

1 Identification**Product identifier****Product name:** **Barium hydride****Stock number:** 35107**CAS Number:**

13477-09-3

EC number:

236-763-3

Index number:

056-002-00-7

Relevant identified uses of the substance or mixture and uses advised against.**Identified use:** SU24 Scientific research and development**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**Alfa Aesar
Thermo Fisher Scientific Chemicals, Inc.30 Bond Street
Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency telephone number:**

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification**Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)**

GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H332 Harmful if inhaled.

Hazards not otherwise classified No information known.**Label elements****GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)**Hazard pictograms**

GHS07

Signal word Warning**Hazard statements**

H302+H332 Harmful if swallowed or if inhaled.

Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 Wash thoroughly after handling.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/.../if you feel unwell.

P312 Call a POISON CENTER/doctor/.../if you feel unwell.

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

WHMIS classification

B6 - Reactive flammable material

**Classification system****HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH 3 Health (acute effects) = 3

FIRE 2 Flammability = 2

REACTIVITY 2 Physical Hazard = 2

Other hazards**Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients**Chemical characterization: Substances****CAS# Description:**

13477-09-3 Barium hydride

Identification number(s):**EC number:** 236-763-3**Index number:** 056-002-00-7**4 First-aid measures****Description of first aid measures****After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Product name: Barium hydride

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Seek immediate medical advice.
After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor.
After swallowing Seek medical treatment.
Information for doctor
Most important symptoms and effects, both acute and delayed No further relevant information available.
Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

Extinguishing media
For safety reasons unsuitable extinguishing agents Water
Special hazards arising from the substance or mixture
 Contact with water releases hydrogen (explosive).
 If this product is involved in a fire, the following can be released:
 Barium oxide
Advice for firefighters
Protective equipment:
 Wear self-contained respirator.
 Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
 Wear protective equipment. Keep unprotected persons away.
 Ensure adequate ventilation
 Keep away from ignition sources
Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.
Methods and material for containment and cleaning up:
 Keep away from ignition sources.
 Dispose of contaminated material as waste according to section 13.
 Ensure adequate ventilation.
 Do not flush with water or aqueous cleansing agents
Prevention of secondary hazards: Keep away from ignition sources.
Reference to other sections
 See Section 7 for information on safe handling
 See Section 8 for information on personal protection equipment.
 See Section 13 for disposal information.

7 Handling and storage

Handling
Precautions for safe handling
 Keep container tightly sealed.
 Store in cool, dry place in tightly closed containers.
 Ensure good ventilation at the workplace.
Information about protection against explosions and fires: Protect from humidity and water.
Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: No information known.
Further information about storage conditions:
 Keep container tightly sealed.
 Store in cool, dry conditions in well sealed containers.
Specific end use(s) No further relevant information available.

8 Exposure controls/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.

Control parameters
Components with limit values that require monitoring at the workplace:

Barium, and soluble compounds, as Ba
 mg/m³

ACGIH TLV	0.5; Not classified as a human carcinogen
Austria MAK	0.5
Belgium TWA	0.5
Denmark TWA	0.5
Finland TWA	0.5
Germany MAK	0.5 (total dust)
Hungary	0.5-STEL
Ireland TWA	0.5
Korea TLV	0.5
Netherlands MAC-TGG	0.5
Norway TWA	0.5
Poland TWA	0.5; 1.5-STEL
Sweden TWA	0.5
Switzerland MAK-W	0.5
United Kingdom LTEL	0.5
USA PEL	0.5

13477-09-3 Barium hydride (100.0%)

PEL (USA)	Long-term value: 0.5 mg/m ³ as Ba
REL (USA)	Long-term value: 0.5 mg/m ³ as Ba
TLV (USA)	Long-term value: 0.5 mg/m ³ as Ba

Additional information: No data

Exposure controls
Personal protective equipment
General protective and hygienic measures
 The usual precautionary measures for handling chemicals should be followed.
 Keep away from foodstuffs, beverages and feed.

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USA

Product name: Barium hydride

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Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
Maintain an ergonomically appropriate working environment.
Breathing equipment: Use suitable respirator when high concentrations are present.

Protection of hands:

Impervious gloves
Check protective gloves prior to each use for their proper condition.
The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Eye protection:

Safety glasses
Full face protection

Body protection: Protective work clothing.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form: Powder
Color: Grey
Odor: Not determined
Odor threshold: Not determined.

pH-value: Not applicable.

Change in condition

Melting point/Melting range: 375 °C (707 °F) (dec)
Boiling point/Boiling range: Not determined
Sublimation temperature / start: Not determined

Flash point: Not applicable
Flammability (solid, gaseous): Contact with water liberates extremely flammable gases.
Ignition temperature: Not determined
Decomposition temperature: Not determined
Auto igniting: Not determined.

Danger of explosion: Not determined.
Explosion limits:
Lower: Not determined
Upper: Not determined
Vapor pressure: Not applicable.
Density at 20 °C (68 °F): 4.21 g/cm³ (35.132 lbs/gal)
Relative density: Not determined.
Vapor density: Not applicable.
Evaporation rate: Not applicable.
Solubility in / Miscibility with Water: Reacts
Contact with water releases flammable gases
Partition coefficient (n-octanol/water): Not determined.
Viscosity:
dynamic: Not applicable.
kinematic: Not applicable.
Other information: No further relevant information available.

10 Stability and reactivity

Reactivity: In contact with water releases flammable gases which may ignite spontaneously.
Chemical stability: Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.
Possibility of hazardous reactions: Contact with water releases flammable gases
Conditions to avoid: No further relevant information available.
Incompatible materials:
No information known.
Water/moisture
Hazardous decomposition products:
Hydrogen
Barium oxide

11 Toxicological information

Information on toxicological effects

Acute toxicity:

Harmful if inhaled.
Harmful if swallowed.
LD/LC50 values that are relevant for classification: No data
Skin irritation or corrosion: Irritant to skin and mucous membranes.
Eye irritation or corrosion: Irritating effect.
Sensitization: No sensitizing effects known.
Germ cell mutagenicity: No effects known.

Carcinogenicity:

EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.
EPA-NL: Not likely to be carcinogenic to humans.
ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.

Reproductive toxicity: No effects known.
Specific target organ system toxicity - repeated exposure: No effects known.
Specific target organ system toxicity - single exposure: No effects known.
Aspiration hazard: No effects known.

Subacute to chronic toxicity:

Barium compounds may cause severe gastroenteritis, including abdominal pain, vomiting and diarrhea, tremors, faintness, paralysis of the arms and legs, and slow or irregular heartbeat. Severe cases may produce collapse and death due to respiratory failure. Soluble barium compounds are more likely to cause these effects than insoluble compounds. Inhalation of fumes may cause sore throat, coughing, labored breathing, and irritation of the respiratory tract as well as the above symptoms.

Subacute to chronic toxicity: No effects known.

Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

Product name: **Barium hydride**

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12 Ecological information

Toxicity

Aquatic toxicity: No further relevant information available.

Persistence and degradability: No further relevant information available.

Bioaccumulative potential: No further relevant information available.

Mobility in soil: No further relevant information available.

Additional ecological information:

General notes:

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

Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.

Avoid transfer into the environment.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects: No further relevant information available.

13 Disposal considerations

Waste treatment methods

Recommendation: Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

14 Transport information

UN-Number

DOT, IMDG, IATA

UN1409

UN proper shipping name

DOT

IMDG, IATA

Metal hydrides, water reactive, n.o.s. (barium hydride)

METAL HYDRIDES, WATER-REACTIVE, N.O.S. (barium hydride)

Transport hazard class(es)

DOT



Class

Label

Class

Label

IMDG, IATA

4.3 Substances which, in contact with water, emit flammable gases.

4.3

4.3 (W2) Substances which, in contact with water, emit flammable gases

4.3



Class

Label

4.3 Substances which, in contact with water, emit flammable gases.

4.3

Packing group

DOT, IMDG, IATA

I

Environmental hazards:

Not applicable.

Special precautions for user

Warning: Substances which, in contact with water, emit flammable gases

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

Transport/Additional information:

DOT

Marine Pollutant (DOT):

Item:

No

UN "Model Regulation":

UN1409, Metal hydrides, water reactive, n.o.s. (barium hydride), 4.3, I

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

GHS label elements: The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms



GHS07

Signal word:

Warning

Hazard statements

H302+H332 Harmful if swallowed or if inhaled.

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National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Non-Domestic Substances List (NDSL).

SARA Section 313 (specific toxic chemical listings)

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California Proposition 65

Prop 65 - Chemicals known to cause cancer: Substance is not listed.

Prop 65 - Developmental toxicity: Substance is not listed.

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USA

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Prop 65 - Developmental toxicity, female Substance is not listed.

Prop 65 - Developmental toxicity, male Substance is not listed.

Information about limitation of use:

For use only by technically qualified individuals.

This product contains barium and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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 SDS: Global Marketing Department

Date of preparation / last revision 11/24/2015 / -

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)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

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

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

vPvB: very Persistent and very Bioaccumulative

ACGIH: American Conference of Governmental Industrial Hygienists (USA)

OSHA: Occupational Safety and Health Administration (USA)

NTP: National Toxicology Program (USA)

IARC: International Agency for Research on Cancer

EPA: Environmental Protection Agency (USA)