SECTION 1. IDENTIFICATION

Product Identifier: (4N) 99.99% Barium Hydroxide Octahydrate

Product Code: BA-OH-04-P.8HYD

CAS Number: 12230-71-6

Relevant identified uses of the substance: Scientific research and development

Supplier details:
American Elements
10884 Weyburn Ave.
Los Angeles, CA 90024
Tel: +1 310-208-0551
Fax: +1 310-208-0351
Emergency telephone number: +1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 4), H332
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318

2.2 GHS Label elements, including precautionary statements

Pictogram
Signal word Danger
Hazard statement(s)
H302 + H332 Harmful if swallowed or if inhaled
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
Precautionary statement(s)
P260 Do not breathe dust or mist.
P264 Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you
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.
P304 + P340 + P310 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.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove
contact lenses, if present and easy to do. Continue rinsing. Immediately
call a POISON CENTER or doctor/ physician.
P363 Wash contaminated clothing before reuse.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances
Formula : H2BaO2 8H2O
Molecular weight : 315.46 g/mol
CAS-No. : 12230-71-6
EC-No. : 241-234-5
Hazardous components
Component Classification Concentration
Barium hydroxide
Acute Tox. 4; Skin Corr. 1B;
Eye Dam. 1; H302 + H332,
H314
<= 100 %

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SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures
General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous
area.
If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a
physician.
In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water.
Consult a physician.
In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing
eyes during
transport to hospital.
If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5. FIREFIGHTING MEASURES

5.1 Extinguishing media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Barium oxide

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing Vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Air sensitive.
SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
Components with workplace control parameters
Component CAS-No. Value Control parameters
Basis
Barium hydroxide 12230-71-6 TWA 0.500000 mg/m³
USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants TWA 0.500000 mg/m³
USA. ACGIH Threshold Limit Values (TLV)
Remarks Eye irritation Muscular stimulation Skin irritation Gastrointestinal irritation Not classifiable as a human carcinogen TWA 0.500000 mg/m³
USA. NIOSH Recommended Exposure Limits
8.2 Exposure controls
Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal protective equipment
Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)
Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min  
Material tested: Dermatri® (KCL 740 / Aldrich Z677272, Size M)  
data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method:  
EN374  
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the  
supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an  
industrial hygienist and safety officer familiar with the specific situation of anticipated use by our  
customers. It  
should not be construed as offering an approval for any specific use scenario.  

Body Protection  
Complete suit protecting against chemicals, The type of protective equipment must be selected according to  
the concentration and amount of the dangerous substance at the specific workplace.  

Respiratory protection  
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle  
respirator type  
N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the  
respirator is the  
sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and  
approved under appropriate government standards such as NIOSH (US) or CEN (EU).  

Control of environmental exposure  
Do not let product enter drains.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties  
a) Appearance Form: solid  
b) Odor No data available  
c) Odor Threshold No data available  
d) pH 12.5 at 50 g/l at 20 °C (68 °F)  
e) Melting point/freezing  
point  
Melting point/range: 78 °C (172 °F) - lit.  
f) Initial boiling point and  
boiling range  
No data available  
g) Flash point N/A  
h) Evaporation rate No data available  
i) Flammability (solid, gas) No data available  
j) Upper/lower  
flammability or  
explosive limits  
No data available  
k) Vapor pressure No data available  
l) Vapor density No data available  
m) Relative density 2.180 g/cm3  
n) Water solubility soluble  
o) Partition coefficient: noctanol/  
water
9. Other safety information

Bulk density 0.90 - 1.1 g/l

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
acids

10.6 Hazardous decomposition products
Other decomposition products - No data available

In the event of fire: see section 5

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute toxicity
No data available

LD50 Oral - Rat - 550 mg/kg
Inhalation: No data available

Inhalation: No data available

Dermal: No data available
Dermal: No data available
No data available
No data available

Skin corrosion/irritation
No data available
No data available

Serious eye damage/eye irritation
No data available
No data available

Respiratory or skin sensitisation
No data available
Germ cell mutagenicity
No data available
No data available
Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity
No data available
No data available
No data available
No data available
Specific target organ toxicity - single exposure
No data available
Specific target organ toxicity - repeated exposure
No data available
Aspiration hazard
No data available
Additional Information
RTECS: Not available
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.
Cough, Shortness of breath, Headache, Nausea
Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available
12.2 Persistence and degradability
No data available
12.3 Bioaccumulative potential
No data available
12.4 Mobility in soil
No data available
12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
12.6 Other adverse effects
No data available

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a
chemical incinerator equipped with an afterburner and scrubber. 
Contaminated packaging
Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

DOT (US)
UN number: 3262 Class: 8 Packing group: II
Proper shipping name: Corrosive solid, basic, inorganic, n.o.s. (Barium hydroxide)
Reportable Quantity (RQ):
Poison Inhalation Hazard: No

IMDG
UN number: 3262 Class: 8 Packing group: II EMS-No: F-A, S-B
Proper shipping name: CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. (Barium hydroxide)

IATA
UN number: 3262 Class: 8 Packing group: II
Proper shipping name: Corrosive solid, basic, inorganic, n.o.s. (Barium hydroxide)

SECTION 15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:
Barium hydroxide
CAS-No.
12230-71-6
Revision Date
2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components
Barium hydroxide
CAS-No.
12230-71-6
Revision Date
2007-07-01

New Jersey Right To Know Components
Barium hydroxide
CAS-No.
12230-71-6
Revision Date
2007-07-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.
16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2019 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.