

# MATERIAL SAFETY DATA SHEET

24 HR. EMERGENCY PHONE # CHEM-TREC 1-800-424-9300

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## SECTION 1 Product Identification

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**CHEMICAL NAME:** Hafnium powder

**CAS #:** 7440-58-6

**FORMULA:** Hf

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## SECTION 2 Composition and Information on Ingredients

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INGREDIENT:	CAS #	%	ACGIH (TWA)	OSHA (PEL)
Title Compound	7440-58-6	96	0.5mg/m3(as Hf)	0.5mg/m3 (as Hf)
zirconium	7440-67-7	4	5mg/m3 (as Zr)	5mg/m3 (as Zr)

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## SECTION 3 Hazards Identification

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**EMERGENCY OVERVIEW:** May be irritating to skin, eyes and respiratory tract.

**PRIMARY ROUTES OF EXPOSURE:** Ingestion, inhalation (of dust or fume)

**EYE CONTACT:** The dust may cause slight to mild irritation of the eyes.

**SKIN CONTACT:** The dust may cause slight to mild irritation of the skin.

**INHALATION:** Hazard associated with inhalation of fine dust or fume. May be irritating to nasal cavity and respiratory tract.

**INGESTION:** No specific information is available on the physiological effects of ingestion. May cause vomiting and diarrhea.

**CHRONIC HEALTH EFFECTS:** No information available on long-term chronic effects.

**ACUTE HEALTH EFFECTS:** Dust may be irritating to skin, eyes and respiratory tract. Ingestion can lead to gastrointestinal effects, vomiting and nausea.

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## SECTION 4 First Aid Measures

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**EYE EXPOSURE:** Immediately flush the eyes with copious amounts of water for at least 15 minutes. Assure flushing under eyelids. A victim may need assistance in keeping their eyelids open. Get immediate competent medical attention.

**SKIN EXPOSURE:** Wash affected area with water. Remove contaminated clothes if necessary. Seek medical assistance if irritation persists.

**INHALATION:** Remove the victim to fresh air. Closely monitor the victim for signs of respiratory problems, such as difficulty in breathing, coughing, wheezing, or pain. In such cases seek immediate medical assistance.

**INGESTION:** Seek medical assistance immediately. Keep the victim calm. Give the victim water (only if conscious). Induce vomiting only if directed by medical personnel.

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## **SECTION 5                      Firefighting Measures**

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**FLASH POINT:** not applicable

**AUTO IGNITION TEMPERATURE:** 190°C

**EXPLOSION LIMITS:** unknown

**EXTINGUISHING MEDIUM:** Class D metal fire agent, dry salt or sand

**SPECIAL FIREFIGHTING PROCEDURES:** If involved in a fire, fire fighters should be equipped with a NIOSH approved positive pressure self-contained breathing apparatus and full protective clothing.

**HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS:** Hafnium oxide as an oxidation product.

**UNUSUAL FIRE OR EXPLOSION HAZARDS:** Flammable solid. Formation of explosive air/dust mixtures is possible. Water may produce explosive hydrogen gas.

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## **SECTION 6                      Accidental Release Measures**

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**SPILL AND LEAK PROCEDURES:** In the case of a spill, the fine powder should be covered with dry sodium carbonate or dolomite in order to reduce the formation of dust. Sweep up the mixture.

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## **SECTION 7                      Handling and Storage**

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**HANDLING AND STORAGE:** Store and handle the material under an inert atmosphere of nitrogen or argon.

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## **SECTION 8                      Exposure Controls and Personal Protection**

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**EYE PROTECTION:** Always wear approved safety glasses w/side shields, or safety goggles, face shield when handling a chemicals substance in the laboratory.

**SKIN PROTECTION:** Chemical-resistant.

**VENTILATION:** If possible, handle the material in an efficient fume hood.

**RESPIRATOR:** If in form of fine dust and ventilation is not available a respirator should be worn. The use of respirators requires a Respirator Protection Program to be in compliance with 29 CFR 19-10.134.

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## **SECTION 9                      Physical and Chemical Properties**

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**COLOR AND FORM:** -80 + 200 mesh

**MOLECULAR WEIGHT:** 178.49

**MELTING POINT (DEG. C.):** 190°C

**BOILING POINT:** 4602°

**VAPOR PRESSURE:** no data

**SPECIFIC GRAVITY:** 13.31

**SOLUBILITY IN WATER:** insoluble

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## **SECTION 10                    Stability and Reactivity**

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**STABILITY:** pyrophoric solid

**HAZARDOUS POLYMERIZATION:** no hazardous polymerization  
**CONDITIONS TO AVOID:** Contact with moisture, heat and ignition sources including open flame and electrostatic discharge.  
**INCOMPATIBILITY:** Halogens, nitric acid, halocarbons. Mixtures with oxidizing agents such as chromates, nitrates, copper oxide.  
**DECOMPOSITION PRODUCTS:**

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## **SECTION 11 Toxicological Information**

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**RTECS DATA:** No information available in the RTECS files.  
**MUTAGENIC EFFECTS:** no data  
**TETRATOGENIC EFFECTS:** no data  
**CARCINOGENIC EFFECTS:** no data

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

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## **SECTION 12 Ecological Information**

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**ECOLOGICAL INFORMATION:** No information available

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## **SECTION 13 Disposal Considerations**

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**DISPOSAL:** Dispose of in according to local state and federal regulations.

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## **SECTION 14 Transportation Information**

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Hafnium power, dry, Class 4.2, UN 2545, PG II

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## **SECTION 15 Regulatory Information**

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**TSCA:** Listed in the TSCA inventory  
**SARA (TITLE 313):** Title compound not listed

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## **SECTION 16 Other Information**

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