

# SAFETY DATA SHEET

Date Revised: 09/July/2024

## SECTION 1. IDENTIFICATION

**Product Name:** Hafnium Sulfide Powder

**CAS #:** 18855-94-2

**Relevant identified uses of the substance:** Scientific research and development

**Supplier details:**

Stanford Advanced  
Materials  
23661 Birtcher Dr.  
Lake Forest, California,  
92630

**Emergency telephone number:**

International: (949) 812-6690

## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

GHS label elements

The substance is classified and labeled according to the Globally Harmonized System (GHS).

Hazard pictograms

GHS07

Signal word

Warning

Hazard-determining components of labeling:

Hafnium sulfide, 99%

Hazard statements

H315 Causes skin irritation.

H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
Precautionary statements  
P101 If medical advice is needed, have product container or label at hand.  
P102 Keep out of reach of children.  
P103 Read label before use.  
P262 Do not get in eyes, on skin, or on clothing.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.  
Classification system:  
NFPA ratings (scale 0 - 4)  
Health = 1  
Fire = 0  
Reactivity = 2  
The substance demonstrates unusual reactivity with water.  
HMIS-ratings (scale 0 - 4)  
Health = 1  
Fire = 0  
Reactivity = 2  
Other hazards  
Results of PBT and vPvB assessment  
PBT: N/A  
vPvB: N/A

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### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substances  
CAS # / Substance Name  
18855-94-2 Hafnium sulfide  
Identification number(s)  
EC number: 234-885-1

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### **SECTION 4. FIRST AID MEASURES**

Description of first aid measures  
If inhaled:  
In case of unconsciousness place patient stably in side position for transportation.  
In case of skin contact:  
Immediately wash with soap and water; rinse thoroughly.  
In case of eye contact:  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.  
If swallowed:  
If symptoms persist consult doctor.  
Most important symptoms and effects, both acute and delayed  
No data available  
Indication of any immediate medical attention and special treatment needed

No data available

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## **SECTION 5. FIREFIGHTING MEASURES**

Extinguishing media

Suitable extinguishing agents:

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

For safety reasons unsuitable extinguishing agents:

Water

Special hazards arising from the substance or mixture

No data available

Advice for firefighters

Protective equipment:

Mouth respiratory protective device.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures

Mount respiratory protective device.

Use personal protective equipment. Keep unprotected persons away.

Environmental precautions:

No special measures required.

Methods and materials for containment and cleanup:

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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## **SECTION 7. HANDLING AND STORAGE**

Precautions for safe handling

No special precautions are necessary if used correctly.

Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Conditions for safe storage, including any incompatibilities:

Requirements to be met by storerooms and receptacles:

No special requirements.

Information about storage in one common storage facility:

Do not store together with acids.

Further information about storage conditions:

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

Specific end use(s)

No data available

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information about design of technical systems:

No further data; see item 7.

Control parameters

Components with limit values that require monitoring at the workplace:

Not required.

Additional information:

The lists that were valid during the creation were used as basis.

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:

Tightly sealed goggles

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:

Form: Powder

Odor: Sulphurous

Odor threshold: No data available.

pH: N/A

Melting point/Melting range: No data available.

Boiling point/Boiling range: Undetermined.

Flash point: N/A

Flammability (solid, gas): Contact with water liberates extremely flammable gases.

Ignition temperature:

Decomposition temperature: No data available.

Autoignition: No data available.

Danger of explosion: No data available.

Explosion limits:

Lower: No data available  
Upper: No data available.  
Vapor pressure: no data hPa  
Density at 20 °C (68 °F): No data available.  
Relative density: No data available.  
Vapor density: N/A  
Evaporation rate: N/A  
Solubility in Water (H<sub>2</sub>O): Insoluble.  
Partition coefficient (n-octanol/water): No data available.  
Viscosity:  
Dynamic: N/A  
Kinematic: N/A  
Organic solvents: No data available.  
Solids content: No data available.  
Other information  
No data available

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## **SECTION 10. STABILITY AND REACTIVITY**

Reactivity  
Chemical stability  
Thermal decomposition / conditions to be avoided:  
No decomposition if used according to specifications.  
Possibility of hazardous reactions  
Contact with water releases flammable gases.  
Conditions to avoid  
No data available  
Incompatible materials:  
No data available  
Hazardous decomposition products:  
No dangerous decomposition products known.

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## **SECTION 11. TOXICOLOGICAL INFORMATION**

Information on toxicological effects  
Acute toxicity:  
Primary irritant effect:  
on the skin:  
Irritant to skin and mucous membranes.  
on the eye:  
Irritating effect.  
Sensitization:  
No sensitizing effects known.

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## **SECTION 12. ECOLOGICAL INFORMATION**

Toxicity  
Aquatic toxicity:  
No data available

Persistence and degradability  
No data available  
Bioaccumulative potential  
No data available  
Mobility in soil  
No data available  
Additional ecological information:  
Not known to be hazardous to water.  
Results of PBT and vPvB assessment  
PBT:  
N/A  
vPvB:  
N/A  
Other adverse effects  
No data available

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### **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste treatment methods  
Recommendation:  
Must not be disposed of together with household garbage. Do not allow product to enter drains, sewage systems, or other water courses system.  
Uncleaned packagings:  
Recommendation:  
Disposal must be made according to official regulations

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### **SECTION 14. TRANSPORT INFORMATION**

UN-Number  
DOT, ADN, IMDG, IATA  
not regulated  
UN proper shipping name  
DOT, ADN, IMDG, IATA  
not regulated  
Transport hazard class(es)  
DOT, ADN, IMDG, IATA  
Class  
not regulated  
Packing group  
DOT, IMDG, IATA  
not regulated  
Environmental hazards:  
Marine pollutant:  
No  
Special precautions for user  
N/A  
Transport in bulk according to Annex II of  
MARPOL73/78 and the IBC Code  
N/A

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## **SECTION 15. REGULATORY INFORMATION**

Safety, health and environmental regulations/legislation specific for the substance or mixture

Sara

Section 355 (extremely hazardous substances):

Substance is not listed.

Section 313 (Specific toxic chemical listings):

Substance is not listed.

TSCA (Toxic Substances Control Act):

Substance is listed.

Proposition 65

Chemicals known to cause cancer:

Substance is not listed.

Chemicals known to cause reproductive toxicity for females:

Substance is not listed.

Chemicals known to cause reproductive toxicity for males:

Substance is not listed.

Chemicals known to cause developmental toxicity:

Substance is not listed.

Carcinogenic categories

EPA (Environmental Protection Agency)

Substance is not listed.

TLV (Threshold Limit Value established by ACGIH)

Substance is not listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)

Substance is not listed.

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## **SECTION 16. OTHER INFORMATION**

This material safety data sheet is offered solely for your information, consideration, and investigation.

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