

Chemical Safety Data Sheet MSDS / SDS

HAFNIUM CARBIDE

Revision Date:2026-05-31 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name : HAFNIUM CARBIDE
CBnumber : CB0124513
CAS : 12069-85-1
EINECS Number : 235-114-1
Synonyms : hafnium carbide,Hafnium(IV) carbide

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.
Uses advised against : none

Company Identification

Company : Chemicalbook
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing
Telephone : 010-86108875

SECTION 2: Hazards identification

GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Warning

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/.../equipment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P370+P378 In case of fire: Use ... for extinction.

Hazard statements

H228 Flammable solid

SECTION 3: Composition/information on ingredients

Substance

Product name	: HAFNIUM CARBIDE
Synonyms	: hafnium carbide, Hafnium(IV) carbide
CAS	: 12069-85-1
EC number	: 235-114-1
MF	: CHf
MW	: 190.5

SECTION 4: First aid measures

General advice

Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

In case of eye contact

After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed

After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

Protection of first-aiders

For personal protection see section 8.

Notes to physician

No data available

SECTION 5: Firefighting measures

Suitable extinguishing media

Water Foam Carbon dioxide (CO₂) Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Specific hazards during fire fighting

Combustible. Development of hazardous combustion gases or vapours possible in the event of fire.

Hazardous combustion products

Nature of decomposition products not known.

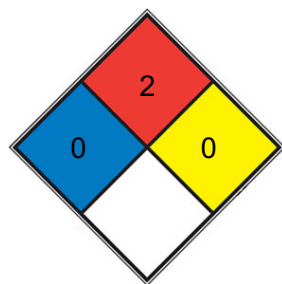
Specific extinguishing methods

Prevent fire extinguishing water from contaminating surface water or the ground water system.

Special protective equipment for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

NFPA 704



☒ HEALTH 0 Poses no health hazard, no precautions necessary and would offer no hazard beyond that of ordinary combustible materials

☒ FIRE 2 Must be moderately heated or exposed to relatively high ambient temperature before ignition can occur and multiple finely divided suspended solids that do not require heating before ignition can occur. Flash point between 37.8 and 93.3 °C (100 and 200 °F). (e.g. diesel fuel, [sulfur](#))

☒ REACT 0 Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, [N2](#))

☐ SPEC.

☐ HAZ.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. Advice for emergency responders: For personal protection see section 8.

Environmental precautions

Do not let product enter drains. Risk of explosion.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SECTION 7: Handling and storage

Handling

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Storage

Further information on storage conditions

Tightly closed. Keep away from heat and sources of ignition.

Storage class

4.1B, Flammable solid hazardous materials

Recommended storage temperature

Recommended storage temperature see product label.

SECTION 8: Exposure controls/personal protection

control parameter

Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

Engineering measures

No data available

Personal protective equipment

Respiratory protection

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type

Filter type P1

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Safety glasses

Skin and body protection

Flame retardant antistatic protective clothing.

Hand protection

Material

Nitrile rubber

Break through time

480 min

Glove thickness

0.11 mm

Protective index

Full contact

Manufacturer

KCL 741 L

Material

Nitrile rubber

Break through time

480 min

Glove thickness

0.11 mm

Protective index

Splash contact

Manufacturer

KCL 741 L

Remarks

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D- 36124 Eichenzell, Internet: www.kcl.de).

Hygiene measures

Change contaminated clothing. Wash hands after working with substance.

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

solid

Color

Gray

Odor

No data available

Odor Threshold

No data available

pH

No data available

Melting point/ range

2,930 °C

Boiling point/boiling range

No data available

Flash point

Not applicable

Evaporation rate

No data available

Flammability (solid, gas)

The substance or mixture is a flammable solid with the category 2.

Flammability (liquids)

No data available

Burning rate

No data available

Upper explosion limit / Upper flammability limit

No data available

Lower explosion limit / Lower flammability limit

No data available

Vapor pressure

No data available

Relative vapor density

No data available

Relative density

12.2 g/mL at 25 °C(lit.)

Density

12.2 g/mL (25 °C)

Water solubility

it is insoluble in water.

Partition coefficient: n-octanol/water

Not applicable for inorganic substances

Autoignition temperature

No data available

Decomposition temperature

No data available

Viscosity, dynamic

No data available

Viscosity, kinematic

No data available

Flow time

No data available

Explosive properties

No data available

Oxidizing properties

none

Molecular weight

190.50 g/mol

Particle characteristics Particle size

No data available

Physical state

Powder

SECTION 10: Stability and reactivity

Reactivity

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions

No data available

Conditions to avoid

no information available

Incompatible materials

No data available

Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Oral: No data available

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

Classified based on available data. For more details, see section 2

Serious eye damage/eye irritation

Classified based on available data. For more details, see section 2

Respiratory or skin sensitization

Classified based on available data. For more details, see section 2

Germ cell mutagenicity

Classified based on available data. For more details, see section 2

Carcinogenicity

Classified based on available data. For more details, see section 2

Reproductive toxicity

Classified based on available data. For more details, see section 2

Specific target organ toxicity - single exposure

Classified based on available data. For more details, see section 2

Specific target organ toxicity - repeated exposure

Classified based on available data. For more details, see section 2

Aspiration hazard

Classified based on available data. For more details, see section 2

11.2 Additional Information

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

SECTION 12: Ecological information

Ecotoxicity

No data available

Persistence and degradability

Components:

Hafnium monocarbide:

Biodegradability

Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulative potential

Components:

Hafnium monocarbide:

Partition coefficient: noctanol/water

Remarks: Not applicable for inorganic substances

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13: Disposal considerations

Disposal methods

Waste from residues

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

SECTION 14: Transport information

International Regulations

IATA-DGR

UN/ID No. : UN 3178

Proper shipping name : Flammable solid, inorganic, n.o.s.

(Hafnium monocarbide)

Class : 4.1

Packing group : II

Labels : Division 4.1 - Flammable solids

Packing instruction (cargo aircraft) : 448

Packing instruction (passenger aircraft) : 445

IMDG-Code

UN number : UN 3178

Proper shipping name : FLAMMABLE SOLID, INORGANIC, N.O.S.

(Hafnium monocarbide)

Class : 4.1

Packing group : II

Labels : 4.1

EmS Code : F-A, S-G

Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National regulation GB 6944/12268

UN number : UN 3178

Proper shipping name : FLAMMABLE SOLID, INORGANIC, N.O.S.

(Hafnium monocarbide)

Class : 4.1

Packing group : II

Labels : 4.1

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15: Regulatory information

National regulatory information

Law on the Prevention and Control of Occupational Diseases

Regulations on Safety Management of Hazardous Chemicals

Catalogue of Hazardous Chemicals

Hazardous Chemicals for Priority Management

under SAWS

Regulation of Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals

China Severely Restricted Toxic Chemicals for Import and Export

SECTION 16: Other information

Full text of other abbreviations

ACGIH

USA. ACGIH Threshold Limit Values (TLV)

ACGIH / TWA AIC - Australian Invent Transport by Land of Bra bw - Body weight; CMR Standard of the German List (Canada); ECx - Conc associated with x%respo Chemical Substances (Jap response; ERG - Emerge GLP - Good Laboratory P cer; IATA - International Construction and Equipm Half maximal inhibitory c tion; IECSC - Inventory o tional Maritime Dangerou Industrial Safety and H Standardization; KECl - K tration to 50 % of a test (Median Lethal Dose); MA lution from Ships; n.o.s. No Observed (Adverse) E fect Level; NOELR - No Norm; NTP - National Toxi icals; OECD - Organizatio fice of Chemical Safety a and Toxic

substance; PIC stances; (Q)SAR - (Quant (EC) No 1907/2006 of the Registration, Evaluation, Accelerating Decomposition Chemical Substance Inventory Thailand Existing Chemical States); UN - United Nations Transport of Dangerous Goods WHMIS - Workplace Hazardous Materials Information System

8-hour, time-weighted average concentration of Industrial Chemicals

ANTT - National Agency for Industrial Chemicals

ASTM - American Society for the Testing of Materials

- Carcinogen, Mutagen or Reproductive Toxicant

DIN Institute for Standardisation

DSL - Domestic Substances Notification associated with x% response

ELx - Loading rate

EmS - Emergency Schedule

ENCS - Existing and New Chemicals

ErCx - Concentration associated with x% growth rate in Response Guide

GHS - Globally Harmonized System

actice

IARC - International Agency for Research on Cancer Transport Association

IBC - International Code for the Construction of Ships carrying Dangerous Chemicals in Bulk

IC50 concentration

ICAO - International Civil Aviation Organization Existing Chemical Substances in China

IMDG - International Maritime Dangerous Goods

IMO - International Maritime Organization

ISHL Health Law (Japan)

ISO - International Organisation for Standardization Existing Chemicals Inventory

LC50 - Lethal Concentration

LD50 - Lethal Dose to 50% of a test population POL - International Convention for the Prevention of Pollution from Ships - Not Otherwise Specified

NCh - Chilean Norm

NO(A)EC Effect Concentration

NO(A)EL - No Observed (Adverse) Effect Loading Rate

NOM - Official Mexican Nomenclature Program

NZIoC - New Zealand Inventory of Chemicals for Economic Co-operation and Development

OPPTS - Office of Pollution Prevention and Control

PBT - Persistent, Bioaccumulative and Toxic - Philippines Inventory of Chemicals and Chemical Substances) Structure Activity Relationship

REACH - Regulation European Parliament and of the Council concerning the restriction and Restriction of Chemicals

SADT - Self-heating Temperature

SDS - Safety Data Sheet

TCSI - Taiwan Chemical Safety Information

TDG - Transportation of Dangerous Goods

TECI s Inventory

TSCA - Toxic Substances Control Act (United States)

UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods

vPvB - Very Persistent and Very Bioaccumulative

ous Materials Information System

Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the

appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.