



MATERIAL SAFETY DATA SHEET

PRODUCT NAME: Silicon

CHEMICAL NAME: Silicon

CHEMICAL FORMULA: Si

SECTION 1 – PHYSICAL/CHEMICAL CHARACTERISTICS

PHYSICAL STATE AND APPEARANCE: Solid. (Crystals solid.)

ODOR: Not available.

TASTE: Not available.

MOLECULAR WEIGHT: 28.09 g/mole

COLOR: Dark grey. Brown.

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 2 – FIRE AND EXPLOSION HAZARD 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: 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 3 – 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 4 – HEALTH HAZARD DATA

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 5 – FIRST AID PROCEDURES

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 6 – SPECIAL HANDLING INFORMATION

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 7 – 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 irritation from frictional action. Inhalation: May cause respiratory tract irritation.

Ingestion: May affect respiration (respiratory stimulation)