

MATERIAL SAFETY DATA SHEET

SECTION 1 – PRODUCT IDENTIFICATION

Product Name: **Silicon Metal Powder**
Product Item: 109197
Product Code: HA 9197

Supplier: **HAI Advanced Material Specialists, Inc.**
1688 Sierra Madre Circle
Placentia, CA 92870
(714)-414-0575

Emergency Contact: 888-255-3924
Chemical Family: Metal
Formula: Si
Molecular Weight: 28.09

SECTION 2 – HAZARDOUS INGREDIENTS

IMPORTANT! This section covers the material from which these products are manufactured. Dust and gases produced when spraying with normal use of these products are covered in Section 5.

Material or Component	CAS #	Concentration	OSHA PEL	ACGIH TLV	Other Limits *
Silicon	7440-21-3	0.0-100.0%	15 mg/m ³	10 mg/m ³	5 mg/m ³ resp

US EPA SARA TITLE III

Material or Component	CAS Number	Sec. 302 (EHS)	Sec. 304 RQ	Sec. 313 (TRI)
Silicon	7440-21-3	No	No	No

SECTION 3 – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: [] Gas [] Liquid [X] Solid
Melting Point: 1410°C
Boiling Point: 2500°C
Specific gravity (water=1): 2.33 g/cm³
Vapor pressure (mmHg): 1 mm at 1724°C
Vapor Density (Air=1): No data
Evaporation rate (Butylacetate=1): No data
Solubility in water: Insoluble
Percent volatile (vol.): No data
Corrosion Rate: No data
Appearance and odor: Dark brown, metallic powder, no odor
Other: None

SECTION 4 – FIRE AND EXPLOSION HAZARD DATA

<u>Flash point:</u>	N/A	Method Used: Unknown
<u>Auto ignition temp.:</u>	N/A	
<u>Flammable limits:</u>	N/A	
<u>Explosive Limits:</u>	LEL: N/A	UEL: N/A
<u>Extinguishing Media:</u>	Not applicable. Use suitable extinguishing medias for surrounding materials and type of fire.	
<u>Special fire fighting procedures:</u>	Firefighters should wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.	
<u>Unusual fire and explosion hazards:</u>	Elemental silicon is flammable when exposed to flame or by chemical reaction with oxidizing agents. May have a violent reaction with alkali carbonates; oxidants; (Al+PbO); Ca; Cs ₂ C ₂ ; CoF ₂ ; F ₂ ; IF ₅ ; MnF ₃ ; Rb ₂ C ₂ ; FNO; AgF; and NaK alloy. When heated it will react with water or steam to produce hydrogen gas.	

SECTION 5 – REACTIVITY DATA

<u>Stability:</u>	Unstable []	Stable [X]
<u>Conditions to avoid - Instability:</u>	None	
<u>Incompatibility – Materials to avoid:</u>	Oxidizing agents; alkali carbonates; (Al+PbO); Ca; Cs ₂ C ₂ ; Cl ₂ ; CoF ₂ ; F ₂ ; IF ₅ ; MnF ₃ ; Rb ₂ C ₂ ; FNO; AgF; NaK alloy; water and steam.	
<u>Hazardous decomposition products:</u>	Hydrogen gas	
<u>Hazardous polymerization:</u>	Will occur []	Will not occur [X]
<u>Conditions to avoid – Hazardous polymerization:</u>	None	
<u>Product corrosive:</u>	Yes []	No [X]

SECTION 6 – HEALTH HAZARD DATA

Health Hazards (Acute and Chronic)

To the best of our knowledge the chemical, physical and toxicological properties of aluminum have not been thoroughly investigated and recorded.

<u>Inhalation:</u>	Acute: May cause abbrasive irritation. Chronic: No chronic health effects recorded.
<u>Ingestion:</u>	Acute: No acute health effects recorded. Chronic: No chronic health effects recorded.
<u>Skin:</u>	Acute: May cause abbrasive irritation. Chronic: .No chronic health effects recorded.
<u>Eye:</u>	Acute: Dust and powder may cause abbrasive irritation. Chronic: No chronic health effects recorded.
<u>Target Organs:</u>	No target organs recorded.

Carcinogenicity: NTP? [No] ARC Monographs? [No] OSHA Regulated? [No]

Carcinogenicity / other Information:

orl-rat LD50: 3160 mg/kg
Standard Draize Test Rabbit: 3 mg mild reaction

Recommended Exposure Limits

See "Section II"

LD 50 / LC 50

See "Carcinogenicity/Other Information"

Signs and Symptoms of Exposure

Inhalation: May cause a red, dry, throat and coughing.

Ingestion: No acute or chronic health effects recorded.

Skin: May cause redness and scratches.

Eye: May cause redness, itching and watering.

Medical Conditions Generally Aggravated by Exposure

Pre-existing respiratory disorders.

Emergency and First Aid Procedures

Inhalation: Remove victim to fresh air; keep warm and quiet; give oxygen if breathing is difficult and seek medical attention if symptoms persist.

Ingestion: Not Applicable.

Skin: Wash area with mild soap and water.

Eye: Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention if irritation persists.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE/DISPOSAL

Steps to be Taken in Case Material is Released or Spilled

Wear appropriate respiratory and protective equipment specified in section 8-control measures. Isolate spill area, provide ventilation and extinguish sources of ignition. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

Waste Disposal Method

Dispose of in accordance with local, state and federal regulations.

Hazard Label Information

Store in cool, dry place.

Store in tightly sealed container.

Wash thoroughly after handling.

Precautions to be Taken in Handling

None

Precautions to be Taken in Storing

None

Other Precautions

None

SECTION 8 - CONTROL MEASURES

Protective Equipment Summary - Hazard Label Information:

NIOSH approved respirator

Impervious gloves

Safety glasses

Protective clothing to prevent contact with skin

Respiratory Equipment (Specify Type)

NIOSH - approved respirator

Eye Protection

Safety glasses

Protective Gloves

Rubber gloves

Other Protective Clothing

Protective gear suitable to prevent contamination

Ventilation

Local exhaust, minimum face velocity of 60 f.p.m, to maintain concentration at or below PEL, TLV. Good general ventilation is recommended.

Other: None

Work/Hygienic/Maintenance Practices

Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels.

Use good housekeeping and sanitation practices.

Do not use tobacco or food in work area.

Wash thoroughly before eating and smoking.

Do not blow dust off clothing or skin with compressed air.

SECTION 9 – OTHER

Land Transport (US DOT)

UN/NA Number: 1346

HAI Advanced Material Specialists, Inc. requests the users of this product to study this Material Safety Data Sheet (MSDS) and become aware of product hazards and safety information. To promote safe use of this product, a user should (1) notify its employees, agents, and contractors of the information on this MSDS and any product hazard and safety information, (2) furnish this same information to each of its customers for the product, and (3) request such customers to notify their employees and customers for the product of the product hazards and safety information.

Company Policy or Disclaimer

The above information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change, and the conditions of handling and use or misuse are beyond our control, HAI MAKES NO WARRANTY, EITHER EXPRESSED NOR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN, AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. Users should satisfy themselves that they have all current data relevant to their particular use.

Abbreviations used: N/A=Not Applicable NE: Not Established