

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

## Barium hydroxide octahydrate very pure

Revision date: 30.10.2023

Product code: 25162

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Barium hydroxide octahydrate very pure

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**

Laboratory chemicals

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

**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  
Street: Stempelstraße 6  
Place: D-47167 Duisburg  
Telephone: 0203/5194-0  
E-mail: info@analytichem.de  
Contact person: Abteilung Produktsicherheit  
E-mail: produktsicherheit@analytichem.de  
Internet: www.analytichem.de  
Responsible Department: Abteilung Produktsicherheit

Telefax: 0203/5194-290  
Telephone: 0203/5194-107/117

**1.4. Emergency telephone number:**

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC 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

Pictograms:



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#### 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/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)<sub>2</sub> \* 8 H<sub>2</sub>O  
Molecular weight: 315,48 g/mol

#### Relevant ingredients

CAS No	Chemical name	Quantity
	EC No	Index No
	Classification (Regulation (EC) No 1272/2008)	REACH No
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.  
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.

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#### 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

#### 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  
Do not breathe dust/fume/gas/mist/vapours/spray.

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#### 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.

### **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

#### Further information on storage conditions

Store in a dry place.

### **7.3. Specific end use(s)**

Laboratory chemicals

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**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			
Consumer DNEL, long-term		oral	systemic	3,4 mg/kg bw/day

**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/face protection.

**Hand protection**

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: [vertrieb@kcl.de](mailto: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

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](http://www.kcl.de)).

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#### Skin protection

- Wear suitable protective clothing.
- Take off immediately all contaminated clothing.
- Wash hands before breaks and after work.

#### Respiratory protection

- Wear breathing apparatus if exposed to vapours/dusts/aerosols.
- Filtering device with filter or ventilator filtering device of type: P2

#### 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
Dissolution rate:		No data available
Partition coefficient n-octanol/water:		No data available
Dispersion stability:		No data available
Vapour pressure:		No data available
Vapour pressure:		No data available
Density:		2,18 g/cm <sup>3</sup>
Relative density:		No data available
Bulk density:		900-1100 kg/m <sup>3</sup>
Relative vapour density:		No data available
Particle characteristics:		No data available

### 9.2. Other information

#### Information with regard to physical hazard classes

Explosive properties	
No data available	
Sustaining combustion:	No data available
Self-ignition temperature	
Solid:	No data available
Gas:	No data available
Oxidizing properties	
No data available	

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**Other safety characteristics**

Evaporation rate:	No data available
Solvent separation test:	No data available
Solvent content:	0
Solid content:	100%
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 (H<sub>2</sub>S)

**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**

**Toxicokinetics, metabolism and distribution**

No data available

**Acute toxicity**

Harmful if swallowed.  
Harmful if inhaled.

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

**Irritation and corrosivity**

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Causes severe skin burns and eye damage.

Causes serious eye damage.

#### **Sensitising effects**

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

#### **Carcinogenic/mutagenic/toxic effects for reproduction**

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).

#### **Further information**

Irritant

corrosive

Cough

Dyspnoea

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.



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CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
12230-71-6	barium hydroxide octahydrate					
	Acute fish toxicity	LC50 > 3,5 mg/l	96 h	Danio rerio	Study report (2010)	OECD Guideline 203
	Acute algae toxicity	ErC50 > 1,15 mg/l	72 h	Pseudokirchneriella subcapitata	Study report (2010)	OECD Guideline 201
	Acute crustacea toxicity	EC50 14,5 mg/l	48 h	Daphnia magna	Publication (1972)	Not a guideline study but meets generally
	Fish toxicity	NOEC >= 100 mg/l	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 > 1000 mg/l ( )	3 h	activated sludge of a predominantly domestic sewage	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.

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**

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## Land transport (ADR/RID)

<b>14.1. UN number or ID number:</b>	UN 3262
<b>14.2. UN proper shipping name:</b>	CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. (barium hydroxide octahydrate)
<b>14.3. Transport hazard class(es):</b>	8
<b>14.4. Packing group:</b>	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)

<b>14.1. UN number or ID number:</b>	UN 3262
<b>14.2. UN proper shipping name:</b>	CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. (barium hydroxide octahydrate)
<b>14.3. Transport hazard class(es):</b>	8
<b>14.4. Packing group:</b>	II
Hazard label:	8
Classification code:	C6
Special Provisions:	274
Limited quantity:	1 kg
Excepted quantity:	E2

## Marine transport (IMDG)

<b>14.1. UN number or ID number:</b>	UN 3262
<b>14.2. UN proper shipping name:</b>	CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. (barium hydroxide octahydrate)
<b>14.3. Transport hazard class(es):</b>	8
<b>14.4. Packing group:</b>	II
Hazard label:	8
Special Provisions:	274
Limited quantity:	1 kg
Excepted quantity:	E2
EmS:	F-A, S-B
Segregation group:	18 - alkalis

## Air transport (ICAO-TI/IATA-DGR)

<b>14.1. UN number or ID number:</b>	UN 3262
<b>14.2. UN proper shipping name:</b>	CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. (barium hydroxide octahydrate)
<b>14.3. Transport hazard class(es):</b>	8
<b>14.4. Packing group:</b>	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**

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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): 9,12.

##### Abbreviations and acronyms

Acute Tox: Acute toxicity  
Skin Corr: Skin corrosion  
Eye Dam: Eye damage

##### 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

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.