

Material Safety Data Sheet

Identity: Silicon Dioxide

Formula: SiO₂

SECTION I - GENERAL INFORMATION

Manufacturer: [Stanford Advanced Materials](#) (SAM)

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

SECTION II - PRODUCT INFORMATION/HAZARDOUS INGREDIENTS

CAS #	%	OSHA/PEL	ACGIH TLV
7631-86-9	0.0-100%	30mg/m ³	0.1 mg/m ³

SECTION III - PHYSICAL/ CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: 2230.0 °C

Melting Point: 1610.0-1710.0 °C

Evaporation Rate: N/A

Solubility in water: Insoluble

Specific Gravity (H₂O=1): 2.65 gm/cc

Vapor Pressure (vs. air or mmHg): N/A

Vapor Density (vs. air=1): N/A

Flash Point: N/A

Appearance and odor: White to clear powder and pieces, no odor

SECTION IV - FIRE AND EXPLOSION DATA

Method Used: Non-flammable *Explosive Limits:* LEL: N/A UEL: N/A*Extinguishing Media:* Use suitable extinguishing media for surrounding materials and type of fire*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: Silicon dioxide is completely oxidized and will not burn

SECTION V -- REACTIVITY DATA

Stability: Stable*Conditions to Avoid (stability):* None

Incompatibility: Hydrofluoric acid

Hazardous Decomposition or Byproducts: On contact with hydrofluoric acids, may emit silicon tetrafluoride

Hazardous Polymerization: Will not occur

Conditions to avoid (hazardous polymerization): None

SECTION VI - HEALTH HAZARD

Routes of entry: Inhalation? Yes Skin? No Eyes? No Ingestion? No Other? No

Signs and Symptoms of Exposure:

Inhalation: May cause coughing

Ingestion: No health effects recorded

Skin: May cause redness

Eye: May cause redness, itching and watering

Health Hazards (Acute and Chronic):

Questionable carcinogen with experimental tumorigenic data. Poison by intraperitoneal, intravenous and intratracheal routes (*Sax, Dangerous Properties of Industrial Materials*, eighth edition) Silica is the chief cause of pulmonary dust disease. The prolonged inhalations of dusts containing free silica may result in the development of a disabling, pulmonary fibrosis known as silicosis. The action of crystalline silica on the lungs results in the production of a diffuse, nodular fibrosis in which the parenchyma and the lymphatic systems are involved. The fibrosis is, to a certain extent, progressive and may continue to increase for several years after exposure is terminated. The first and most common symptom is shortness of breath. Further progress of the disease results in marked fatigue, extreme dyspnea and cyanosis, loss of appetite, pleuritic pain and total incapacity to work. If tuberculosis does not supervene, the condition may eventually cause death either from cardiac failure or from destruction of lung tissue, with resultant anoxemia. (*Sax, Dangerous Properties of Industrial Materials*, eighth edition)

Inhalation: May cause moderate respiratory irritation

Ingestion: No health effects recorded

Skin: May cause abrasive irritation

Eye: May cause abrasive irritation

Target Organs: Lungs

Carcinogenicity: NTP? No IARC Monographs? No OSHA? Yes

Medical Conditions Aggravated by Exposure: Pre-existing respiratory disorders

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 induce vomiting, 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: 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 rubber gloves, safety glasses, clothes to prevent skin contact.

Ventilation:

Local Exhaust: Local exhaust ventilation may be necessary to control any air contaminants to with their PELs or TLVs during the use of this product

Mechanical (General): Always 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 and 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