

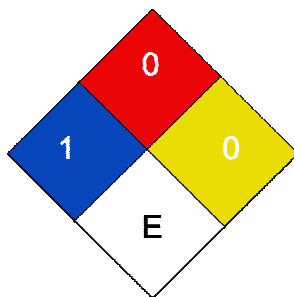
MATERIAL SAFETY DATA SHEET

HAFNIUM OXIDE POWDER **Stock #: NS6130-12-000653**

1. IDENTIFICATION OF THE PRODUCT AND THE COMPANY

Product Name : Hafnium Oxide Powder
Use : Research and Development
Address : Nanoshel LLC
3422 Old Capitol Suit 1305
Willmington DE – 19808
United States

Emergency : +1.532.253.9878



Health	1
Fire	0
Reactivity	0
Personal Protection	E

2. COMPOSITION & INFORMATION ON INGREDIENTS

Chemical Characterisation : HfO_2
Hazardous Ingredients : Nil

3. HAZARD IDENTIFICATION

Toxicity : No Data Available
Eye Contact : Dust may cause irritation

4. FIRST AID MEASURES

Skin : Wash skin with soap and copious amounts of water

Eyes : Immediate and prolonged irritation treat with copious amounts of water.

Ingestion	:	Wash out mouth with water provided person Is Conscious.
Inhalation	:	If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen

5. FIREFIGHTING MEASURES

Extinguishing Data	:	Water Spray
Unsuitable Extinguishing Data	:	Carbon Dioxide, Dry Chemical Powder, Polymer Foam
Unusual Firefighting Hazards	:	Capable of creating a dust explosion
Special Firefighting Procedures	:	Use normal procedures which include wearing self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	:	Wear respirator, chemical safety goggles, rubber boots and gloves.
Precautions to the Environment	:	Sweep up, place in a bag and hold for waste disposal.
Cleanup Procedures	:	Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

7. HANDLING AND STORAGE

Handling Precautions	:	Chemical Safety Goggles. Compatible with Chemical-resistant Gloves
Storage	:	Store in a cool dry place.
Unusable Packaging Materials	:	Wash thoroughly after handling. Irritating dust, Keep tightly closed

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Controls

Personal Protective Equipment

Respiratory	:	Self-contained breathing apparatus
Hand	:	Chemical-resistant Gloves
Eye	:	Avoid contact with eyes
Skin	:	Wash thoroughly after handling

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	:	Powder
Colour	:	White
Odour	:	N/A

Safety Related Information

FlashPoint	:	N/A
Boiling Point	:	5400°C
Melting Point	:	~2758 °C
pH	:	N/A

10. STABILITY AND REACTIVITY

Stability	:	Completely Stable
Reactivity	:	Non Reactive/ Non Soluble

11. TOXICOLOGICAL INFORMATION

Possible Health Effects

Skin	:	No effect
Eyes	:	Irritation
Inhalation	:	No Chocking Hazard

12. ECOLOGICAL IMPACT

Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.
No Negative Ecological Impact, Data not Available

13. WASTE DISPOSAL

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator, equipped with an afterburner and scrubber

14. TRANSPORT INFORMATION (UN ORNEK OLARAK VERİLMİŞTİR)

HS Code	:	28259090
CAS	:	12055-23-1
Proper Shipping Name	:	Hafnium Oxide Powder
Air Transport (ICAO & IATA)	:	Specialty Chemicals
Class	:	Non Hazardeous
Packing group	:	Normal Packing

15. OTHER REGULATORY INFORMATION

Federal and State Regulations: TSCA 8(b) inventory: Hafnium Oxide Powder

Other Regulations: EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada)

DSCL (EEC):

R36- Irritating to eyes

S2- Keep out of the reach of children

S46- If swallowed, seek medical advice immediately & show container or label

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 0

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:

Gloves.

Lab coat.

Dust respirator. Be sure to use an approved/certified respirator or equivalent.

Splash goggles.

16. OTHER INFORMATION

References: Not available

Other Special Considerations: Not available