

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Bariumhydroxid-Octahydrat

Revision: 27.08.2024

Product code: 20087

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Bariumhydroxid-Octahydrat

CAS No: 12230-71-6
Index No: 056-002-00-7
EC No: 241-234-5

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture

Reagents and laboratory chemicals
Only for laboratory and analysis purposes.

Uses advised against

Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheet

Company name: AnalytiChem GmbH
ACD
Street: Stempelstraße 6
Place: D-47167 Duisburg
Telephone: 0203/5194-0 Telefax: 0203/5194-290
E-mail: info@analytichem.de
Contact person: Abteilung Produktsicherheit Telephone: 0203/5194-107/117
E-mail: produktsicherheit@analytichem.de
Internet: www.analytichem.de
Responsible Department: Abteilung Produktsicherheit

1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTRIC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

Further Information

A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute Tox. 4; H332
Acute Tox. 4; H302
Skin Corr. 1B; H314
Eye Dam. 1; H318

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Signal word: Danger

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Pictograms:



Hazard statements

H302+H332 Harmful if swallowed or if inhaled.
 H314 Causes severe skin burns and eye damage.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
 P280 Wear protective gloves/protective clothing and eye protection/face protection.
 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310 Immediately call a POISON CENTER/doctor.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Sum formula: Ba(OH)₂ * 8 H₂O
 Molecular weight: 315,48 g/mol

Relevant ingredients

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
Classification (Regulation (EC) No 1272/2008)				
12230-71-6	barium hydroxide octahydrate			100 %
	241-234-5	056-002-00-7		
	Acute Tox. 4, Acute Tox. 4, Skin Corr. 1B, Eye Dam. 1; H332 H302 H314 H318			

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
Specific Conc. Limits, M-factors and ATE			
12230-71-6	241-234-5	barium hydroxide octahydrate	100 %
inhalation: ATE = 11 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); oral: ATE = 500 mg/kg			

Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Self-protection of the first aider

After inhalation

Provide fresh air.

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If breathing is irregular or stopped, administer artificial respiration.

Call a physician immediately.

After contact with skin

Wash immediately with: Water

Take off immediately all contaminated clothing and wash it before reuse.

Call a physician immediately.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water.

Consult an ophthalmologist.

After ingestion

Never give anything by mouth to an unconscious person or a person with cramps.

Rinse mouth immediately and drink plenty of water.

Do NOT induce vomiting.

Do not allow a neutralisation agent to be drunk.

Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Irritant

corrosive

Cough

Dyspnoea

Abdominal pain

Vomiting

Circulatory collapse

Dizziness

Risk of serious damage to eyes.

Gastrointestinal complaints

Circulatory collapse

Spasms

Cardiac arrhythmias

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

Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Non-combustible solids

5.3. Advice for firefighters

Do not inhale explosion and combustion gases.

Avoid contact with skin, eyes and clothes.

In case of fire: Wear self-contained breathing apparatus.

Additional information

Use water spray jet to protect personnel and to cool endangered containers.

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

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6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

- Provide adequate ventilation.
- Use personal protection equipment.
- Avoid contact with skin, eyes and clothes.
- Remove persons to safety.
- Emergency procedures
- Consult an expert
- Do not breathe dust/fume/gas/mist/vapours/spray.

For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

6.2. Environmental precautions

- Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

For containment

- Cover drains.
- Prevent spread over a wide area (e.g. by containment or oil barriers).
- Collect in closed and suitable containers for disposal.
- Take up carefully when dry. Take up dust-free and set down dust-free.

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

Other information

- Provide adequate ventilation.
- Do not breathe dust/fume/gas/mist/vapours/spray.
- Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.4. Reference to other sections

- Safe handling: see section 7
- Personal protection equipment: see section 8
- Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

- Read label before use. Handle and open container with care.
- Avoid dust formation. Do not breathe dust.
- When using do not eat, drink, smoke, sniff. Keep container tightly closed.
- Use personal protection equipment. Use extractor hood (laboratory).
- Provide adequate ventilation. Avoid contact with skin, eyes and clothes.

Advice on protection against fire and explosion

- Usual measures for fire prevention.

Advice on general occupational hygiene

- Keep away from food, drink and animal feedingstuffs. Make available sufficient washing facilities
- Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

Further information on handling

- Draw up and observe skin protection programme.
- Wash hands and face before breaks and after work and take a shower if necessary.
- Take off immediately all contaminated clothing and wash it before reuse.
- If handled uncovered, arrangements with local exhaust ventilation have to be used.

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7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Store in a well-ventilated place. Keep container tightly closed.
storage temperature +5°C - +30°C

Hints on joint storage

national regulations

Further information on storage conditions

Store in a dry place.

7.3. Specific end use(s)

Laboratory chemicals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
12230-71-6	barium hydroxide octahydrate			

PNEC values

CAS No	Substance	Value
12230-71-6	barium hydroxide octahydrate	
Freshwater		0,115 mg/l
Freshwater sediment		600,4 mg/kg
Micro-organisms in sewage treatment plants (STP)		62,2 mg/l
Soil		207,7 mg/kg

Additional advice on limit values

(anhydrous form)

8.2. Exposure controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Avoid dust formation. Do not breathe dust.

Individual protection measures, such as personal protective equipment

Eye/face protection

goggles

Wear eye protection/face protection.

Hand protection

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: vertrieb@kcl.de With specification (test according to EN374):

By long-term hand contact

Trade name/designation KCL 741 Dermatril® L

Suitable material: NBR (Nitrile rubber) 0,11 mm

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Wearing time with permanent contact: > 480 min

By short-term hand contact

Trade name/designation KCL 741 Dermatril® L

Suitable material: NBR (Nitrile rubber) 0,11 mm

Wearing time with occasional contact (splashes): > 480 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin protection

Wear suitable protective clothing.

Take off immediately all contaminated clothing.

Wash hands before breaks and after work.

The choice of body protection depends on the concentration and quantity of hazardous substances. The chemical resistance of protective agents must be clarified with their suppliers.

Respiratory protection

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Filtering device with filter or ventilator filtering device of type: P2

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	solid
Colour:	white
Odour:	odourless
Odour threshold:	No data available
Melting point/freezing point:	78 °C
Boiling point or initial boiling point and boiling range:	No data available
Flammability:	No data available
Lower explosion limits:	No data available
Upper explosion limits:	No data available
Flash point:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	100-780 °C
pH-Value (at 20 °C):	14
Viscosity / kinematic:	No data available
Water solubility: (at 20 °C)	72 g/l
Solubility in other solvents	No data available
Partition coefficient n-octanol/water:	No data available
Vapour pressure:	No data available
Vapour pressure:	No data available

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Density:	2,18 g/cm ³
Bulk density:	900-1100 kg/m ³
Relative vapour density:	No data available

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

No data available

Sustained combustibility:

No data available

Self-ignition temperature

Solid:

No data available

Gas:

No data available

Oxidizing properties

No data available

Other safety characteristics

Evaporation rate:

No data available

Solvent separation test:

No data available

Solvent content:

0

Solid content:

0

Sublimation point:

No data available

Softening point:

No data available

Pour point:

No data available

No data available:

Viscosity / dynamic:

No data available

Flow time:

No data available

Further Information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Acid

Hydrogen sulphide (H₂S)

10.4. Conditions to avoid

Heat

10.5. Incompatible materials

Light metal

10.6. Hazardous decomposition products

No data available

Further information

No data available

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

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Toxicokinetics, metabolism and distribution

No data available

Acute toxicity

Harmful if inhaled.

Harmful if swallowed.

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
12230-71-6	barium hydroxide octahydrate				
	oral	ATE mg/kg	500		
	inhalation vapour	ATE	11 mg/l		
	inhalation dust/mist	ATE	1,5 mg/l		

Irritation and corrosivity

Skin corrosion/irritation: Causes severe skin burns and eye damage.

Serious eye damage/eye irritation: Causes serious eye damage.

Sensitising effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction

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.

Information on likely routes of exposure

No data available

Specific effects in experiment on an animal

No data available

Additional information on tests

No data available

Practical experience

No data available

11.2. Information on other hazards

Endocrine disrupting properties

No data available

Other information

If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

Resorption (oral)

Resorption (by inhalation)

Further information

Irritant

corrosive

Cough

Dyspnoea

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Abdominal pain
 Vomiting
 Circulatory collapse
 Dizziness
 Risk of serious damage to eyes.
 Gastrointestinal complaints
 Circulatory collapse
 Spasms
 Cardiac arrhythmias

SECTION 12: Ecological information**12.1. Toxicity**

Based on available data, the classification criteria are not met.

CAS No	Chemical name						
		Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
12230-71-6	barium hydroxide octahydrate						
	Acute fish toxicity	LC50 mg/l	> 3,5	96 h	Danio rerio	Study report (2010)	OECD Guideline 203
	Acute algae toxicity	ErC50 mg/l	> 1,15	72 h	Pseudokirchneriella subcapitata	Study report (2010)	OECD Guideline 201
	Acute crustacea toxicity	EC50 mg/l	14,5	48 h	Daphnia magna	Publication (1972)	Not a guideline study but meets generall
	Fish toxicity	NOEC mg/l	>= 100	33 d	Danio rerio	Study report (2014)	OECD Guideline 210
	Crustacea toxicity	NOEC	10 mg/l	7 d	other aquatic arthropod: Cancer anthonyi	Publication (1988)	
	Acute bacteria toxicity	EC50 mg/l ()	> 1000	3 h	activated sludge of a predominantly domestic sewag	Study report (2010)	OECD Guideline 209

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No data available

BCF

CAS No	Chemical name	BCF	Species	Source
12230-71-6	barium hydroxide octahydrate	68,4	Lepomis macrochirus	Arch. Environ. Contam.

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

12.7. Other adverse effects

No data available

Further information

Do not allow to enter into surface water or drains.

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Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Send to a physico-chemical treatment facility under observation of official regulations.

Do not allow to enter into surface water or drains.

Contaminated packaging

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number: UN 3262

14.2. UN proper shipping name: CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. (barium hydroxide octahydrate)

14.3. Transport hazard class(es): 8

14.4. Packing group: II

Hazard label: 8

Classification code: C6

Special Provisions: 274

Limited quantity: 1 kg

Excepted quantity: E2

Transport category: 2

Hazard No: 80

Tunnel restriction code: E

Inland waterways transport (ADN)

14.1. UN number or ID number: UN 3262

14.2. UN proper shipping name: CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. (barium hydroxide octahydrate)

14.3. Transport hazard class(es): 8

14.4. Packing group: II

Hazard label: 8

Classification code: C6

Special Provisions: 274

Limited quantity: 1 kg

Excepted quantity: E2

Marine transport (IMDG)

14.1. UN number or ID number: UN 3262

14.2. UN proper shipping name: CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. (barium hydroxide octahydrate)

14.3. Transport hazard class(es): 8

14.4. Packing group: II

Hazard label: 8

Special Provisions: 274

Limited quantity: 1 kg

Excepted quantity: E2

EmS: F-A, S-B

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Segregation group:	18 - alkalis
Air transport (ICAO-TI/IATA-DGR)	
14.1. UN number or ID number:	UN 3262
14.2. UN proper shipping name:	CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. (barium hydroxide octahydrate)
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8
Special Provisions:	A3 A803
Limited quantity Passenger:	5 kg
Passenger LQ:	Y844
Excepted quantity:	E2
IATA-packing instructions - Passenger:	859
IATA-max. quantity - Passenger:	15 kg
IATA-packing instructions - Cargo:	863
IATA-max. quantity - Cargo:	50 kg

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

SECTION 15: Regulatory information

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

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).
Water hazard class (D): 1 - slightly hazardous to water

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 2,12,14.

Abbreviations and acronyms

Acute Tox. 4: Acute toxicity, hazard category 4
Skin Corr. 1B: Skin corrosion, sub-category 1B
Eye Dam. 1: Serious eye damage, hazard category 1

Relevant H and EUH statements (number and full text)

H302 Harmful if swallowed.
H302+H332 Harmful if swallowed or if inhaled.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H332 Harmful if inhaled.

Further Information

Provide appropriate information, instructions and training to users

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.

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