

Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: December 11, 2019

1 Identification

- **Product identifier**
- **Trade name: Barium Hydroxide, Octahydrate Reagent Grade**
- **Product code:** S25188A
- **Recommended use and restriction on use**
- **Recommended use:** Laboratory chemicals
- **Restrictions on use:** No relevant information available.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
AquaPhoenix Scientific, Inc.
860 Gitts Run Road
Hanover, PA 17331
Phone: (717)632-1291
Toll-Free: (866)632-1291
info@aquaphoenixsci.com
- **Distributor:**
Fisher Science Education
6771 Silver Crest Road
Nazareth, PA 18064
(800) 955-1177
- **Emergency telephone number:**
ChemTel Inc.
(800)255-3924 (North America)
+1 (813)248-0585 (International)

2 Hazard(s) identification

- **Classification of the substance or mixture**
Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H332 Harmful if inhaled.
Skin Corr. 1A H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

- **Label elements**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms:**



GHS05 GHS07

- **Signal word:** Danger
- **Hazard statements:**
H302+H332 Harmful if swallowed or if inhaled.
H314 Causes severe skin burns and eye damage.
- **Precautionary statements:**
P260 Do not breathe dusts or mists.
P264 Wash thoroughly after handling.

(Cont'd. on page 2)

Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: December 11, 2019

Trade name: Barium Hydroxide, Octahydrate Reagent Grade

(Cont'd. of page 1)





P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves and eye protection.
P301+P312	If swallowed: Call a poison center/doctor if you feel unwell.
P301+P330+P331	If swallowed: Rinse mouth. Do NOT induce vomiting.
P302+P352	If on skin: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep 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.
P308+P311	IF exposed or concerned: Call a poison center/doctor.
P363	Wash contaminated clothing before reuse.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Other hazards** There are no other hazards not otherwise classified that have been identified.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Components:**

12230-71-6	barium hydroxide octahydrate  Skin Corr. 1A, H314; Eye Dam. 1, H318  Acute Tox. 4, H302; Acute Tox. 4, H332	95%
17194-00-2	barium hydroxide  Skin Corr. 1A, H314; Eye Dam. 1, H318  Acute Tox. 4, H302; Acute Tox. 4, H332	5%

· **Additional information:** For the wording of the listed Hazard Statements, refer to section 16.

4 First-aid measures

· **Description of first aid measures**

· **After inhalation:**

Supply fresh air.

Seek immediate medical advice.

Provide oxygen treatment if affected person has difficulty breathing.

· **After skin contact:**

Brush off loose particles from skin.

Immediately rinse with water.

Seek immediate help for blistering or open wounds.

Seek medical treatment if any skin damage has occurred.

· **After eye contact:**

Protect unharmed eye.

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:**

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; immediately call for medical help.

(Cont'd. on page 3)

Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: December 11, 2019

Trade name: Barium Hydroxide, Octahydrate Reagent Grade

(Cont'd. of page 2)

- **Most important symptoms and effects, both acute and delayed:**
 - Breathing difficulty
 - Coughing
 - Strong caustic effect on skin and mucous membranes.
- **Danger:**
 - Causes serious eye damage.
 - Danger of gastric perforation.
- **Indication of any immediate medical attention and special treatment needed:**
 - Medical supervision for at least 48 hours.
 - If necessary oxygen respiration treatment.
 - If medical advice is needed, have product container or label at hand.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents:** No relevant information available.
- **Special hazards arising from the substance or mixture** No relevant information available.
- **Advice for firefighters**
- **Protective equipment:**
 - Wear self-contained respiratory protective device.
 - Wear fully protective suit.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
 - Wear protective equipment. Keep unprotected persons away.
 - Ensure adequate ventilation.
 - For large spills, use respiratory protective device against the effects of fumes/dust/aerosol.
- **Environmental precautions** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up**
 - Sweep up and place into an appropriate container.
 - Clean up spills immediately, observing the precautions in the personal protective equipment of Section 8.
 - Avoid generating dust. Prevent product from entering any drains, sewers or water sources.
 - Send for recovery or disposal in suitable receptacles.
- **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:** Use only in well ventilated areas.
- **Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:**

(Cont'd. on page 4)

Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: December 11, 2019

Trade name: Barium Hydroxide, Octahydrate Reagent Grade

(Cont'd. of page 3)

Storage area should be dry and well-ventilated.

· **Information about storage in one common storage facility:**

Store away from foodstuffs.

Do not store together with acids.

· **Further information about storage conditions:** Keep containers tightly sealed.

· **Specific end use(s)** No relevant information available.

8 Exposure controls/personal protection

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

12230-71-6 barium hydroxide octahydrate

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
EL (Canada)	Long-term value: 0.5 mg/m ³ as Ba
LMPE (Mexico)	Long-term value: 0.5 mg/m ³ A4; como Ba

17194-00-2 barium hydroxide

PEL (USA)	Long-term value: 0.5 mg/m ³ as Ba
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TLV (USA)	Long-term value: 0.5 mg/m ³ as Ba
EL (Canada)	Long-term value: 0.5 mg/m ³ as Ba
LMPE (Mexico)	Long-term value: 0.5 mg/m ³ A4; como Ba

· **Exposure controls**

· **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Do not breathe dust.

· **Engineering controls:** Provide adequate ventilation.

· **Breathing equipment:** A NIOSH approved dust respirator should be used for operations generating dust.

· **Protection of hands:**

(Cont'd. on page 5)

Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: December 11, 2019

Trade name: Barium Hydroxide, Octahydrate Reagent Grade

(Cont'd. of page 4)



Protective gloves

· **Material of gloves**

Nitrile rubber, NBR

Butyl rubber, BR

Neoprene gloves

Natural rubber, NR

Sensibilization by the components in the glove materials is possible.

· **Eye protection:**

Contact lenses should not be worn.



Safety glasses

Follow relevant national guidelines concerning the use of protective eyewear.

· **Body protection:** Protective work clothing

· **Limitation and supervision of exposure into the environment**

No relevant information available.

· **Risk management measures** No relevant information available.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **Appearance:**

Form: Crystalline powder

Color: White

· **Odor:** None

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Melting point/Melting range:** Not determined.

· **Boiling point/Boiling range:** Not determined.

· **Flash point:** The product is not flammable.

· **Flammability (solid, gaseous):** Not applicable.

· **Auto-ignition temperature:** Not determined.

· **Decomposition temperature:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits**

Lower: Not determined.

Upper: Not determined.

· **Oxidizing properties:** Non-oxidizing.

· **Vapor pressure:** Not determined.

· **Density at 20 °C (68 °F):** 2.12 g/cm³ (17.69 lbs/gal)

(Cont'd. on page 6)

Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: December 11, 2019

Trade name: Barium Hydroxide, Octahydrate Reagent Grade

(Cont'd. of page 5)

- | | |
|---|------------------------------------|
| · Relative density: | Not determined. |
| · Vapor density: | Not determined. |
| · Evaporation rate: | Not determined. |
| · Solubility in / Miscibility with Water: | Soluble. |
| · Partition coefficient (n-octanol/water): | Not determined. |
| · Viscosity | |
| Dynamic: | Not determined. |
| Kinematic: | Not determined. |
| · Other information | No relevant information available. |

10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:** Stable under normal temperatures and pressures.
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** Prevent formation of dust.
- **Incompatible materials** Acids.
- **Hazardous decomposition products** Bariumoxide vapor

11 Toxicological information

· Information on toxicological effects

- **Acute toxicity:**
Harmful if swallowed.
Harmful if inhaled.

· LD/LC50 values that are relevant for classification:

ATE (Acute Toxicity Estimate)

Oral	LD50	500 mg/kg
Dermal	LD50	6160 mg/kg (rat)
Inhalative	LC50/4h	1.5 mg/l

17194-00-2 barium hydroxide

Dermal	LD50	308 mg/kg (rat)
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- **Primary irritant effect:**
- **On the skin:** Strong caustic effect on skin and mucous membranes.
- **On the eye:** Strong caustic effect.
- **Sensitization:** Based on available data, the classification criteria are not met.

· IARC (International Agency for Research on Cancer):

None of the ingredients are listed.

· NTP (National Toxicology Program):

(Cont'd. on page 7)

Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: December 11, 2019

Trade name: Barium Hydroxide, Octahydrate Reagent Grade

(Cont'd. of page 6)

None of the ingredients are listed.

· **OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

· **Probable route(s) of exposure:**

Ingestion.
Inhalation.
Eye contact.
Skin contact.

· **Acute effects (acute toxicity, irritation and corrosivity):**

Causes severe skin burns and eye damage.
Harmful if swallowed or if inhaled.

- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

12 Ecological information

· **Toxicity**

- **Aquatic toxicity** No relevant information available.
- **Persistence and degradability** No relevant information available.
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.

· **Additional ecological information**

- **General notes:** Do not allow product to reach ground water, water course or sewage system.
- **Other adverse effects** No relevant information available.

13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**

The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous.

· **Uncleaned packagings**

- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· **UN-Number**

· DOT, ADR/RID/ADN, IMDG, IATA UN2922

· **UN proper shipping name**

(Cont'd. on page 8)

Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: December 11, 2019

Trade name: Barium Hydroxide, Octahydrate Reagent Grade

(Cont'd. of page 7)

· **DOT** Corrosive liquids, toxic, n.o.s. (barium hydroxide octahydrate, barium hydroxide)
 · **ADR/RID/ADN, IMDG, IATA** CORROSIVE LIQUID, TOXIC, N.O.S. (barium hydroxide octahydrate, barium hydroxide)

· **Transport hazard class(es)**

· **DOT**



· **Class** 8
 · **Label** 8, 6.1

· **ADR/RID/ADN**



· **Class** 8 (CT1)
 · **Label** 8+6.1

· **IMDG**



· **Class** 8
 · **Label** 8/6.1

· **IATA**



· **Class** 8
 · **Label** 8 (6.1)

· **Packing group**

· **DOT, ADR/RID/ADN, IMDG, IATA** I

· **Environmental hazards** Not applicable.

· **Special precautions for user** Warning: Corrosive substances
 · **Danger code (Kemler):** 886
 · **EMS Number:** F-A,S-B

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

15 Regulatory information

(Cont'd. on page 9)

Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: December 11, 2019

Trade name: Barium Hydroxide, Octahydrate Reagent Grade

(Cont'd. of page 8)

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

· **United States (USA)**

· **SARA**

· **Section 302 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

All ingredients are listed.

· **TSCA (Toxic Substances Control Act)**

All ingredients are listed or exempt.

· **Proposition 65 (California)**

· **Chemicals known to cause cancer:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **EPA (Environmental Protection Agency):**

All components have the value D, CBD(inh), NL(oral).

· **IARC (International Agency for Research on Cancer):**

None of the ingredients are listed.

· **Canadian Domestic Substances List (DSL):**

All ingredients listed on DSL or NDSL.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Abbreviations and acronyms:**

ADR: 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

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

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

OSHA: Occupational Safety & Health Administration

Acute Tox. 4: Acute toxicity – Category 4

Skin Corr. 1A: Skin corrosion/irritation – Category 1A

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

· **Sources**

(Cont'd. on page 10)

Safety Data Sheet

according to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations

Revision: December 11, 2019

Trade name: Barium Hydroxide, Octahydrate Reagent Grade

(Cont'd. of page 9)

Website, European Chemicals Agency (echa.europa.eu)

Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor-internet/registry/substreg/home/overview/home.do)

Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)

Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6

Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

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