

Material Safety Data Sheet

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Emergency Phone Numbers:

CHEMTREC: 800-424-9300

POISON CENTER: 800-562-8236

Section 1:

Product Identification

Chemical Name(s) and Synonym(s): Hafnium Oxide **Formula:** HfO₂

Chemical Family: Metal Oxide

Chem. Abstract No: 12055-23-1

Cal. Molecular Weight: 210.49

Section 2:

Ingredients/Summary of Hazards

<u>Ingredient(s)</u>	<u>CAS #</u>	<u>%</u>	<u>TLV</u>	<u>OSHA PEL</u>
Hafnium Oxide	12055-23-1	99%	0.5mg(Hf)/m ³	0.5mg(Hf)/m ³

Section 3:

Physical Data

Boiling Point (°C): **5400** Density (gm/cc): **9.68 @ 20C**
Vapor Pressure: **0@20C** % Volatile by Volume: **non volatile**
Evaporation Rate: **N/A** Melting Point (°C): **2758**
Solubility w/ Water: **Insoluble**
Reaction w/ Water: **None**
Appearance/Odor: **Odorless, white powder, pieces and/or tablets.**

Section 4:

Fire and Explosion Hazard Data

Flashpoint/Method: **N/A**
Auto ignition Temp (°C): **N/A**
Flammability: **Non flammable**
Extinguishing Media: Water Foam Class D Extinguisher
 Dry Chemical CO₂ Other

Special Fire Fighting Procedures: **Wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.**

Usual Fire and Explosion Hazards: **None Known**

**Section 5:
Health Hazard Data**

Toxicity Data: nontoxic
Route(s) of Entry: Inhalation, Skin, & Ingestion

Effects of Overexposure (acute and chronic)

Inhalation: May cause irritation to the nose, throat and mucous membranes.
Dermal/Eye Contact: May be irritating.
Ingestion: Considered to be non-toxic due to poor absorption.
Medical Conditions generally aggravated by exposure: None.

Emergency and First Aid Procedures:

Ingestion: Induce vomiting, contact physician.
Inhalation: Remove to fresh air. Administer oxygen and contact physician.
Skin: Brush material off skin and wash affected area with soap and water.
Eyes: Irrigate with water for 15 minutes.

**Section 6:
Reactivity Data**

Stability: (x) stable () unstable
Conditions Contributing to instability: None
Incompatibility (materials to avoid): None
Hazardous Decomposition Products: None
Hazardous Polymerization: Will not occur
Conditions to Avoid: None Known

**Section 7:
Spill or Leak Procedures**

Steps to be taken in case material is released or spilled: Wearing full protective clothing, isolate the area and insure proper ventilation. Vacuum up spill and place in container for proper disposal.
Waste Disposal Method: In accordance with regulations.

Section 8

Special Protective Information

Respiratory Protection: (specify type) NIOSH/MSHA approved respirator
Protective Gloves: Recommended
Eye Protection: Safety glasses with side shields
Other Protective Equip. Maintain sink, safety shower and eyewash fountain in work area. Wear full protective clothing at all times.

Section 9

Special Precautions and Transportation Regulations

Precautions to be taken in handling and storing: Store in tightly closed containers in a cool, dry place. Wash hands and face thoroughly after handling and before eating.

Transportation Requirements: Non hazardous by D.O.T. regulations.

DOT Class:

UN Number:

IMCO Class:

Other:

N/D = Do Data Found

N/A= Not Applicable

Revised: 08/08/05