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Material Safety Data Sheet

Identity: Silicon

Formula: Si

SECTION I - GENERAL INFORMATION

Manufacturer: Advanced Engineering Materials Limited (AEM)

The information below is believed to be accurate and represents the best information available to AEM. However, AEM makes no warranty, expressed or implied with respect to such information and assumes no liability resulting from its use.

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Molecular weight: 28.086

CAS #	OSHA PEL	ACGIH TLV	%
7440-21-3	10mg/m ³	15mg/m ³	100%

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: 2355.0°C

Density: 2.33 gm/cc at 25.0°C

Melting Point: 1414.0°C

Vapor Pressure (vs. air or mmHg): 1mmHg at 1724°C

Evaporation Rate: N/A

Flash Point: N/A

Solubility in water: Insoluble

Appearance and odor: Steel gray pieces or dark brown powder, no odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Method Used: Unknown *Explosive Limits:* LEL: N/A UEL: N/A

Extinguishing Media: Use dry chemical, sand, foam or carbon dioxide

Special Fire Fighting Procedures:

Firefighters must 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.

Unusual Fire and Explosion Hazards:

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; CsC₂; CoF₂; F₂; IF₅; MnF₃; Rb₂C₂; FNO; AgF; and NaK alloy.

When heated it will react with water or steam to produce hydrogen gas.



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SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid (stability): Avoid generation dusts.

Incompatibility: Oxidizing agents; alkali carbonates; (Al+PbO); Ca; Cs₂C₂; Cl₂; CoF₂; F₂; IF₅; MnF₃; Rb₂C₂; FNO; AgF; NaK alloy; water and steam.

Hazardous Decomposition or Byproducts: Hydrogen gas

Hazardous Polymerization: Will not occur

Conditions to avoid (hazardous polymerization): None

SECTION VI - HEALTH HAZARD DATA

Route of Entry: Inhalation? No Skin? No Eyes? No Ingestion? No Other? No

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

Signs and Symptoms of Overexposure:

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 red, itching and watering.

Health Hazards (Acute and Chronic):

Inhalation:

Acute: May cause abrasive irritation.

Chronic: No chronic health effects recorded.

Ingestion:

Acute: No acute health effects recorded.

Chronic: No chronic health effects recorded.

Skin:

Acute: May cause abrasive irritation.

Chronic: No chronic health effects recorded.

Eye:

Acute: Dust and powder may cause abrasive irritation.

Chronic: No chronic health effects recorded.

Target Organs: No target organs recorded

Carcinogenicity: NTP? N/A

IARC Monographs? N/A

OSHA Regulated? N/A

Medical Conditions Aggravated by Exposure: Pre-existing respiratory disorder



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Emergency and First Aid Procedures:

- Inhalation:* Remove victim to fresh air, keep warm and quiet, and give oxygen if breathing is difficult; seek medical attention
- Ingestion:* Give 1-2 glasses of milk or water and seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person
- Skin:* Remove contaminated clothing, brush material off skin, wash affected area with mild soap and water, and seek medical attention if symptoms persist
- Eye:* Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes and seek medical attention

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in case material is released or spilled:

Wear appropriate respiratory and protective equipment specified in section VIII. 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 state, local, and federal regulations.

Hazard Label Information:

AVOID MOISTURE AND WATER. Store in cool, dry area and in tightly sealed container. Wash thoroughly after handling.

SECTION VIII - CONTROL MEASURES

Protective Equipment Summary (Hazard Label Information):

NIOSH approved respirator, impervious gloves, dust proof safety glasses, clothes to prevent contact.

Ventilation:

Local Exhaust: To maintain concentration at low exposure levels. Mechanical (General): Recommended.

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

Please be advised that N/A can either mean Not Applicable or No Data Has Been Established



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