

SAFETY DATA SHEET

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ProChem inc.

SECTION 1 PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: **Hafnium, Sponge**

PRODUCT NUMBER: 1951

CAS NUMBER: 7440-58-6

MANUFACTURER:

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SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION OF SUBSTANCE OR MIXTURE

Flammable solids. Category – 1, 2

Pictogram



Signal Word **Danger**

Hazard Statements

H228	Flammable solid.

Precautionary Phrases

P210	Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P240	Ground/bond/container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P370+P378	In case of fire: Use dry sand, dry chemical, or alcohol-resistant foam for extinction.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Formula: Hf

Molecular Weight: 178.49

CHEMICAL NAME	CAS#	%
Hafnium	7440-58-6	99.7

SECTION 4 FIRST AID MEASURES

EYE EXPOSURE: Flush eyes immediately with plenty of water for at least 15 minutes. Assure adequate flushing under the eyelids. Seek medical assistance.
SKIN EXPOSURE: Remove contaminated clothing and wash with soap and water. If redness or irritation persists, seek medical assistance.
INHALATION: Remove to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if necessary.
INGESTION: Seek medical attention immediately. Do not induce vomiting unless directed by medical personnel.

SECTION 5 FIREFIGHTING MEASURES

FLASH POINT: Not available
AUTO IGNITION TEMPERATURE: Not available
EXPLOSION LIMITS: Not available
EXTINGUISHING MEDIUM: Special powder for metal fires. Do NOT use water.
SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Hafnium oxide

SECTION 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Wear all appropriate equipment when using this material. Ensure adequate ventilation. Avoid the formation of dust. Avoid breathing vapors, mist, gas, or dust. Keep away from sources of ignition.
ENVIRONMENTAL PRECAUTIONS: Prevent spillage from entering drains or allowing to be released into the environment.
METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP: Sweep up and place in a suitable container for proper disposal.

SECTION 7 HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Wear appropriate personal protective equipment. Avoid contact with skin and eyes. Use with adequate ventilation. Avoid formation of dusts and aerosols. Keep away from sources of ignition. Take measures to prevent the build up of electrostatic charge.
CONDITIONS FOR SAFE STORAGE: Store in cool, dry, and well-ventilated area. Store under dry inert gas. Air sensitive.

SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

EXPOSURE CONTROLS:

Component	Exposure Limits	Basis	Entity
Hafnium	0.5 mg/m^3	TLV	ACGIH
	0.5 mg/m^3	PEL	OSHA
	0.5 mg/m^3	REL	NIOSH
Zirconium	10 mg/m^3	TLV	ACGIH
	5 mg/m^3	PEL	OSHA

TLV: Threshold Limit Value over 8 hours of work. REL: Recommended Exposure Limit
PEL: Permissible Exposure Limit

SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION (Cont.)

EYE EXPOSURE & PROTECTION: May cause eye irritation. Wear chemical safety glasses or goggles and face shield.
SKIN EXPOSURE & PROTECTION: May cause skin irritation. Wear nitrile or rubber gloves .11 mm thickness or above, and a complete suit protecting against chemicals.
VENTILATION: Provide local exhaust, preferably mechanical.
INHALATION EXPOSURE & PROTECTION: May cause respiratory irritation Use an approved respirator.
INGESTION EXPOSURE: May be irritating if swallowed.
ADDITIONAL PROTECTION: Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

COLOR AND FORM: Gray solid
ODOR: None
MOLECULAR WEIGHT: 178.49
BOILING POINT: 4600°C
MELTING POINT: 2227° C
SPECIFIC GRAVITY: 13.09 gm/ml
SOLUBILITY: Insoluble

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Stable
HAZARDOUS POLYMERIZATION: Will not occur
CONDITIONS TO AVOID: Not available
INCOMPATIBILITY: Oxidizing agents, air, heat, flames, and sparks. Extremes of temperature and direct sunlight.
DECOMPOSITION PRODUCTS: Hafnium oxide

SECTION 11 TOXICOLOGICAL DATA

ACUTE TOXICITY: Not available
CARCINOGENIC EFFECTS: No components of this product present at levels greater than or equal to 0.1% is identified a carcinogen.
MUTAGENIC EFFECTS: Not available
TETRATOGENIC EFFECTS: Not available
CHRONIC TOXICITY: Hafnium and hafnium compounds may be irritating to the skin and eyes. There are reports of liver damage from hafnium exposure. Inhalation of Zirconium and Zirconium compounds may cause pulmonary granulomas.
RTECS: No data

To the best of our knowledge the toxicological effects of this compound have not been fully investigated.

SECTION 12 ECOLOGICAL DATA

No data available.

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose of in according to local, state, and federal regulations.

SECTION 14 TRANSPORTATION DATA

UN3178
Flammable solid, inorganic, n.o.s.
(Hafnium)
CLASS 4.1
PG III

Marine Pollutant: No

SECTION 15 REGULATORY INFORMATION

TSCA: Listed
SARA 302/304: Not Listed
SARA 311/312: Not Listed
SARA (TITLE 313): Not Listed
CALIFORNIA PROP. 65: Not Listed
MASSACHUSETTS RIGHT TO KNOW COMPONENTS: No components are subject to the Massachusetts Right to Know Act.

SECTION 15 REGULATORY INFORMATION (Cont.)

NEW JERSEY RIGHT TO KNOW COMPONENTS: No components are subject to the New Jersey Right to Know Act.
PENNSYLVANIA RIGHT TO KNOW COMPONENTS: No components are subject to the Pennsylvania Right to Know Act.

SECTION 16 OTHER INFORMATION

HMIS CLASSIFICATION:
Health: 2 Fire: 2 Reactivity Hazard: 2
NFPA RATING:
Health: 0 Flammability: 2 Reactivity Hazard: 2

CAS #: Chemical Abstracts Service Number
TLV: Threshold Limit Value
REL: Recommended Exposure Limit
PEL: Permissible Exposure Limit
ACGIH: American Conference of Governmental Industrial Hygienists
OSHA: Occupational Safety and Health Administration
NIOSH: National Institute for Occupational Safety and Health
mg/m3: milligrams per cubic meter
RTECS: Registry of Toxic Effects of Chemical Substances
UN: United Nations
n.o.s: Not Otherwise Specified
PG: Packing Group
TSCA: Toxic Substances Control Act
SARA: Superfund Amendments and Reauthorization Act
HMIS: Hazardous Materials Identification System
NFPA: National Fire Protection Association

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DATE PREVIOUSLY E PREPARED: 01/15
DATE REVISED: 11/26
REVISED SUMMARY: Removed fax number. Section # 2 updated category. Section # 15 added TSCA Listed. Section # 16 updated abbreviation list.

EHS / SDS DEPT.