

Safety Data Sheet

according to 1907/2006/EC, Article 31

Revision: 13.07.2010

Printing date 13.07.2010

1 Identification of substance

Product details

Trade name

Hafnium iodide

Stock number:

35733

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:



C Corrosive

Information pertaining to particular dangers for man and environment
GHS label elements

R 34 Causes burns.

**Danger**

Prevention:

Response:

H314 - Causes severe skin burns and eye damage.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

3 Composition/information on ingredients

Chemical characterization:

Designation: (CAS#)

Additional information:

Hafnium iodide, anhydrous (CAS# 13777-23-6), 100%

Zirconium is routinely found with a low level of hafnium since separation of the two elements is difficult.

4 First aid measures

General information

After inhalation

Instantly remove any clothing soiled by the product.

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

After skin contact

Seek immediate medical advice.

Instantly wash with water and soap and rinse thoroughly.

After eye contact

Seek immediate medical advice.

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

After swallowing

Seek immediate medical advice.

5 Fire fighting measures

Suitable extinguishing agents

CO₂, sand, extinguishing powder. Do not use water.

For safety reasons unsuitable extinguishing agents

Water.

Special hazards caused by the material, its products of combustion or flue gases:

Can be released in case of fire:

Hydrogen iodide (HJ)

Reacts with water

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

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

Measures for cleaning/collecting:

Use neutralizing agent.

Dispose of contaminated material as waste according to item 13.

Ensure adequate ventilation.

Additional information:

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:

Handle under dry protective gas.

Keep containers tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation/exhaustion at the workplace.

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:

Store away from water.

Do not store together with acids.

Further information about storage conditions:

Store under dry inert gas.

Protect from humidity and keep away from water.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Store in a locked cabinet or with access restricted to technical experts or their assistants.

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

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	mg/m ³
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.
Avoid contact with the eyes and skin.

Breathing equipment:**Eye protection:**

Use breathing protection with high concentrations.

Safety glasses

Tightly sealed safety glasses.

Full face protection

Face protection

Body protection:

Protective work clothing.

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

Form:	Powder
Colour:	Orange Yellow
Smell:	Not determined

Change in condition	
Melting point/Melting range:	400°C ((vac/subl))
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined

Flash point: Not applicable**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:** Not determined**Solubility in / Miscibility with
Water:** Reacts**10 Stability and reactivity**

Thermal decomposition / conditions to be avoided: No decomposition if used and stored according to specifications.
Materials to be avoided: Acids
Water/moisture

Dangerous reactions: No dangerous reactions known
Dangerous products of decomposition: Hydrogen iodide (HI)
Metal oxide

11 Toxicological information

Acute toxicity:
Primary irritant effect:
on the skin: Corrosive effect on skin and mucous membranes.
Irritant for skin and mucous membranes.
on the eye: Strong corrosive effect.
Irritant effect.
Sensitization: No sensitizing effect known.
Additional toxicological information: Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
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: Water hazard class 1 (Self-assessment): slightly hazardous for water.
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
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.

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Recommended cleaning agent: Water, if necessary with cleaning agent.

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14 Transport information

Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)



ADR/RID-GGVS/E Class: 8 (C2) Corrosive substances.
 Kemler Number: 80
 UN-Number: 3260
 Packaging group: II
 Label: 8
 Designation of goods: 3260 CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Hafnium iodide)
 Limited quantities (LQ): LQ23
 Transport category: 2
 Tunnel restriction code: E

Maritime transport IMDG/GGVSea:



IMDG/GGVSea Class: 8
 UN Number: 3260
 Label: 8
 Packaging group: II
 Marine pollutant: No
 Segregation groups: Acids
 Correct technical name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Hafnium iodide)

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class: 8
 UN/ID Number: 3260
 Label: 8
 Packaging group: II
 Correct technical name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Hafnium iodide)

UN "Model Regulation":

UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S., 8, II

15 Regulatory information

Designation according to EC guidelines:

Code letter and hazard designation of product:



C Corrosive

Risk phrases:

34 Causes burns.

Safety phrases:

20 When using do not eat or drink.
 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

National regulations

Information about limitation of use:

Employment restrictions concerning young persons must be observed.
 For use only by technically qualified individuals.

Water hazard class:

Water hazard class 1 (Self-assessment): slightly 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

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)

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

CAS: Chemical Abstracts Service (division of the American Chemical Society)