

SECTION 1: CHEMICAL PRODUCT and COMPANY IDENTIFICATION

Product Name: Hafnium hydride 99%

Product Code: H00092

Supplier: Pfaltz & Bauer, Inc.
172 E. Aurora Street
Waterbury, CT 06708 USA

Phone: 203-574-0075

FAX: 203-574-3181

Emergency Phone: INFOTRAC, US: 1-800-535-5053
INFOTRAC, INTERNATIONAL: +1-352-323-3500

SECTION 2: HAZARDS IDENTIFICATION

Statement of Hazard: Dangerous when wet, Flammable solid, Irritant, Reacts violently with water, Respiratory irritant

Acute Health Hazard: Irritant to eyes, skin, mucous membranes and respiratory system.
May be harmful by ingestion, skin absorption and inhalation.

Chronic Health Hazard: Not Available

HMIS Rating: H: 1 F: 2 P: 2

NFPA Rating: H: 1 F: 2 R: 2

To the best of our knowledge, the toxicological properties of this chemical have not been thoroughly investigated. Use appropriate procedures and precautions to prevent or minimize exposure.

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):

GHS Classification in accordance with Regulation (EC) No 1272/2008:

Acute toxicity, dermal (Category 4), H312
Acute toxicity, inhalation (Category 4), H332
Acute toxicity, oral (Category 4), H302
Flammable solids (Category 1), H228
Serious eye damage/eye irritation (Category 2A), H319
Skin corrosion/irritation (Category 2), H315
Specific target organ toxicity, single exposure; Respiratory tract irritation (Category 3), H335
Substances and mixtures which, in contact with water, emit flammable gases (Category 2), H261

Pictogram:



Signal Word:

Danger

Hazard Statement(s):

H228 Flammable solid.
H261 In contact with water releases flammable gas.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.

Precautionary Statement(s):

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
P223 Keep away from any possible contact with water, because of violent reaction and possible flash fire.
P231+P232 Handle under inert gas. Protect from moisture.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/[
]/equipment.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312 IF SWALLOWED: call a POISON CENTER or doctor/physician IF you feel unwell.
P302+P352 IF ON SKIN: wash with plenty of soap and water.
P304+P340 IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313 IF SKIN irritation occurs: Get medical advice/attention.

Supplemental Statement(s):

EUH014 Reacts violently with water

SECTION 3: COMPOSITION/INFORMATION on INGREDIENTS

Chemical Name:

Hafnium hydride 99%

CAS Number:

12770-26-2

MDL Number:

MFCD00085337

EINECS Number: 235-812-6

Beilstein Registry Number: Not Available

Molecular Formula: HfH₂

Molecular Weight: 180.51

Content: As specified in product name.

SECTION 4: FIRST AID MEASURES

Eye Contact: Flush eyes with large amounts of water for fifteen minutes. Separate eyelids with fingers. If irritation persists, seek medical attention.

Skin Contact: Wash skin with soap and water. If irritation persists, seek medical attention.

Ingestion: Do not induce vomiting. Seek medical attention.

Inhalation: Move to a fresh air environment. Contact a physician if breathing becomes difficult.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point (°C): Not Available

Explosion Limits: Not Available

Auto Ignition Temperature (°C): Not Available

Extinguishing Media: Carbon dioxide, dry chemical powder or alcohol-resistant foam. Do not use water spray.

Protective Equipment: Wear self-contained respirator and fully protective impervious suit.

Specific Hazards: May emit hazardous fumes under fire conditions. Reacts violently with water.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Protection: Wear a self-contained breathing apparatus, rubber boots and gloves, and disposable coveralls. Dispose of coveralls after use. Remove from ignition sources if safe to do so. Follow emergency response plan and contact proper authorities if needed. Keep unprotected persons away.

Environmental Protection:

Keep spills out of sewers and bodies of water. Dike and contain the spill with inert material. Absorb on sand, vermiculite or diatomite. Transfer material to a container for disposal or recovery. Ventilate area and wash spill site after material pickup is complete.

SECTION 7: HANDLING and STORAGE

Handling and Storage:

Avoid breathing dust, vapor, mist or gas. Avoid contact with skin and eyes. Avoid prolonged or repeated exposure. Use only in a chemical fume hood. Open and handle container with care. Keep ignition sources away.

Store in a tightly closed container in a dry, well-ventilated place. Store under inert gas. Store under nitrogen.

Sensitivities:

Moisture

Storage Temperature (°C):

15 to 30

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

Use product in a well ventilated area or under a fume hood. Use proper lab equipment while handling this product. Keep away from incompatible materials for possible risk of hazardous reaction.

Eye Protection:

Wear appropriate protective eyeglass or chemical safety goggles. Make sure that there is an eyewash station in your vicinity.

Skin Protection:

Wear impervious gloves and protective clothing.

Respiratory Protection:

Use a NIOSH approved respirator when exposure limits are exceeded or if irritation or other symptoms are experienced.

Exposure Limits:

<u>Country</u>	<u>Source</u>	<u>Type</u>	<u>Value</u>
USA	ACGIH	TWA	Not Available
USA	OSHA	STEL	Not Available
USA	OSHA	PEL	Not Available

SECTION 9: PHYSICAL and CHEMICAL PROPERTIES

Appearance:

Solid

Odor:

Not Available

Odor Threshold:

Not Available

Flash Point (°C):

Not Available

<u>Auto Ignition Temperature (°C):</u>	Not Available
<u>UEL % by Volume:</u>	Not Available
<u>LEL % by Volume:</u>	Not Available
<u>Melting Point (°C):</u>	Not Available
<u>Boiling Point (°C):</u>	Not Available
<u>Evaporation Rate:</u>	Not Available
<u>pH Value:</u>	Not Available
<u>Density (g/cm³):</u>	Not Available
<u>Refractive Index (n^{20D}):</u>	Not Available
<u>Viscosity:</u>	Not Available
<u>Solubility in Water:</u>	Not Available
<u>Solubility in Other:</u>	Not Available
<u>Vapor Pressure (mmHg):</u>	Not Available
<u>Vapor Density (Air=1):</u>	Not Available

SECTION 10: STABILITY and REACTIVITY

<u>Stability:</u>	Stable under normal temperatures and pressures.
<u>Incompatibility:</u>	Not Available
<u>Reactivity:</u>	Product may react with incompatible materials to release other hazardous substances.
<u>Conditions to Avoid:</u>	Heat, flame, sparks, other ignition sources.
<u>Hazardous Decomposition Products:</u>	Hafnium oxides

SECTION 11: TOXICOLOGICAL INFORMATION

<u>RTECS Reference:</u>	Not Available
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<u>Target Organs:</u>	Not Available
<u>Toxicity Data:</u>	Not Available
<u>Carcinogenicity:</u>	National Toxicology Program (NTP) listed: Not Available International Agency for Research on Cancer (IARC) listed: Not Available
<u>Potential Symptoms:</u>	Not Available

SECTION 12: ECOLOGICAL INFORMATION

<u>Toxicity:</u>	Not Available
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SECTION 13: DISPOSAL CONSIDERATIONS

Contact a licensed professional waste disposal service. Dispose in a manner consistent with federal, state and local environmental regulations.

SECTION 14: TRANSPORT INFORMATION

<u>DOT Shipping Name:</u>	Water-Reactive Solid, Flammable, N.O.S.
<u>DOT UN Number:</u>	UN3132
<u>DOT Hazard Class:</u>	Class 4.3, 4.1
<u>DOT Packing Group:</u>	PGII
<u>IMDG Shipping Name:</u>	Water-Reactive Solid, Flammable, N.O.S.
<u>IMDG UN Number:</u>	UN3132
<u>IMDG Hazard Class:</u>	Class 4.3, 4.1
<u>IMDG Packing Group:</u>	PGII
<u>Marine Pollutant:</u>	No
<u>IATA Shipping Name:</u>	Water-Reactive Solid, Flammable, N.O.S.
<u>IATA UN Number:</u>	UN3132
<u>IATA Hazard Class:</u>	Class 4.3, 4.1
<u>IATA Packing Group:</u>	PGII

SECTION 15: REGULATORY INFORMATION

United States

Toxic Substance Control Act (TSCA) listed: Yes

Superfund Amendments and Reauthorization Act (SARA 302) listed: No

Superfund Amendments and Reauthorization Act (SARA 311/312) listed: No

Superfund Amendments and Reauthorization Act (SARA 313) listed: No

European Union

European Inventory of Existing Chemical Substances (EINECS): 235-812-6

GHS Classification in accordance with Regulation (EC) No 1272/2008: Yes

Canada

Canadian Domestic Substances List (DSL) listed: No

Canadian Non-Domestic Substances List (NDSL) listed: Yes

SECTION 16: OTHER INFORMATION

Date Prepared: 6/21/2023

The information above is presented in good faith. It is believed to be accurate and represents the best information currently available to us. However, we make no warranty with respect to such information and we assume no liability resulting from its use. The user should consider this information as a supplement to other information that may be available and make independent judgement to ensure proper use to protect the health and safety of employees and the environment. Pfaltz and Bauer shall not be held liable for any damage resulting from handling or from contact with the above product.