



Super Conductor Materials, Inc.

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Chemtrec: (800) 424-9300
Poison Center: (800) 562-8236
Revision Date: January 8th, 2019

SAFETY DATA SHEET

Identity: Hafnium

Formula: Hf

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: 178.49

CAS #	OSHA PEL	ACGIH TLV	%
7440-58-6	0.5 mg/m ³	.05 mg/m ³	0.0-100.0%

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States:

Boiling Point: 4603.00°C	Vapor Pressure (vs. air or mmHg):0 at 20.0°C
Melting Point: 2227.00 C	Specific Gravity (Water=1) 13.31 at 20.0°C
Evaporation Rate:	Flash Point: N/A
Solubility in water: Insoluble	

Appearance and odor: Grey pieces, no odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Method Used: Unknown *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: Above 200 °C, hafnium metal reacts exothermically with halogens and halocarbons.



SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid (stability): None

Incompatibility: Hydrofluoric acid, hydrofluoric- nitric acid mixture, fluoride, chloride, bromide, iodine, carbon tetrachloride, carbon tetra fluoride and freons

Hazardous Decomposition or Byproducts: Hydrogen, fumes of nitrogen oxides and corrosive hafnium halide vapors.

Hazardous Polymerization: Will not occur

Conditions to avoid (hazardous polymerization): None

SECTION VI - HEALTH HAZARD DATA

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

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

Hafnium is a poison by unspecified route. It is poorly soluble in water and thus is not absorbed efficiently by ingestion. Many hafnium compounds are poisons. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Signs and Symptoms of Overexposure:

Inhalation: May cause a red, dry throat and coughing.

Ingestion: May cause some discomfort.

Skin: May cause redness and itching.

Eyes: May cause redness, itching and watering.

Health Hazards (Acute and Chronic):

Inhalation:

Acute: Toxic by inhalation. May cause irritation to the nose, throat and mucous membranes.

Chronic: No chronic health effects recorded.

Ingestion:

Acute: Considered to be non-toxic due to poor absorption in the alimentary tract of mammals.

Chronic: May cause damage to the liver.

Skin:

Acute: May cause irritation.

Chronic: No chronic health effects recorded.

Eye:

Acute: May cause irritation.

Chronic: No chronic health effects recorded.

Target Organs: May affect the liver

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

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 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 gloves, safety glasses, clothes to prevent contact.

Ventilation:

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

Mechanical (General): Good general ventilation should be sufficient to control airborne levels.

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