-200 Mesh, Powder		Page Number: 4
Dispersion Properties	Not available.	
Solubility	Insoluble in cold water, hot water. Soluble in a mixture of nitric acid and hydrofluoric acids, and alkalis. Insoluble in nitric acid and hydrochloric acid.	

Section 10. Stability and Reactivity Data		
Stability	The product is stable.	
Instability Temperature	Not available.	
Conditions of Instability	Heat, ignition sources, dust generation, heat + water, incompatible materials	
Incompatibility with various substances	Reactive with oxidizing agents.	
Corrosivity	Non-corrosive in presence of glass.	
Special Remarks on Reactivity	When heated, silicon may react violently or explosively on contact with water or steam to produce hydrogen gas Incompatible (violent reactions) with chlorine, fluorine, oxidizers, calcium, cesium carbide, alkali carbonates, iodine pentafluoride, cobaltic fluoride, rubidium carbide, Magnesium trifluoride, nitrosyl fluoride, Silver fluoride, sodium-potassium alloy. Mixtures of cesium acetylide with silicon react vigorously on heating. Rubidium acetylide reacts vigorously with silicon on warming.	
Special Remarks on Corrosivity	Not available.	
Polymerization	Will not occur.	

Section 11. Toxicological Information		
Routes of Entry	Inhalation. Ingestion.	
Toxicity to Animals	Acute oral toxicity (LD50): 3160 mg/kg [Rat].	
Chronic Effects on Humans	Not available.	
Other Toxic Effects on Humans	Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.	
Special Remarks on Toxicity to Animals	Not available.	
Special Remarks on Chronic Effects on Humans	Not available.	
Special Remarks on other Toxic Effects on Humans	Nuisance dust. Acute Potential Health Effects: Skin: May cause skin irritation from frictional action. Eyes: May cause eye irritation from frictional action. Inhalation: May cause respiratory tract irritation. Ingestion: May affect respiration (respiratory stimulation)	

Section 12. Ecological Information		
Ecotoxicity	Not available.	
BOD5 and COD	Not available.	
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.	
Toxicity of the Products of Biodegradation	The product itself and its products of degradation are not toxic.	
Special Remarks on the Products of Biodegradation	Not available.	

Section 13. Disposal Considerations**Waste Disposal**

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information**DOT Classification**

CLASS 4.1: Flammable solid.

Identification

UNNA: 1346 : Silicon powder, amorphous PG: III

Special Provisions for Transport

Not available.

DOT (Pictograms)**Section 15. Other Regulatory Information and Pictograms****Federal and State Regulations**

Pennsylvania RTK: Silicon 100-200 Mesh, Powder
Minnesota: Silicon 100-200 Mesh, Powder
Massachusetts RTK: Silicon 100-200 Mesh, Powder
New Jersey: Silicon 100-200 Mesh, Powder
TSCA 8(b) inventory: Silicon 100-200 Mesh, Powder

California Proposition 65 Warnings

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.
California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

Other Regulations

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 231-130-8).
Canada: Listed on Canadian Domestic Substance List (DSL).
China: Listed on National Inventory.
Japan: Not listed on National Inventory (ENCS).
Korea: Listed on National Inventory (KECI).
Philippines: Listed on National Inventory (PICCS).
Australia: Listed on AICS.

Other Classifications

WHMIS (Canada) CLASS B-4: Flammable solid.

DSCL (EEC)

R11- Highly flammable.

S2- Keep out of the reach of children.

HMIS (U.S.A.)

Health Hazard	1
Fire Hazard	3
Reactivity	0
Personal Protection	E

National Fire Protection Association (U.S.A.)

Health



Flammability

Reactivity

Specific hazard

WHMIS (Canada) (Pictograms)**DSCL (Europe) (Pictograms)**

TDG (Canada)
(Pictograms)**ADR (Europe)**
(Pictograms)**Protective Equipment**

Gloves.



Lab coat.



Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.



Safety glasses.

Section 16. Other Information**MSDS Code**

S3290

References

Not available.

Other Special Considerations

Major Uses: In the manufacturing transistors, silicon diodes and similar semiconductors. Semiconductor in solid-state devices (transistors, photovoltaic cells, computer circuitry, rectifiers, etc.); For making organosilicon compounds, silicon carbide; For making alloys such as ferrosilicon, silicon bronze, silicon copper; Alloying agent in steels; In cermets and special refractories; In making silanes, halogenated silanes, and silicones; spring steels; deoxidizer in steel manufacture; As a reducing agent like aluminum in high temperature reactions.

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CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.