Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Ultrafoam ^{TM} Hafnium Carbide Foam

Supplier: Ultramet
12173 Montague St, Pacoima California 91331
Telephone: +1 818-899-0236 Fax: +1- 818-890-1946
www.ultramet.com

2. HAZARDS IDENTIFICATION

Emergency Overview
OSHA Hazards: Not classified by OSHA

GHS Classification: Not categorized under GHS

GHS Label elements, including precautionary statements
Pictogram

Signal word: Warning

Hazard statement(s)

H228 Flammable solid.

H303 May be harmful if swallowed.

H333 May be harmful if inhaled.

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking

P241 Use explosion-proof electrical/ventilating/lighting/ equipment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P240 Ground/bond container and receiving equipment.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P312 Call a POISON CENTER or doctor/ physician if you feel unwell.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P370+P378A In case of fire: Use for extinction: CO2, powder or water spray.

HMIS Classification

Health hazard: 1
Flammability: 1
Physical hazards: 0

NFPA Rating

Health hazard: 2
Fire: 2
Reactivity Hazard: 1

Potential Health Effects

Inhalation: May be an irritant to the respiratory tract.
Skin: Mild skin irritant.
Eyes Mild eye irritant.
Ingestion May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula: HfC
Molecular Weight: 190.54 g/mol

Component	CAS no.	Concentration
Hafnium Carbide	12069-85-1	99.9%

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - carbon oxides, hafnium oxide

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet brushing and place in container for disposal according to local regulations. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - Nonsmoking. Take measures to prevent the buildup of electrostatic charge.

Conditions for safe storage
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Keep in a dry place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Silicon Carbide CAS No. 12069-85-1		
Standard	Value (TWA)	Source
PEL	Not determined	
REL	Not determined	
TLV	Not determined	

Hafnium (metal & compounds) CAS No. 7440-58-6		
Standard	Value (TWA)	Source
PEL (Hf)	0.5 mg/m^3	OSHA CFR 1910.1000 Table Z-1
REL (Hf)	0.5 mg/m^3	NIOSH
TLV (Hf)	0.5 mg/m^3	ACGIH

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Flame retardant antistatic protective clothing, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Form: Solid
Color: Dark gray

Safety data
pH: no data available

Melting point/range: 3890 °C

Boiling point: 4603 °C

Flash point: no data available

Flammability (solid, gas): no data available

Ignition temperature: no data available

Auto-ignition temperature: no data available

Lower explosion limit: no data available

Upper explosion limit: no data available

Vapor pressure: no data available

Density: 12.2 g/cm^3

Water solubility: insoluble

Partition coefficient: n-octanol/water: no data available

Relative vapor density: no data available

Odor: odorless

Odor Threshold: no data available

Evaporation rate: no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
Heat, flames and sparks. Extremes of temperature and direct sunlight.

Materials to avoid
Strong oxidizing agents, Strong acids

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - carbon oxides
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50 no data available

Inhalation LC50 no data available

Dermal LD50 no data available

Other information on acute toxicity no data available

Skin corrosion/irritation no data available

Serious eye damage/eye irritation no data available

Respiratory or skin sensitization no data available

Germ cell mutagenicity no data available

Carcinogenicity

IARC: No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity no data available

Teratogenicity no data available

Specific target organ toxicity - single exposure (Globally Harmonized System) no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System) no data available

Aspiration hazard no data available

Potential health effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion May be harmful if swallowed.

Skin May be harmful if absorbed through skin. May cause skin irritation.

Eyes May cause eye irritation.

Signs and Symptoms of Exposure To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic affects no data available

12. ECOLOGICAL INFORMATION

Toxicity no data available

Persistence and degradability no data available

Bioaccumulative potential no data available

Mobility in soil no data available

PBT and vPvB assessment no data available

Other adverse affects no data available

13. DISPOSAL CONSIDERATIONS

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Hazard Class 4.1
Flammable solid, inorganic, n.o.s., (hafnium carbide)
ID No. UN3178
Packing group III

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards Irritant

SARA 302 Components SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards Flammable solid

Massachusetts Right To Know
Hafnium Carbide CAS # 12069-85-1

Pennsylvania Right To Know Components
Hafnium Carbide CAS # 12069-85-1

New Jersey Right To Know Components
Hafnium Carbide CAS # 12069-85-1

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.