

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 13.07.2010

Revision: 13.07.2010

1 Identification of substance

Product details

Trade name

Hafnium (IV) oxide

Stock number:

11836

Manufacturer/Supplier:

Alfa Aesar GmbH & Co.KG
Benzstrasse 3
D-76185 Karlsruhe / GermanyE-mail: gcat@matthey.com
www.alfa-chemcat.com

Informing department:

Product safety department.

Emergency information:

Giftnotruf Universität Mainz / Poison Information Center Mainz
www.giftinfo.uni-mainz.de Telefon: +49(0)6131/19240

2 Hazards identification

Hazard designation:

void

Information pertaining to particular dangers
for man and environment

Not applicable

GHS label elements

Void

3 Composition/information on ingredients

Chemical characterization:

Designation: (CAS#)

hafnium (IV) oxide (CAS# 12055-23-1); 100%

Identification number(s):

EINECS Number:

235-013-2

Additional information:

Hafnium is routinely found with a low level of zirconium since separation of the two elements is difficult.

4 First aid measures

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
Seek immediate medical advice.

After skin contact

Instantly wash with water and soap and rinse thoroughly.
Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult doctor.

After swallowing

Seek medical treatment.

5 Fire fighting measures

Suitable extinguishing agents

Use fire fighting measures that suit the environment.

Protective equipment:

Wear self-contained breathing apparatus.

Wear full protective suit.

6 Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Measures for environmental protection:

Ensure adequate ventilation

Measures for cleaning/collecting:

Do not allow material to be released to the environment without proper governmental permits.

Additional information:

Collect mechanically.

See Section 7 for information on safe handling

See section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

7 Handling and storage

Handling

Information for safe handling:

Keep containers tightly sealed.
Store in cool, dry place in tightly closed containers.
No special precautions necessary if used correctly.Information about protection against
explosions and fires:

No special measures required.

Storage

Requirements to be met by storerooms and
containers:

No special requirements.

Information about storage in one common
storage facility:

Not required.

Further information about storage
conditions:Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

8 Exposure controls and personal protection

Additional information about design of
technical systems:Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at
least 100 feet per minute.Components with critical values that require
monitoring at the workplace:Hafnium, metal and compounds as Hf
mg/m³

ACGIH TLV 0.5

Austria MAK 0.5

Belgium TWA 0.5

Denmark TWA 0.5

Finland TWA 0.5

France VME 0.5

Germany MAK 0.5

Korea TLV 0.5

Netherlands MAC-TGG 0.5

Norway TWA 0.5

Poland TWA 0.5

Switzerland MAK-W 0.5

United Kingdom TWA 0.5; 1.5-STEL

USA PEL 0.5

No data

Additional information:

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures should be adhered to in handling the chemicals.

Keep away from foodstuffs, beverages and food.

Instantly remove any soiled and impregnated garments.

Wash hands during breaks and at the end of the work.

Use breathing protection with high concentrations.

Safety glasses

Breathing equipment:

Eye protection:

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Body protection: Protective work clothing.

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9 Physical and chemical properties:**General Information**

Form: Powder
Colour: Whitish
Smell: Odourless

Change in condition
Melting point/Melting range: 2812°C
Boiling point/Boiling range: 5400°C
Sublimation temperature / start: Not determined

Flash point: Not applicable

Inflammability (solid, gaseous) Product is not inflammable.

Ignition temperature: Not determined

Decomposition temperature: Not determined

Danger of explosion: Product is not explosive.

Critical values for explosion:
Lower: Not determined
Upper: Not determined

Steam pressure: Not determined

Density at 20°C 9.68 g/cm³

Solubility in / Miscibility with Water: Insoluble

10 Stability and reactivity

Thermal decomposition / conditions to be avoided: No decomposition if used and stored according to specifications.
Materials to be avoided: Acids
Dangerous reactions: No dangerous reactions known
Dangerous products of decomposition: No dangerous decomposition products known

11 Toxicological information

Acute toxicity:
Primary irritant effect:
on the eye: Powder: irritant effect
Sensitization: No sensitizing effect known.
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:

Additional ecological information:
General notes: Generally not hazardous for water.
Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations

Product:
Recommendation Consult state, local or national regulations for proper disposal.
Hand over to disposers of hazardous waste.
Must be specially treated under adherence to official regulations.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

14 Transport information

Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)
ADR/RID-GGVS/E Class: None

Maritime transport IMDG/GGVSea:
IMDG/GGVSea Class: None
Marine pollutant: No

Air transport ICAO-TI and IATA-DGR:
ICAO/IATA Class: None

Transport/Additional information: Not dangerous according to the above specifications.

15 Regulatory information

Designation according to EC guidelines: Observe the normal safety regulations when handling chemicals
The product is not subject to identification regulations under EC Directives and the Ordinance on Hazardous Materials (GefStoffV).
National regulations
Information about limitation of use: For use only by technically qualified individuals.
Water hazard class: Generally not hazardous for water.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing data specification sheet: Health, Safety and Environmental Department.

Contact: Zachariah Holt

Abbreviations and acronyms: ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

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ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)

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