

Material Safety Data Sheet

Identity: Iron silicide

Formula: FeSi₂

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 - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Molecular weight: 112.01

CAS #	OSHA PEL	ACGIH TLV	%
12022-99-0	N/A	N/A	0-100

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: N/A

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

Melting Point: N/A

Density: N/A

Evaporation Rate: N/A

Flash Point: N/A

Solubility in water: Insoluble

Specific Gravity: 5.03

Appearance and odor: Grey powder and pieces, no odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

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

UEL: N/A

Extinguishing Media:

Use suitable extinguishing agent for surrounding material 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: No data

SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid (stability): N/A

Incompatibility: N/A

Hazardous Decomposition or Byproducts: N/A

Hazardous Polymerization: will not occur

Conditions to avoid (hazardous polymerization): N/A

SECTION VI - HEALTH HAZARD DATA

Signs and Symptoms of Overexposure:

Inhalation: May cause a red, dry, throat and coughing. Acute iron poisoning may cause biphasic shock, rapid increase in respiration and pulse rate, congestion of blood vessels which may lead to hypotension, pallor and drowsiness. Chronic iron poisoning may cause hemorrhagic necrosis of the gastrointestinal tract, hepatotoxicity, metabolic acidosis, prolonged blood clotting time, elevation of plasm levels of serotonin and histamine. Symptoms of deposition or fibrosis of the pancreas, diabetes, mellitus, liver and cirrhosis may occur

Ingestion: No direct health effects recorded

Skin: May cause redness and itching

Eye: May cause redness, itching, swelling, and watering

Health Hazards (Acute and Chronic):

Iron compounds have varying toxicity. Some iron compounds are suspected carcinogens. In general, ferrous compounds are more toxic than ferric compounds. Acute exposure to excessive levels of ferrous compounds can cause liver and kidney damage, altered respiratory rates and convulsions. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Inhalation:

Acute: Inhalation of dust or powder may cause irritation to the respiratory system and possible acute poisoning.

Large amounts of iron may cause pneumoconiosis

Chronic: Inhalation of finely divided powder may cause pulmonary fibrosis

Ingestion:

Acute: No acute health effects recorded

Chronic: May cause damage to the liver

Skin:

Acute: May cause irritation

Chronic: None recorded

Eye:

Acute: May cause irritation, itchiness, redness, and watering

Chronic: None recorded

Target Organs: Liver and Kidneys

Carcinogenicity: NTP? No

IARC Monographs? No

OSHA Regulated? No

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. USE NON-SPARKING TOOLS

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 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