SAFETY DATA SHEET

Revision date 16-July-2020

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier

CAS No. 7440-58-6
Product Name Hafnium powder
Molecular Formula Hf

Relevant identified uses of the substance or mixture and uses advised against

Recommended use Alloy product manufacture.

Details of the supplier

Company name Hunan Huawei Jingcheng Material Technology Co., Ltd.
Address Room 516, Hunan International Business Center, Jintai Plaza, East Second Ring, Furong District, Changsha City, Hunan Province, China.
Website www.hnjc-metal.com
Telephone 0086-731-85124338
Fax

Emergency telephone number

0086-731-85124338

Section 2: HAZARDS IDENTIFICATION

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).
GHS label elements not applicable
Hazard pictograms not applicable
Signal word danger
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, P370+P378 In case of fire: Use Class D dry chemical extinguishing agent for extinction.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical characterization: solid powder
CAS No.:7440-58-6
Description: Hafnium powder

Section 4: FIRST AID MEASURES

Description of first aid measures

If inhaled
Remove to fresh air, keep warm and quiet, give oxygen if breathing is difficult. Seek medical attention.

In case of skin contact
Remove contaminated clothing, brush material off skin, wash affected area with soap and water. Seek medical attention if irritation develops or persists.

In case of eye contact
Flush eyes with lukewarm water, including under upper and lower eyelids, for at least 15 minutes. Seek medical attention if irritation develops or persists.

If swallowed

Rinse mouth with water. Do not induce vomiting. Seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed
May cause irritation. See section 11 for more information.

Indication of any immediate medical attention and special treatment needed
No other relevant information available.

Section 5: FIRE FIGHTING MEASURES

Extinguishing media Suitable
Use Class D dry powder extinguishing agent or dry table salt.

Special hazards arising from the substance or mixture
Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source, is a potential dust explosion hazard. May release hafnium oxide fume if involved in a fire.

Advice for firefighters
Wear full face, self-contained breathing apparatus and full protective clothing

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Wear appropriate respiratory and protective equipment specified in section 8. Isolate spill area and provide ventilation. Avoid breathing dust or fume. Avoid contact with skin and eyes. Eliminate all sources of ignition.

Environmental precautions
Do not allow to enter drains or to be released to the environment.

Methods and materials for containment and cleaning up
Avoid dust formation. Use only non-sparking tools and natural bristle brushes. Do not push powder for long distances across the floor. Keep in small piles away from each other. Place in non-sparking or anti-static containers.

Section 7: HANDLING AND STORAGE

Precautions for safe handling
Handle in an enclosed, controlled process. Use non-sparking tools. Protect from sources of ignition.Avoid creating dust. Avoid breathing dust or fumes. Provide adequate ventilation if dusts are created. Avoid contact with skin and eyes. Wash thoroughly before eating or smoking. See section 8 for information on personal protection equipment.

Conditions for safe storage, including any incompatibilities
Store in a cool, dry area. Store material tightly sealed in properly labeled containers. Storage area should be free of combustibles and ignition sources. See section 10 for more information on incompatible materials.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure controls

Appropriate engineering controls
When working with finely divided powders, handle in a controlled, enclosed environment. Ensure adequate ventilation to maintain exposures below occupational limits. Whenever possible the use of local exhaust ventilation or other engineering controls is the preferred method of controlling exposure to airborne dust and fume to meet established occupational exposure limits. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Do not blow dust off clothing or skin with compressed air.

Personal protective equipment
Eye/face protection
In the case of particles coming in contact with eyes during processing, treat as with any foreign object.

Skin protection
Impermeable gloves, protective work clothing as necessary.

Respiratory protection
When particulates/fumes/gases are generated and if exposure limits are exceeded or irritation is experienced, proper approved respiratory protection should be worn.Positive-pressure supplied air respirators may be required for high airborne contaminat concentrations. Respiratory protection must be provided in accordance with current local regulations.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

a) Appearance: powder
b) Odor: Odorless
c) Odor Threshold: no data available
d) pH: N/A

e) Melting point/freezing point:2227±20℃
f) Initial boiling point and boiling range: 4602℃
g) Flash point: N/A
h) Evaporation rate: N/A
i) Flammability (solid, gas): Flammable solid
j) Upper/lower flammability or explosive limits: no data available
k) Vapor pressure: no data available
l) Vapor density: no data available
m) Relative density: 13.31 g/cc @ 20℃
n) Water solubility: insoluble
o) Partition coefficient - noctanol/water: no data available
p) Auto-ignition temperature: no data available
q) Decomposition temperature: no data available
r) Viscosity: N/A
s) Explosive properties: no data available
t) Oxidizing properties: no data available

Other safety information
No data available

Section 10: STABILITY AND REACTIVITY

Reactivity	No data available
Chemical stability	Stable under recommended storage conditions
Possibility of hazardous reactions	Dust dispersed in air may be explosive. Keep fine turnings completely dry, or very wet. If wet,the water content should be more than 25% by weight for maximum safety in handling. Severe explosions can result from ignition of hafnium powder or machining fines containing moisture in the concentration range of 5 to 10%.
Conditions to avoid	All sources of ignition. Dusting conditions.
Incompatible Conditions	Hydrofluoric acid, hydrofluoric-nitric acid mixture, fluorine, chlorine, bromine, iodine, halocarbons, carbon tetrachloride, carbon tetrafluoride, freons, nitryl-fluoride.
Hazardous Decomposition Products	Hafnium oxide fume.

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity：no data available
Inhalation: no data available Dermal: 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 mutagen city ： no data available
Carcinogenicity

IARC: Not identified as carcinogenic
NTP: Not identified as carcinogenic

Specific target organ toxicity - repeated exposure：no data available
Aspiration hazard ：no data available

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity	No further relevant information available.
Persistence and degradability	No information available.
Bioaccumulation	No information available.
Mobility	No information available.
Results of PBT and vPvB assessment	No information available.
Other adverse effects	Do not allow material to be released to the environment. No further relevant information available.

Section 13: DISPOSAL CONSIDERATIONS

Waste treatment methods
Product
Reuse or recycle material whenever possible. Dispose of in accordance with Federal, State and Local regulations.
Contaminated packaging
Dispose of in accordance with Federal, State and Local regulations.

Section 14: TRANSPORT INFORMATION

DOT (US)
Not regulated as dangerous goods.
IMDG
Not regulated as dangerous goods.
IATA
Not regulated as dangerous goods.

Section 15: REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components
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
No SARA Hazards

Section 16: OTHER INFORMATION

Disclaimer
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet