

MATERIAL SAFETY DATA SHEET

SILICON METAL POWDER

MSDS CAS: - 7440-21-3

Section 1: Chemical Product and Company Identification

Section 1: Chemical Product

Product Name: SILICON METAL POWDER

CAS#: - 7440-21-3

C.I. No.: Not available.

Synonym: Not available.

Chemical Name: Silicon

Chemical Formula: Si

Brand: OXFORD

Details Of The Supplier Of The Safety Data Sheet:

Company identification: **OXFORD LAB FINE CHEM LLP**
Unit. No. 12, 1st Floor, Neminath Industrial Estate No. 6,
Navghar, Vasai (East). Palghar - 401 210.
Mumbai, Maharashtra, INDIA.
Tel: 91-250-2390989
Tel/Fax: 91-250-2390032

Section 2: Composition and Information on Ingredients

Composition:

| Name | CAS # | % by Weight |
|----------------------|-----------|-------------|
| SILICON METAL POWDER | 7440-21-3 | 98.5% |

Section 3: Hazards Identification

Potential Acute Health Effects:

Hazardous in case of inhalation. Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion.

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.

Section 5: Fire and Explosion Data (Continued)

Products of Combustion: Some metallic oxides.

Fire Hazards in Presence of Various Substances:

Flammable in presence of open flames and sparks, of heat. 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. Slightly explosive in presence of heat.

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. Amorphous or crystalline silicon both react exothermically when heated with alkali-metal carbonates attaining incandescence and evolving carbon monoxide.

Special Remarks on Explosion Hazards:

Material in powder form, capable of creating a dust explosion. Mixture of silicon, aluminum, and lead oxide explodes 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. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. 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:

TWA: 5 (mg/m³) from OSHA (PEL) [United States] Inhalation Respirable. TWA: 10 (mg/m³) from ACGIH (TLV) [United States] Inhalation Total. TWA: 15 (mg/m³) from OSHA (PEL) [United States] Inhalation Total. Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance

: Solid. (Crystals solid.)

Odor

: Not available.

Taste

: Not available.

Molecular Weight

: 28.09 g/mole

Color

: Blackish grey powder.

pH (1% soln/water)

: Not applicable.

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.

Dispersion Properties

: Not available.

Solubility

: Insoluble in cold water, hot water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Heat, ignition sources, incompatible materials

Incompatibility with various substances:

Reactive with oxidizing agents. Slightly reactive to reactive with moisture.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:

May react violently or explosively on contact with water. Will react with water or steam to product hydrogen
Incompatible (violent reactions) with chlorine, fluorine, oxidizers, calcium, carbide, alkali carbonates, iodine
pentafluoride, cobaltic fluoride, rubidium carbide, MnF₃, nitrosyl fluoride, AgF. 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:

Hazardous in case of inhalation. Slightly hazardous in case of skin contact (irritant), of ingestion.

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 irritaiton 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:

Section 12: Ecological Information (Continued)

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

Land transport (ADR-RID)

| | |
|-----------------------|---|
| Proper shipping name | : SILICON POWDER, AMORPHOUS |
| UN N° | : 1346 |
| H.I. nr | : 40 |
| ADR – Class | : 4.1, III |
| Labelling - Transport | : 4.1: Flammable solids, self-reactive substances and Desensitized explosives. |

Sea transport (IMDG) [English only]

| | |
|------------------------------|---|
| Proper shipping name | : SILICON POWDER, AMORPHOUS |
| UN N° | : 1346 |
| IMO-IMDG - Class or division | : 4.1: Flammable solids, self-reactive substances and Desensitized explosives. |
| IMO-IMDG - Packing group | : III |

Air transport (ICAO-IATA) [English only]

| | |
|--------------------------|---|
| Proper shipping name | : SILICON POWDER, AMORPHOUS |
| UN N° | : 1346 |
| IATA - Class or division | : 4.1: Flammable solids, self-reactive substances and Desensitized explosives. |
| IATA - Packing group | : III |

Section 15: Other Regulatory Information

Federal and State Regulations:

Illinois toxic substances disclosure to employee act: Silicon Rhode Island RTK hazardous substances: Silicon
Pennsylvania RTK: Silicon Minnesota: Silicon Massachusetts RTK: Silicon New Jersey: Silicon TSCA 8(b)
inventory: Silicon

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.

Other Classifications:

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

DSCL (EEC):

R11- Highly flammable. S2- Keep out of the reach of children.

Health Hazard: 2

Fire Hazard: 2

Reactivity: 0

Personal Protection: E

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

Health: 2

Flammability: 2

Reactivity: 1

Specific hazard:

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 - Additional Information

References: Not available.

Other Special Considerations: Not available.

Disclaimer:

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The information contained herein in good faith but makes no representations as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product.

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