

# Otto Chemie Pvt Ltd

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## MATERIAL DATA SAFETY SHEET

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### 1. Product and Company Identification

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Trade Name: Hafnium carbide  
Chemical Formula: HfC  
Code : H 3915

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### 2. Hazards Identification

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Signal Word: Warning  
Hazard Statements: H228: Flammable solid  
Precautionary Statements: P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking  
P280: Wear protective gloves/protective clothing/eye protection/face protection  
P240: Ground/bond container and receiving equipment  
P241: Use explosion-proof electrical/ventilating/light/equipment  
P370+P378: In case of fire: Use CO<sub>2</sub>, powder or water spray for extinction  
HMIS Health Ratings (0-4):  
Health: 1  
Flammability: 2  
Physical: 1

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### 3. Composition

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Chemical Family: Ceramic  
Additional Names: Hafnium(IV) carbide  
Hafnium carbide (HfC):  
Percentage: 100 wt%  
CAS #: 12069-85-1  
EC #: 235-114-1

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### 4. First Aid Procedures

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General Treatment: Seek medical attention if symptoms persist.  
Special Treatment: None  
Important Symptoms: None  
Inhalation: Remove victim to fresh air. Supply oxygen if breathing is difficult.  
Ingestion: Give one to two glasses of water and induce vomiting. Never induce vomiting or give anything by mouth to an unconscious person.  
Skin: Wash affected area with mild soap and water. Remove any contaminated clothing.  
Eyes: Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing

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### 5. Firefighting Measures

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Flammability: Flammable  
Extinguishing Media: Do not use water for metal fires – use CO<sub>2</sub>, extinguishing powder.  
Spec. Fire Fighting Procedure: Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.

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## 6. Accidental Release Measures

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If Material Is Released/Spilled: Wear appropriate respiratory and protective equipment specified in special protection information. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal. Take care not to raise dust.  
Environmental Precautions: Isolate runoff to prevent environmental pollution

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## 7. Handling and Storage

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Handling Conditions: Wash thoroughly after handling.  
Storage Conditions: Store in a cool dry place in a tightly sealed container. Store apart from materials and conditions listed in section 10.  
Work/Hygienic Maintenance: Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.  
Ventilation: Provide sufficient ventilation to maintain concentration at or below threshold limit.

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## 8. Exposure Controls and Personal Protection

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Permissible Exposure Limits: 0.5 mg/m<sup>3</sup>  
as Hf, long-term value  
Threshold Limit Value: 0.5 mg/m<sup>3</sup>  
as Hf, long-term value  
Special Equipment: None  
Respiratory Protection: Dust Respirator  
Protective Gloves: Rubber gloves  
Eye Protection: Safety glasses or goggles  
Body Protection: Protective work clothing. Wear close-toed shoes and long sleeves/pants.

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## 9. Physical and Chemical Characteristics

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Color Grey  
Form: Powder, Granules, Pellets, Sputtering target, Custom parts  
Odor: Odorless  
Water Solubility: Insoluble  
Boiling Point: N/A  
Melting Point: 3890 °C  
Flash Point: N/A  
Autoignition Temperature: N/A  
Density: 12.2 g/cc  
Molecular weight: 190.5 g/mol  
10. Reactivity

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Stability: Stable under recommended storage conditions  
Reacts With: Oxidizing agents  
Incompatible Conditions: None  
Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Metal oxide fume

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## 11. Toxicological Information

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Potential Health Effects:  
Eyes: May cause irritation  
Skin: May cause irritation  
Ingestion: May cause irritation  
Inhalation: May cause irritation  
Chronic: N/A  
Signs & Symptoms: N/A  
Aggravated Medical Conditions: N/A

Median Lethal Dose: N/A

Carcinogen: Hafnium and hafnium compounds may be irritating to the skin and eyes. There are reports of liver damage from hafnium exposure.

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#### 12. Ecological Information

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Aquatic Toxicity: Low

Persistent Bioaccumulation Toxicity: No

Very Persistent, Very Bioaccumulative: No

Notes: N/A

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#### 13. Disposal Considerations

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Dispose of in accordance with local, state, national, and international regulations.

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#### 14. Transportation Data

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Hazardous: Hazardous as powder only.

Hazard Class: 4.1 Flammable solids, self-reactive substances and solid desensitized explosives.

Packing Group: III

UN Number: UN3178

Proper Shipping Name: Flammable solid, inorganic, n.o.s. (Hafnium carbide)

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#### 15. Regulatory Information

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Sec 302 Extremely Hazardous: No

Sec 304 Reportable Quantities: N/A

Sec 313 Toxic Chemicals: No

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#### 16. Other Information

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This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.