



MATERIAL SAFETY DATA SHEET  
COMPLIES WITH 29 CFR 1910.1200.  
OSHA HAZARD COMMUNICATION RULE

DATE OF LAST REVISION: 06-20-96

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## CHEMICAL IDENTITY

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LABEL IDENTITY	<b>Hafnium Carbide</b>	
CHEMICAL NAME/SYNONYMS	<b>Hafnium Carbide</b>	
FORMULA	<b>HfC</b>	
MOLECULAR WEIGHT	<b>190.54</b>	
CHEMICAL FAMILY	<b>Metal Carbide</b>	
HAZARDOUS INGREDIENTS	<b>Hafnium Carbide</b>	
%: <b>100</b>	AGCIH TLV: <b>.5mg/m3</b>	OSHA/PEL: <b>.5mg/m3</b>

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## PHYSICAL AND CHEMICAL PROPERTIES

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COLOR, FORM AND ODOR	<b>Black powder, odorless</b>
BOILING POINT	<b>ND</b>
DENSITY (gm/cc)	<b>12.20</b>
VAPOR PRESSURE @ 20°	<b>ND</b>
% VOLATILE BY VOLUME (%)	<b>ND</b>
REACTION WITH WATER	<b>ND</b>
EVAPORATION RATE (H2O=1)	<b>ND</b>
SOLUBILITY IN WATER	<b>Insoluble</b>
MELTING POINT	<b>3890°C</b>

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## FIRE AND EXPLOSION HAZARD DATA

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FLASH POINT	<b>NA</b>
AUTOIGNITION TEMPERATURE (°C)	<b>NA</b>
FLAMMABILITY	<b>Slight as powder</b>
EXTINGUISHING MEDIA	<b>Agents for metal fires: dry graphite, TEC or MET-L-X.</b>
SPECIAL FIRE FIGHTING PROCEDURES	<b>Do not use water. Wear full protective clothing when firing chemical fires.</b>
UNUSUAL FIRE & EXPLOSION HAZARDS	<b>Flammability increases when material is heated in air.</b>

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## HEALTH HAZARD INFORMATION

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TOXICITY DATA **No data**

HMIS RATING:

HEALTH: **1**    FLAMMABILITY: **1**    REACTIVITY: **0**    PERSONAL PROTECTION: **E**



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### HEALTH HAZARD INFORMATION CONTINUED

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MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: **No data**

EFFECTS OF OVEREXPOSURE (acute and chronic):

INHALATION: **no data available. May be an irritant to the respiratory tract.**

DERMAL/EYE: **mild irritation to the skin and eyes.**

OTHER: **hafnium and its compounds have been reported to cause liver damage in laboratory animals. No other data available.**

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CARCINOGENICITY: **None** NTP: **no** IARC MONOGRAPHS: **no** OSHA REGULATE: **no**

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EMERGENCY FIRST AID PROCEDURES:

INGESTION: **Give victim fluids, then induce vomiting. Seek medical attention.**

INHALATION: **Remove to fresh air.**

SKIN CONTACT: **Brush off material. Wash affected area with soap and water.**

EYE CONTACT: **Flush eyes to remove particles, if irritation persists, seek medical attention.**

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### REACTIVITY DATA

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STABILITY	<b>Stable</b>
CONDITIONS CONTRIBUTING TO UNSTABILITY	<b>ND</b>
INCOMPATIBILITY (MATERIALS TO AVOID)	<b>ND</b>
HAZARDOUS DECOMPOSITION PRODUCTS	<b>ND</b>
HAZARDOUS POLYMERIZATION	<b>Will Not Occur</b>
CONDITIONS TO AVOID	<b>ND</b>

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### SAFE HANDLING AND USE

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STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

**Sweep or scoop up material and place in container for disposal. Avoid raising dust.**

WASTE DISPOSAL METHOD:

**Dispose of with normal refuse.**



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### SPECIAL PROTECTIVE INFORMATION

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RESPIRATORY PROTECTION <b>respirator</b>	<b>Use an appropriate NIOSH approved if airborne dust concentration exceeds the appropriate PEL or TLV</b>
LOCAL EXHAUST	<b>Use local exhaust ventilation which is adequate to limit personal exposure to levels which do not exceed the TLV</b>
MECHANICAL (general)	<b>No data</b>
PROTECTIVE GLOVES	<b>Recommended when contact is likely</b>
EYE PROTECTION	<b>Safety goggles are necessary</b>
OTHER PROTECTIVE EQUIPMENT	<b>No data</b>

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### SPECIAL PRECAUTIONS

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**PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE: Keep the container closed, whenever possible. Maintain good housekeeping procedures to prevent accumulation of dust. Use clean up methods which minimize dust generation such as vacuuming or wet clean up. Use an appropriate NIOSH approved respirator if airborne dust concentrations exceed the appropriate PEL or TLV. Store away from sources of heat, ignition or open flames.**

**OTHER PRECAUTIONS: Wash thoroughly after handling and before eating or smoking at the end of the work shift. Do not shake clothing or other items to remove dust. Use a vacuum cleaner. Avoid dust inhalation and direct skin contact. Do not ingest.**

TRANSPORTATION REQUIREMENTS	DOT CLASS:	<b>ND</b>
	UN NUMBER:	<b>ND</b>
	IMCO CLASS:	<b>ND</b>
	OTHER:	<b>ND</b>

THE ABOVE INFORMATION IS ACCURATE TO THE BEST OF OUR KNOWLEDGE. HOWEVER, SINCE DATA, SAFETY STANDARDS AND GOVERNMENT REGULATIONS ARE SUBJECT TO CHANGE THE CONDITIONS OF HANDLING AND USE, OR MISUSE ARE BEYOND OUR CONTROL, **ANGSTROM SCIENCES** MAKE NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR THE RELIANCE THEREON. USER SHOULD SATISFY HIMSELF THAT HE HAS ALL CURRENT DATA RELEVANT TO HIS PARTICULAR USE.

**NA= NOT APPLICABLE**

**ND= NO DATA FOUND**

**NR=NOT RECORDED**