Super Conductor Materials, Inc.
391 Spook Rock Industrial Park, Suffern, NY 10901 · 845.368.0240 · Fax 845.368.0250 · www.scm-inc.com

Chemtrec: (800) 424-9300
Poison Center: (800) 562-8236
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SAFETY DATA SHEET

Identity: Iron Formula: Fe

SECTION I - GENERAL INFORMATION

Manufacturer: Super Conductor Materials, Inc.

The information below is believed to be accurate and represents the best information available to Super Conductor Materials, Inc. However, SCM 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: 55.845

CAS #	OSHA PEL	ACGIH TLV	%
7439-89-6	10mg/m^3	5.0mg/m^3	0.0-100.0%

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: 2861.00°C
Melting Point: 1538.00°C
Evaporation Rate: N/A
Solubility in water: Insoluble

Density: 7.87 g/cm^3
Vapor Pressure (vs. air or mmHg): 1mmHg at 1787.0°C
Vapor Density (vs. air=1): N/A
Flash Point: N/A

Appearance and odor: Silver-white pieces, no odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Method Used: Unknown *Explosive limits*: LEL: N/A UEL: N/A
Extinguishing Media: Dry chemical, dry sand, graphite, dolomite, or sodium chlorate DO NOT Use water

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:

IRON:
-Iron becomes more reactive as it is more finely divided.
-Oxidizes in moist air to form rust.
-May have an explosive or violent reaction with ammonium nitrate + heat; ammonium peroxodisulfate; chloric acid; chlorine trifluoride; chloroformamidinium nitrate.

-Sodium acetylide ignites on contact with chlorine; dinitrogen tetraoxide; liquid fluorine; nityl fluoride + heat; peroxy formic and potassium dichromate; sodium peroxide (at 240C.)
-Reduced iron reacts with water to produce explosive hydrogen gas. (Sax, Dangerous Properties of Industrial Materials, eighth edition).

SECTION V - REACTIVITY DATA

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

Incompatibility (Materials to avoid):
IRON: Ammonium nitrate, heat, ammonium peroxodisulfate, chloric acid, chlorine trifluoride, chloroformamidinium nitrate, sodium acetylide, chlorine, dinitrogen tetraoxide, liquid fluorine, nitryl fluoride, peroxyformic dichromate, potassium dichromate, sodium peroxide, acetaldehyde, halogens, polystyrene

Hazardous Decomposition or Byproducts: Hydrogen gas and iron oxide fumes
Hazardous Polymerization: will not occur
Conditions to avoid (hazardous polymerization): None recorded

SECTION VI - HEALTH HAZARD DATA

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

Iron is an essential nutrient. Iron compounds as a class are not associated with any particular industrial risk, although inhalation of iron oxide fumes or dust may cause benign pneumoconiosis (siderosis). Dose levels of iron among iron workers developing siderosis have been reported to exceed 10mg iron/m^3. No component of this product, as levels greater than 0.1%, is identified as a carcinogen by the US national Toxicology Program, the US Occupational Safety and Health Act or the International Agency for Research on Cancer.

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).

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 plasma levels of serotonin and histamine. Symptoms of pathological deposition or fibrosis of the pancreases, diabetes, mellitus and liver cirrhosis.

Ingestion: No acute or chronic health effects recorded.
Skin: May cause redness and itching.
Eye: May cause redness, itching and watering.

Health Hazards (Acute and Chronic):
Inhalation:
Acute: Inhalation of dust or powder may cause irritation to the respiratory system and possibly acute iron poisoning. Large amounts of iron may cause iron pneumoconiosis.
Chronic: Inhalation of finely divided powder may cause pulmonary fibrosis. May cause chronic iron poisoning and pathological deposition of iron in the body tissue.

Ingestion:
Acute: No acute health effects recorded.

Chronic: May cause damage to the liver.

Skin:
Acute: May cause irritation.
Chronic: No chronic health effects recorded.

Eyes:
Acute: May cause irritation.
Chronic: No chronic health effects recorded.

Target Organs: May affect the liver and kidney
Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No
Medical Conditions Aggravated by Exposure: Pre-existing respiratory disorder

Emergency and First Aid Procedures:

Inhalation:	Remove victim to fresh air, give oxygen if breathing is difficult; and seek medical attention
Ingestion:	Give 1-2 glasses of milk or water, 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.
Do not dump in sewers, in the ground or in any body of water

Hazard Label Information:

Store in cool (-18°C to 38°C), 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, 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