

SAFETY DATA SHEET

1. Identification

Product identifier: BARIUM HYDROXIDE

Other means of identification

Product No.: 1006

Recommended use and restriction on use

Recommended use: Not available.

Restrictions on use: Not known.

Details of the supplier of the safety data sheet

Manufacturer

Company Name: Avantor Performance Materials, Inc.
Address: 3477 Corporate Parkway, Suite 200
Center Valley, PA 18034

Telephone: Customer Service: 855-282-6867

Fax:
Contact Person: Environmental Health & Safety
E-mail: info@avantormaterials.com

Emergency telephone number:

24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

2. Hazard(s) identification

Hazard Classification

Health Hazards

Acute toxicity (Oral)	Category 4
Acute toxicity (Inhalation - dust and mist)	Category 4
Skin Corrosion/Irritation	Category 1B
Serious Eye Damage/Eye Irritation	Category 1

Label Elements

Hazard Symbol:



Signal Word: Danger

Hazard Statement: Harmful if swallowed.
Harmful if inhaled.
Causes severe skin burns and eye damage.

Precautionary Statement

- Prevention:** Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dust/fume/gas/mist/vapors Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
- Response:** IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Storage:** Store locked up.
- Disposal:** Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
- Other hazards which do not result in GHS classification:** None.

3. Composition/information on ingredients

Substances

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
Barium Hydroxide Octahydrate		12230-71-6	90 - 100%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

- General information:** Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.
- Ingestion:** Rinse mouth thoroughly. Call a POISON CENTER or doctor/physician if you feel unwell.
- Inhalation:** Move to fresh air. Get medical attention if symptoms persist.
- Skin Contact:** Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse.
- Eye contact:** Rinse immediately with plenty of water. Get medical attention if any discomfort continues.

Most important symptoms/effects, acute and delayed

Symptoms: Irritating to eyes, respiratory system and skin. May cause burns.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General Fire Hazards: No unusual fire or explosion hazards noted.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Keep unauthorized personnel away. Use personal protective equipment. See Section 8 of the SDS for Personal Protective Equipment.

Methods and material for containment and cleaning up: Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination.

Notification Procedures: Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling: Use personal protective equipment as required. Avoid contact with eyes, skin, and clothing. Avoid inhalation of dust. Wash thoroughly after handling. Do not eat, drink or smoke when using the product. See Section 8 of the SDS for Personal Protective Equipment.

Conditions for safe storage, including any incompatibilities: Keep containers tightly closed. Store in cool, dry place. Store in a well-ventilated place.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	type	Exposure Limit Values	Source
BARIUM HYDROXIDE - as Ba	TWA	0.5 mg/m ³	US. ACGIH Threshold Limit Values (2011)
	REL	0.5 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	0.5 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)

	TWA	0.5 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
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Appropriate Engineering Controls No data available.

Individual protection measures, such as personal protective equipment

- General information:** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.
- Eye/face protection:** Wear safety glasses with side shields (or goggles). Use tight fitting goggles if dust is generated.
- Skin Protection**
- Hand Protection:** Wear protective gloves.
- Other:** Wear suitable protective clothing.
- Respiratory Protection:** In case of inadequate ventilation use suitable respirator.
- Hygiene measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower.

9. Physical and chemical properties

Appearance

- Physical state:** solid
- Form:** Crystals
- Color:** White
- Odor:** Odorless
- Odor threshold:** No data available.
- pH:** No data available.
- Melting point/freezing point:** 78 °C
- Initial boiling point and boiling range:** 780 °C
- Flash Point:** not applicable
- Evaporation rate:** No data available.
- Flammability (solid, gas):** No data available.
- Upper/lower limit on flammability or explosive limits**
- Flammability limit - upper (%):** No data available.
- Flammability limit - lower (%):** No data available.
- Explosive limit - upper (%):** No data available.
- Explosive limit - lower (%):** No data available.
- Vapor pressure:** No data available.
- Vapor density:** No data available.
- Relative density:** 2.18 (25 °C)
- Solubility(ies)**
- Solubility in water:** 56 g/l (15 °C)
- Solubility (other):** No data available.
- Partition coefficient (n-octanol/water):** No data available.

Auto-ignition temperature: No data available.
Decomposition temperature: No data available.
Viscosity: No data available.

Other information

Bulk density: 0.9 - 1.1 kg/m³
Molecular weight: 315.47 g/mol (BaH₂O₂·8H₂O)

10. Stability and reactivity

Reactivity: No dangerous reaction known under conditions of normal use.
Chemical Stability: Material is stable under normal conditions.
Possibility of Hazardous Reactions: Hazardous polymerization does not occur.
Conditions to Avoid: Contact with incompatible materials. Contact with air.
Incompatible Materials: Strong oxidizing agents. Acids.
Hazardous Decomposition Products: None known.

11. Toxicological information

Information on likely routes of exposure

Ingestion: Harmful if swallowed.
Inhalation: Harmful if inhaled.
Skin Contact: Causes skin burns.
Eye contact: May cause chemical eye burns.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral Product: LD 50 (Rat): 308 mg/kg

Dermal Product: No data available.

Inhalation Product: No data available.

Repeated dose toxicity Product: No data available.

Skin Corrosion/Irritation Product: Causes skin burns.

Serious Eye Damage/Eye Irritation Product: May cause chemical eye burns.

Respiratory or Skin Sensitization Product: Not a skin sensitizer.

Carcinogenicity

Product: This substance has no evidence of carcinogenic properties.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):
No carcinogenic components identified

Germ Cell Mutagenicity

In vitro
Product: No mutagenic components identified

In vivo
Product: No mutagenic components identified

Reproductive toxicity
Product: No components toxic to reproduction

Specific Target Organ Toxicity - Single Exposure
Product: None known.

Specific Target Organ Toxicity - Repeated Exposure
Product: None known.

Aspiration Hazard
Product: Not classified

Other effects: None known.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Chronic hazards to the aquatic environment:

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Toxicity to Aquatic Plants
Product: No data available.

Persistence and Degradability

Biodegradation Product: There are no data on the degradability of this product.

BOD/COD Ratio Product: No data available.

Bioaccumulative Potential Bioconcentration Factor (BCF) Product: No data available on bioaccumulation.

Partition Coefficient n-octanol / water (log Kow) Product: No data available.

Mobility in Soil: No data available.

Other Adverse Effects: The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

13. Disposal considerations

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws.

Contaminated Packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN Number: UN 2923
 UN Proper Shipping Name: Corrosive solids, toxic, n.o.s.(BARIUM HYDROXIDE, OCTAHYDRATE)
 Transport Hazard Class(es)
 Class(es): 8, 6.1
 Label(s): 8, 6.1
 Packing Group: III
 Marine Pollutant: Not a Marine Pollutant
 Special precautions for user: –

IMDG

UN Number: UN 2923
 UN Proper Shipping Name: CORROSIVE SOLID, TOXIC, N.O.S.(BARIUM HYDROXIDE, OCTAHYDRATE)
 Transport Hazard Class(es)
 Class(es): 8, 6.1
 Label(s): 8, 6.1
 EmS No.: F-A, S-B
 Packing Group: III
 Marine Pollutant: Not a Marine Pollutant
 Special precautions for user: –

IATA

UN Number: UN 2923
 Proper Shipping Name: Corrosive solid, toxic, n.o.s.(BARIUM HYDROXIDE, OCTAHYDRATE)
 Transport Hazard Class(es):
 Class(es): 8, 6.1
 Label(s): 8, 6.1
 Marine Pollutant: Not a Marine Pollutant
 Packing Group: III
 Special precautions for user: -

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
 None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

<u>Chemical Identity</u>	<u>Reportable quantity</u>
BARIUM HYDROXIDE	1000 lbs.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
 Acute (Immediate)

SARA 302 Extremely Hazardous Substance
 None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

<u>Chemical Identity</u>	<u>Reportable quantity</u>
BARIUM HYDROXIDE	1000 lbs.

SARA 311/312 Hazardous Chemical

<u>Chemical Identity</u>	<u>Threshold Planning Quantity</u>
BARIUM HYDROXIDE	10000 lbs

SARA 313 (TRI Reporting)

<u>Chemical Identity</u>	<u>Reporting threshold for other users</u>	<u>Reporting threshold for manufacturing and processing</u>
BARIUM HYDROXIDE	10000 lbs	25000 lbs.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
 None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
 None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65
 No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act

<u>Chemical Identity</u>
BARIUM HYDROXIDE

US. Massachusetts RTK - Substance List
 No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances

No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK

Chemical Identity

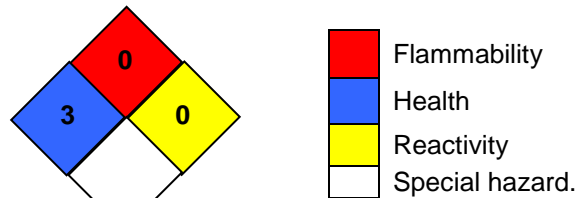
BARIUM HYDROXIDE

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	On or in compliance with the inventory
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

16. Other information, including date of preparation or last revision

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Issue Date:	03-26-2015
Revision Date:	No data available.
Version #:	1.0
Further Information:	No data available.

Disclaimer:

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