Basekim
Chemical Production Co.Ltd.

Material Safety Data Sheet (MSDS)

Silicon Metal (High-Purity Grade, ≥99%)

Section 1: Identification of the Substance and Company

Product Name: Silicon Metal
Synonyms: Crystalline Silicon, Metallurgical-Grade Silicon
Recommended Use: Alloying agent in aluminum and steel industries, semiconductor and chemical feedstock.

Supplier/Manufacturer:
Basekim Kimyasal Ürünler LTD
Turan Gunes Blv. Ilkbahar Mah. Sinpas Altinoran Tower 2, Floor 1, Unit 146
Ankara, Turkey

Transportation Emergency Response: Logistics: 88552948
Health Emergency Contact: +90 312 514 7055 / +90 312 514 7081
MSDS Requests: +90 312 514 7055 / +90 312 514 7081

Section 2: Composition/Information on Ingredients

- **Substance:** Silicon (Si)
- **CAS Number:** 7440-21-3
- **Purity:** ≥ 99%
- **Typical Impurities:**
  - Iron (Fe): ≤ 0.4%
  - Calcium (Ca): ≤ 0.1%
  - Aluminum (Al): ≤ 0.4%

Section 3: Hazard Identification

GHS Classification:

- Specific Target Organ Toxicity (Repeated Exposure), Category 2 (lungs)

Hazard Statements:

- H335: May cause respiratory irritation.
- H373: Prolonged or repeated inhalation of dust may cause lung effects.

Signal Word: *Warning*

Precautionary Statements:

- P261: Avoid breathing dust.
- P280: Wear protective gloves, protective clothing, and eye protection.
- P285: In case of inadequate ventilation, wear respiratory protection.
- P501: Dispose of contents/container in accordance with regulations.

Section 4: First Aid Measures

- **Inhalation:** Remove to fresh air. Obtain medical attention if symptoms persist.
- **Skin Contact:** Wash thoroughly with soap and water.
- **Eye Contact:** Rinse immediately with water for at least 15 minutes. Seek medical advice if irritation occurs.
- **Ingestion:** Rinse mouth. If unwell, seek medical advice.

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Section 5: Firefighting Measures

- **Suitable Extinguishing Media:** Dry chemical, dry sand, CO_2.
- **Unsuitable Media:** Do not use water on burning metal.
- **Specific Hazards:** Finely divided silicon dust may ignite spontaneously or form explosive mixtures with air.
- **Protective Equipment:** Firefighters should wear self-contained breathing apparatus (SCBA) and full protective clothing.

Section 6: Accidental Release Measures

- **Personal Precautions:** Prevent dust formation. Wear appropriate PPE.
- **Environmental Precautions:** Do not allow material to enter drains or watercourses.
- **Cleanup:** Collect mechanically into sealed containers. Use vacuum systems equipped with HEPA filters. Avoid dry sweeping.

Section 7: Handling and Storage

- **Handling:** Avoid dust generation. Use with adequate ventilation. Prevent contact with eyes, skin, and clothing.
- **Storage:** Store in a dry, cool, well-ventilated area away from strong oxidizers and moisture. Keep containers tightly closed.

Section 8: Exposure Controls/Personal Protection

Occupational Exposure Limits:

- OSHA PEL (respirable dust): 5 mg/m^3

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- ACGIH TLV (respirable fraction): 10 mg/m³

Engineering Controls:

- Provide local exhaust ventilation. Install dust collection systems in processing areas.

Personal Protective Equipment (PPE):

- **Respiratory Protection:** NIOSH-approved respirator where dust levels exceed limits.
- **Eye/Face Protection:** Safety goggles or face shield.
- **Skin Protection:** Protective gloves and industrial clothing.
- **Hygiene Measures:** Wash thoroughly after handling. Do not eat, drink, or smoke in work areas.

Section 9: Physical and Chemical Properties

- **Appearance:** Grey to dark-grey, crystalline solid with metallic luster
- **Molecular Weight:** 28.09 g/mol
- **Melting Point:** 1410 °C
- **Boiling Point:** 2355 °C
- **Density:** 2.33 g/cm³
- **Solubility:** Insoluble in water
- **Odor:** Odorless

Section 10: Stability and Reactivity

- **Stability:** Stable under normal handling and storage conditions.
- **Reactivity:** Reacts with strong oxidizing agents and halogens.
- **Hazardous Decomposition Products:** Silicon oxides generated during combustion.

Section 11: Toxicological Information

- **Acute Toxicity:** Low toxicity.
- **Skin/Eye Contact:** Dust may cause mechanical irritation.
- **Inhalation:** Prolonged exposure to respirable crystalline silica (trace impurity) may cause silicosis, a progressive lung disease.
- **Carcinogenicity:** Silicon itself is not classified as carcinogenic; crystalline silica (impurity) is classified as carcinogenic to humans (IARC Group 1).

Section 12: Ecological Information

- **Ecotoxicity:** Not expected to pose significant hazard to the environment under normal handling.
- **Persistence/Degradability:** Stable, insoluble, not biodegradable.
- **Bioaccumulation Potential:** Not expected to bioaccumulate.
- **Environmental Precautions:** Avoid uncontrolled release of dust.

Section 13: Disposal Considerations

- Dispose of in accordance with applicable local, regional, and national regulations.
- Recycling of silicon waste is encouraged.

Section 14: Transport Information

- **UN Number:** Not classified as dangerous goods.
- **Proper Shipping Name:** Silicon Metal

- **Hazard Class:** Non-hazardous for transport (ADR/RID/IMDG/IATA).
- **Packing Group:** Not applicable.

Section 15: Regulatory Information

- Subject to EU REACH and OSHA occupational exposure limits.
- Dust exposure must be monitored and controlled in accordance with workplace safety regulations.

Section 16: Other Information

Disclaimer:
This MSDS was prepared based on the most recent available information and international safety standards. The data herein is believed to be accurate but is provided without warranty.

Users are responsible for ensuring safe handling, proper use, storage, and disposal of the material in compliance with applicable laws and regulations.