

Safety data sheet

Safe Work Australia - Code of Practice



Barium hydroxide octahydrate $\geq 98\%$, p.a., ISO

article number: **P009**
Version: **GHS 2.0 en**
Replaces version of: 2016-12-07
Version: (GHS 1)

date of compilation: 2016-12-07
Revision: 2020-03-13

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

1.1 Product identifier

| | |
|---------------------------------|-------------------------------------|
| Identification of the substance | Barium hydroxide octahydrate |
| Article number | P009 |
| Registration number (REACH) | 01-2119495571-31-xxxx |
| Index No | 056-002-00-7 |
| EC number | 241-234-5 |
| CAS number | 12230-71-6 |

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

Identified uses: laboratory chemical
laboratory and analytical use

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

Telephone: +49 (0) 721 - 56 06 0
Telefax: +49 (0) 721 - 56 06 149
e-mail: sicherheit@carlroth.de
Website: www.carlroth.de

Competent person responsible for the safety data sheet: : Department Health, Safety and Environment

e-mail (competent person): sicherheit@carlroth.de

1.4 Emergency telephone number

| Name | Street | Postal code/city | Telephone | Website |
|--|-----------------|--------------------|-----------|---------|
| NSW Poisons Information Centre Childrens Hospital | Hawkesbury Road | 2145 Westmead, NSW | 131126 | |

Emergency information service

Poison Centre Munich: +49/(0)89 19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

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| Classification acc. to GHS | | | |
|----------------------------|-------------------------|---------------------------|------------------|
| Section | Hazard class | Hazard class and category | Hazard statement |
| 3.10 | acute toxicity (oral) | (Acute Tox. 4) | H302 |
| 3.11 | acute toxicity (inhal.) | (Acute Tox. 4) | H332 |

2.2 Label elements

Labelling GHS

Signal word

Warning

Pictograms

GHS07



Hazard statements

H302+H332 Harmful if swallowed or if inhaled

Precautionary statements

Precautionary statements - prevention

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.

Precautionary statements - response

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P330 Rinse mouth.

Precautionary statements - disposal

P501 Dispose of contents/container to industrial combustion plant.

Labelling of packages where the contents do not exceed 125 ml

Signal word: **Warning**

Symbol(s)



2.3 Other hazards

There is no additional information.

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SECTION 3: Composition/information on ingredients

3.1 Substances

| | |
|-----------------------------|--|
| Name of substance | Barium hydroxide octahydrate |
| Index No | 056-002-00-7 |
| Registration number (REACH) | 01-2119495571-31-xxxx |
| EC number | 241-234-5 |
| CAS number | 12230-71-6 |
| Molecular formula | BaH ₂ O ₂ * 8 H ₂ O |
| Molar mass | 315.5 g/mol |

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

Following skin contact

Immediate medical treatment required because corrosive injuries that are not treated are hard to cure.

Following eye contact

Rinse cautiously with water for several minutes. In all cases of doubt, or when symptoms persist, seek medical advice.

Following ingestion

Rinse mouth. Call a doctor if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed

Irritation, Headache, Vertigo, Nausea, Vomiting, Diarrhoea, Breathing difficulties

4.3 Indication of any immediate medical attention and special treatment needed

none

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SECTION 5: Firefighting measures

5.1 Extinguishing media



Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings
water spray, foam, dry extinguishing powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Non-combustible.

Hazardous combustion products

in case of fire and/or explosion do not breathe fumes

5.3 Advice for firefighters

Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures



For non-emergency personnel

Do not breathe dust. Avoid contact with skin and eyes. Use personal protective equipment as required.

6.2 Environmental precautions

Keep away from drains, surface and ground water.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Advice on how to clean up a spill

Take up mechanically. Control of dust.

Other information relating to spills and releases

Place in appropriate containers for disposal.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

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SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid dust formation. When not in use, keep containers tightly closed.

- **Measures to prevent fire as well as aerosol and dust generation**

Removal of dust deposits.

Advice on general occupational hygiene

Wash hands before breaks and after work.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store in a dry place.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice

- **Ventilation requirements**

Use local and general ventilation.

- **Specific designs for storage rooms or vessels**

Recommended storage temperature: 15 – 25 °C.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

Data are not available.

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggle with side protection.

Skin protection



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• hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 °C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

• type of material

NBR (Nitrile rubber)

• material thickness

>0,11 mm

• breakthrough times of the glove material

>480 minutes (permeation: level 6)

• other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection



Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P2 (filters at least 94 % of airborne particles, colour code: White).

Environmental exposure controls

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

| | |
|-----------------|---------------------|
| Physical state | solid (crystalline) |
| Colour | white |
| Odour | odourless |
| Odour threshold | No data available |

Other physical and chemical parameters

| | |
|---|-------------------------------------|
| pH (value) | ~ 14 (20 °C) |
| Melting point/freezing point | 78 °C |
| Initial boiling point and boiling range | This information is not available. |
| Flash point | not applicable |
| Evaporation rate | no data available |
| Flammability (solid, gas) | These information are not available |

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Explosive limits

| | |
|---------------------------------|--|
| • lower explosion limit (LEL) | this information is not available |
| • upper explosion limit (UEL) | this information is not available |
| Explosion limits of dust clouds | these information are not available |
| Vapour pressure | This information is not available. |
| Density | 2.18 g/cm ³ at 20 °C |
| Vapour density | This information is not available. |
| Bulk density | 900 – 1,100 kg/m ³ |
| Relative density | Information on this property is not available. |
| <u>Solubility(ies)</u> | |
| Water solubility | ~ 72 g/l at 20 °C |
| <u>Partition coefficient</u> | |
| n-octanol/water (log KOW) | This information is not available. |
| Auto-ignition temperature | Information on this property is not available. |
| Decomposition temperature | no data available |
| Viscosity | not relevant (solid matter) |
| Explosive properties | Shall not be classified as explosive |
| Oxidising properties | none |

9.2 Other information

There is no additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Violent reaction with: Strong acid, Hydrogen sulphide (H₂S)

10.4 Conditions to avoid

Keep away from heat.

10.5 Incompatible materials

Light metals

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

| Exposure route | Endpoint | Value | Species | Source |
|----------------|----------|-----------|---------|--------|
| oral | LD50 | 308 mg/kg | unknown | TOXNET |

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Summary of evaluation of the CMR properties

Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

- **Specific target organ toxicity - single exposure**

Shall not be classified as a specific target organ toxicant (single exposure).

- **Specific target organ toxicity - repeated exposure**

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

- **If swallowed**

nausea, vomiting, diarrhoea

- **If in eyes**

data are not available

- **If inhaled**

cough, irritant effects, breathing difficulties, Dyspnoea

- **If on skin**

data are not available

Other information

None

SECTION 12: Ecological information

12.1 Toxicity

acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

12.2 Process of degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Data are not available.

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12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.


13.2 Relevant provisions relating to waste

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

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

| | | |
|------|---|---|
| 14.1 | UN number | 3262 |
| 14.2 | UN proper shipping name Hazardous ingredients | CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. Barium hydroxide octahydrate |
| 14.3 | Transport hazard class(es) Class |  8 (corrosive substances) |
| 14.4 | Packing group | II (substance presenting medium danger) |
| 14.5 | Environmental hazards | none (non-environmentally hazardous acc. to the dangerous goods regulations) |
| 14.6 | Special precautions for user Provisions for dangerous goods (ADR) should be complied within the premises. | |
| 14.7 | Transport in bulk according to Annex II of MARPOL and the IBC Code The cargo is not intended to be carried in bulk. | |
| 14.8 | Information for each of the UN Model Regulations | |

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• Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)

| | |
|---------------------------------------|---|
| UN number | 3262 |
| Proper shipping name | CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. |
| Particulars in the transport document | UN3262, CORROSIVE SOLID, BASIC, INORGANIC, N.O.S., (Barium hydroxide octahydrate), 8, II, (E) |
| Class | 8 |
| Classification code | C6 |
| Packing group | II |
| Danger label(s) | 8 |



| | |
|-------------------------------|-----------|
| Special provisions (SP) | 274 |
| Excepted quantities (EQ) | E2 |
| Limited quantities (LQ) | 1 kg |
| Transport category (TC) | 2 |
| Tunnel restriction code (TRC) | E |
| Hazard identification No | 80 |
| Emergency Action Code | 2X |

• International Maritime Dangerous Goods Code (IMDG)

| | |
|--|--|
| UN number | 3262 |
| Proper shipping name | CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. |
| Particulars in the shipper's declaration | UN3262, CORROSIVE SOLID, BASIC, INORGANIC, N.O.S., (Barium hydroxide octahydrate), 8, II |
| Class | 8 |
| Marine pollutant | - |
| Packing group | II |
| Danger label(s) | 8 |



| | |
|--------------------------|--------------|
| Special provisions (SP) | 274 |
| Excepted quantities (EQ) | E2 |
| Limited quantities (LQ) | 1 kg |
| EmS | F-A, S-B |
| Stowage category | B |
| Segregation group | 18 - Alkalis |

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• International Civil Aviation Organization (ICAO-IATA/DGR)

| | |
|---|--|
| UN number | 3262 |
| Proper shipping name | Corrosive solid, basic, inorganic, n.o.s. |
| Particulars in the shipper's declaration | UN3262, Corrosive solid, basic, inorganic, n.o.s., (Barium hydroxide octahydrate), 8, II |
| Class | 8 |
| Packing group | II |
| Danger label(s) | 8 |
|  | |
| Special provisions (SP) | A3 |
| Excepted quantities (EQ) | E2 |
| Limited quantities (LQ) | 5 kg |

SECTION 15: Regulatory information

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

National inventories

Substance is listed in the following national inventories:

| Country | National inventories | Status |
|---------|----------------------|---------------------|
| AU | AICS | substance is listed |
| CN | IECSC | substance is listed |
| EU | ECSI | substance is listed |
| EU | REACH Reg. | substance is listed |
| NZ | NZIoC | substance is listed |
| PH | PICCS | substance is listed |
| TR | CICR | substance is listed |
| TW | TCSI | substance is listed |

Legend

| | |
|------------|---|
| AICS | Australian Inventory of Chemical Substances |
| CICR | Chemical Inventory and Control Regulation |
| ECSI | EC Substance Inventory (EINECS, ELINCS, NLP) |
| IECSC | Inventory of Existing Chemical Substances Produced or Imported in China |
| NZIoC | New Zealand Inventory of Chemicals |
| PICCS | Philippine Inventory of Chemicals and Chemical Substances |
| REACH Reg. | REACH registered substances |
| TCSI | Taiwan Chemical Substance Inventory |

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

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SECTION 16: Other information

Indication of changes (revised safety data sheet)

| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|---|---|-----------------|
| 1.1 | Registration number (REACH): This information is not available. | Registration number (REACH): 01-2119495571-31-xxxx | yes |
| 2.1 | | Classification acc. to GHS: change in the listing (table) | yes |
| 2.1 | Remarks: For full text of Hazard- and EU Hazard-statements: see SECTION 16. | | yes |
| 2.2 | Signal word: Danger | Signal word: Warning | yes |
| 2.2 | | Pictograms: change in the listing (table) | yes |
| 2.2 | | Hazard statements: change in the listing (table) | yes |
| 2.2 | | Precautionary statements - prevention: change in the listing (table) | yes |
| 2.2 | | Precautionary statements - response: change in the listing (table) | yes |
| 2.2 | Labelling of packages where the contents do not exceed 125 ml: Signal word: Danger | Labelling of packages where the contents do not exceed 125 ml: Signal word: Warning | yes |
| 2.2 | | Labelling of packages where the contents do not exceed 125 ml: change in the listing (table) | yes |
| 2.2 | | Labelling of packages where the contents do not exceed 125 ml: change in the listing (table) | yes |
| 2.2 | | Labelling of packages where the contents do not exceed 125 ml: change in the listing (table) | yes |
| 14.3 | Transport hazard class(es) | Transport hazard class(es): class 8 hazard - corrosive substances | yes |
| 14.8 | | Marine pollutant: - | yes |
| 14.8 | Packing group: II8 | Packing group: II | yes |
| 14.8 | | Danger label(s): 8 | yes |
| 14.8 | Special provisions (SP): A3, 274 | Special provisions (SP): A3 | yes |

Abbreviations and acronyms

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| Abbr. | Descriptions of used abbreviations |
|----------|---|
| ADN | Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways) |
| ADR | Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road) |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| CMR | Carcinogenic, Mutagenic or toxic for Reproduction |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| EmS | Emergency Schedule |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| IATA | International Air Transport Association |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |
| ICAO | International Civil Aviation Organization |
| IMDG | International Maritime Dangerous Goods Code |
| index No | the Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 |
| LD50 | Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval |
| MARPOL | International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant") |
| NLP | No-Longer Polymer |
| PBT | Persistent, Bioaccumulative and Toxic |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) |
| vPvB | very Persistent and very Bioaccumulative |

Key literature references and sources for data

- UN Recommendations on the Transport of Dangerous Good
- Dangerous Goods Regulations (DGR) for the air transport (IATA)
- International Maritime Dangerous Goods Code (IMDG)

List of relevant phrases (code and full text as stated in chapter 2 and 3)

| Code | Text |
|------|----------------------|
| H302 | harmful if swallowed |
| H332 | harmful if inhaled |

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Disclaimer

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.