

**Safety data sheet
according to 1907/2006/EC, Article 31**

revised on: 14.01.2022

Version number 4

Creation Date: 25.10.2018

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier****Trade name: Barium chloride dihydrate****Article number:** 2515**CAS Number:**

10326-27-9

EC number:

600-412-6

Registration number 01-2119502547-42-XXXX**1.2 Relevant identified uses of the substance or mixture and uses advised against****Sector of Use**

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

SU9 Manufacture of fine chemicals

SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

SU24 Scientific research and development

Product category

PC19 Intermediate

PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents

PC21 Laboratory chemicals

PC29 Pharmaceuticals

PC39 Cosmetics, personal care products

PC40 Extraction agents

Process category

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

PROC4 Chemical production where opportunity for exposure arises

PROC5 Mixing or blending in batch processes

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

PROC15 Use as laboratory reagent

Environmental release category

ERC1 Manufacture of the substance

ERC2 Formulation into mixture

ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

ERC6a Use of intermediate

Application of the substance / the mixture

Industrial use

Laboratory chemicals

Reagent for analysis

1.3 Details of the supplier of the safety data sheet**Manufacturer/Supplier:**

Th. Geyer GmbH & Co. KG

Dornierstr. 4 – 6

D-71272 Renningen

Tel.: +49(0)7159-1637-0, Fax:+49 (0)7159/18417

www.thgeyer.de

sicherheitsdatenblaetter@thgeyer.de

(Contd. on page 2)

E

Safety data sheet

according to 1907/2006/EC, Article 31

revised on: 14.01.2022

Version number 4

Creation Date: 25.10.2018

Trade name: Barium chloride dihydrate

(Contd. of page 1)

- **Further information obtainable from:** Product management department

- **1.4 Emergency telephone number:**

National Poisons Information Service
(Birmingham Centre)
City Hospital
Dudley Road
Birmingham B18 7QH
Tel.:Emergency: (00 44) 87 06 00 62 66

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**

- **Classification according to Regulation (EC) No 1272/2008**



GHS06 skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

- **2.2 Label elements**

- **Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the CLP regulation.

- **Hazard pictograms**



GHS06

- **Signal word** Danger

- **Hazard statements**

H301 Toxic if swallowed.

H332 Harmful if inhaled.

- **Precautionary statements**

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P304+P312 IF INHALED: Call a POISON CENTER/doctor if you feel unwell.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **2.3 Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.1 Substances**

- **CAS No. Description**

CAS: 10326-27-9 Barium chloride dihydrate

(Contd. on page 3)

Safety data sheet

according to 1907/2006/EC, Article 31

revised on: 14.01.2022

Version number 4

Creation Date: 25.10.2018

Trade name: Barium chloride dihydrate

(Contd. of page 2)

- **Identification number(s)**
- **EC number:** 600-412-6

SECTION 4: First aid measures

· 4.1 Description of first aid measures

· **General information:**

First aider needs to protect himself.

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Remove person from danger area.

Seek immediate medical advice.

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:**

Immediately remove any clothing soiled by the product.

Seek immediate medical advice.

· **After eye contact:**

Protect unharmed eye.

Seek immediate medical advice.

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

· **After swallowing:**

Rinse mouth thoroughly with water.

As soon as possible, repeatedly drink 1-5% sodium sulfate solution and allow to vomit again. Inform a doctor

Consult a physician.

· **Information for doctor:** Please observe safety data sheet/label.

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

Headache

Dazed feeling

Cramp

Gastric or intestinal disorders

Profuse sweating

· **Hazards**

Danger of disturbed cardiac rhythm.

Danger of convulsion.

· 4.3 Indication of any immediate medical attention and special treatment needed

Monitor circulation, possible shock treatment.

If swallowed, gastric irrigation with added, activated carbon.

If blue colouring appears (lips, ear-lobes, finger-nails), give oxygen treatment as quickly as possible.

SECTION 5: Firefighting measures

· 5.1 Extinguishing media

· **Suitable extinguishing agents:**

Use fire extinguishing methods suitable to surrounding conditions.

Carbon dioxide, powder, water spray or alcohol-resistant foam.

· **For safety reasons unsuitable extinguishing agents:** Water with full jet.

· 5.2 Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in case of fire.

In case of fire, the following can be released:

Barium oxide

Hydrogen chloride (HCl)

Under certain fire conditions, traces of other toxic gases cannot be excluded.

Not combustible.

(Contd. on page 4)

Safety data sheet

according to 1907/2006/EC, Article 31

revised on: 14.01.2022

Version number 4

Creation Date: 25.10.2018

Trade name: Barium chloride dihydrate

(Contd. of page 3)

- **5.3 Advice for firefighters**
- **Protective equipment:**
 - Mouth respiratory protective device.
 - Wear self-contained respiratory protective device.
 - Do not inhale explosion gases or combustion gases.
- **Additional information**
 - Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
 - Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
 - Ensure adequate ventilation.
 - Avoid formation of dust.
 - Do not inhale dust.
 - Avoid contact with eyes and skin.
 - Use respiratory protective device against the effects of fumes/dust/aerosol.
- **6.2 Environmental precautions:** Do not allow to enter sewers/surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
 - Dispose contaminated material as waste according to item 13.
 - Ensure adequate ventilation.
 - Dispose of the material collected according to regulations.
- **6.4 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.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
 - Keep away from heat and direct sunlight.
 - Apply the general protection and hygiene measures for the handling with chemicals.
 - Thorough dedusting.
 - Ensure good ventilation/exhaustion at the workplace.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
- **Information about storage in one common storage facility:**
 - Store away from oxidising agents.
 - Store away from flammable substances.
 - Store away from water.
- **Further information about storage conditions:**
 - Protect from humidity and water.
 - Store in dry conditions.
 - Keep container tightly sealed.
- **Storage class:** 6.1 D
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Additional information about design of technical facilities:** No further data; see item 7.

(Contd. on page 5)

E

Safety data sheet

according to 1907/2006/EC, Article 31

revised on: 14.01.2022

Version number 4

Creation Date: 25.10.2018

Trade name: Barium chloride dihydrate

(Contd. of page 4)

· Ingredients with limit values that require monitoring at the workplace:	
CAS: 10326-27-9 Barium chloride dihydrate	
WEL	Long-term value: 0.5 mg/m ³ as Ba

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device. If air-purifying respiratory protection is required according to the risk assessment, wear a respirator with full-face mask with combination filter (US) or with filter type ABEK (EN 14387) filter cartridge. If the respirator is the only protective measure, an ambient air self-contained breathing apparatus with a full face mask must be worn. Respirators and components must be approved to appropriate government standards (for example, NIOSH (US) or CEN (EU)). Translated with www.DeepL.com/Translator (free version)

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Safety glasses

· **Body protection:**



Protective work clothing (e. g. safety shoes EN ISO 20345, long-sleeved protective working garments).

SECTION 9: Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form: Solid material

Colour: Colourless

· **Odour:** Odourless

· **pH-value:** 5–8

(Contd. on page 6)

E

Safety data sheet

according to 1907/2006/EC, Article 31

revised on: 14.01.2022

Version number 4

Creation Date: 25.10.2018

Trade name: Barium chloride dihydrate

(Contd. of page 5)

· Change in condition Melting point/freezing point:	962 °C
Initial boiling point and boiling range:	Undetermined.
· Flash point:	Not applicable.
· Flammability (solid, gas):	Product is not flammable.
· Decomposition temperature:	Not determined.
· Auto-ignition temperature:	Not determined.
· Explosive properties:	Product does not present an explosion hazard.
· Explosion limits: Lower:	Not determined.
Upper:	Not determined.
· Vapour pressure:	Not applicable.
· Density at 20 °C:	3.86 g/cm ³ Not determined.
· Bulk density:	1,300 kg/m ³
· Relative density	Not determined.
· Vapour density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with water at 20 °C:	375 g/l
· Partition coefficient: n-octanol/water:	Not determined.
· Viscosity: Dynamic:	Not applicable.
Kinematic:	Not applicable.
· 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability** Stable with proper storage and handling.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
Reacts with strong oxidising agents.
Reacts with strong acids.
Reacts with reducing agents.
Reacts with various metals.
- **10.4 Conditions to avoid**
Protect from humidity.
Heat, flames and sparks
- **10.5 Incompatible materials:** Avoid contact with other chemicals.
- **10.6 Hazardous decomposition products:** On fire: see chapter 5

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**
Toxic if swallowed.
Harmful if inhaled.

(Contd. on page 7)

E

Safety data sheet

according to 1907/2006/EC, Article 31

revised on: 14.01.2022

Version number 4

Creation Date: 25.10.2018

Trade name: Barium chloride dihydrate

(Contd. of page 6)

LD/LC50 values relevant for classification:

Oral	LD50	118 mg/kg (rat)
Inhalative	LC50	1.5 mg/l (ATE)

Primary irritant effect:

- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

Additional toxicological information:

- **CMR effects (carcinogenicity, mutagenicity and toxicity 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.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
Observe local (country-specific) regulations and laws
This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
Chemicals must be disposed of in compliance with the respective national regulations.

European waste catalogue

06 00 00	WASTES FROM INORGANIC CHEMICAL PROCESSES
06 03 00	wastes from the MFSU of salts and their solutions and metallic oxides
06 03 99	wastes not otherwise specified
HP6	Acute Toxicity

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

(Contd. on page 8)

Safety data sheet

according to 1907/2006/EC, Article 31

revised on: 14.01.2022



Version number 4

Creation Date: 25.10.2018

Trade name: Barium chloride dihydrate

(Contd. of page 7)

SECTION 14: Transport information

<ul style="list-style-type: none"> · 14.1 UN-Number · ADR, IMDG, IATA 	UN1564	
<ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR · IMDG, IATA 	1564 BARIUM COMPOUND, N.O.S. (Barium chloride dihydrate) BARIUM COMPOUND, N.O.S. (Barium chloride dihydrate)	
<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR 	<div style="text-align: center;">  </div> <ul style="list-style-type: none"> · Class · Label 	6.1 (T5) Toxic substances. 6.1
<ul style="list-style-type: none"> · IMDG, IATA 	<div style="text-align: center;">  </div> <ul style="list-style-type: none"> · Class · Label 	6.1 Toxic substances. 6.1
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	III	
<ul style="list-style-type: none"> · 14.5 Environmental hazards: 	Not applicable.	
<ul style="list-style-type: none"> · 14.6 Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Stowage Category 	Warning: Toxic substances. 60 6.1-04 A	
<ul style="list-style-type: none"> · 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code 	Not applicable.	
<ul style="list-style-type: none"> · Transport/Additional information: 	<ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Excepted quantities (EQ) · Transport category · Tunnel restriction code 	5 kg Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g 2 E
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	5 kg Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g	
<ul style="list-style-type: none"> · UN "Model Regulation": 	UN 1564 BARIUM COMPOUND, N.O.S. (BARIUM CHLORIDE DIHYDRATE), 6.1, III	

(Contd. on page 9)

Safety data sheet

according to 1907/2006/EC, Article 31

revised on: 14.01.2022

Version number 4

Creation Date: 25.10.2018

Trade name: Barium chloride dihydrate

(Contd. of page 8)

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**
Substance is not listed.
- **REGULATION (EU) 2019/1148**
- **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**
Substance is not listed.
- **Annex II - REPORTABLE EXPLOSIVES PRECURSORS** Substance is not listed.
- **Regulation (EC) No 273/2004 on drug precursors** Substance is not listed.
- **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**
Substance is not listed.
- **National regulations:**
- **Information about limitation of use:**
Employment restrictions concerning juveniles must be observed.
Employment restrictions concerning pregnant and lactating women must be observed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

SECTION 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.
Application, use and handling of our products take place out of our control and are solely your responsibility.

- **Department issuing SDS:** Product management
- **Contact:** Product management
- **Abbreviations and acronyms:**
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 3: Acute toxicity – Category 3
Acute Tox. 4: Acute toxicity – Category 4
- *** Data compared to the previous version altered.**

(Contd. on page 10)

Safety data sheet

according to 1907/2006/EC, Article 31

revised on: 14.01.2022

Version number 4

Creation Date: 25.10.2018

Trade name: Barium chloride dihydrate

(Contd. of page 9)

Annex: Exposure scenario

- **Short title of the exposure scenario** Chemicals for Laboratory and industrial use
- **Sector of Use**
 - SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
 - SU9 Manufacture of fine chemicals
 - SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
 - SU24 Scientific research and development
- **Product category**
 - PC19 Intermediate
 - PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents
 - PC21 Laboratory chemicals
 - PC29 Pharmaceuticals
 - PC39 Cosmetics, personal care products
 - PC40 Extraction agents
- **Process category**
 - PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
 - PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
 - PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
 - PROC4 Chemical production where opportunity for exposure arises
 - PROC5 Mixing or blending in batch processes
 - PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
 - PROC15 Use as laboratory reagent
- **Environmental release category**
 - ERC1 Manufacture of the substance
 - ERC2 Formulation into mixture
 - ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
 - ERC6a Use of intermediate
- **Description of the activities / processes covered in the Exposure Scenario**
See section 1 of the annex to the Safety Data Sheet.
- **Conditions of use**
- **Duration and frequency** 5 workdays/week.
- **Physical parameters**
- **Physical state** Solid
- **Concentration of the substance in the mixture** Raw material.
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure**
Observe section 6 of the Safety Data Sheet (Accidental release measures).
- **Other operational conditions affecting worker exposure**
Do not breathe dust.
Observe instructions for use / storage.
Keep away from food, drink and animal feedingstuffs.
Avoid breathing particles.
- **Other operational conditions affecting consumer exposure** Keep out of the reach of children.
- **Other operational conditions affecting consumer exposure during the use of the product** Not applicable.
- **Risk management measures**
- **Worker protection**
- **Organisational protective measures**
Provide Internal Plant Instruction.
Employment restrictions concerning juveniles must be observed.
Employment restrictions concerning pregnant and lactating women must be observed.
Persons, who tend to skin diseases or other hypersensitivity reactions of the skin, should not handle the product.
Keep away from food, beverages and animal feed.
- **Technical protective measures** Ensure that suitable extractors are available on processing machines

(Contd. on page 11)

Safety data sheet

according to 1907/2006/EC, Article 31

revised on: 14.01.2022

Version number 4

Creation Date: 25.10.2018

Trade name: Barium chloride dihydrate

(Contd. of page 10)

· Personal protective measures

The usual precautionary measures are to be adhered to when handling chemicals.

Do not inhale dust / smoke / mist.

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device. If air-purifying respiratory protection is required according to the risk assessment, wear a respirator with full-face mask with combination filter (US) or with filter type ABEK (EN 14387) filter cartridge. If the respirator is the only protective measure, an ambient air self-contained breathing apparatus with a full face mask must be worn. Respirators and components must be approved to appropriate government standards (for example, NIOSH (US) or CEN (EU)). Translated with www.DeepL.com/Translator (free version)

· Measures for consumer protection

Ensure adequate labelling.

Keep locked up and out of the reach of children.

· Environmental protection measures

Avoid release to the environment. Obtain special instructions / refer to Safety Data Sheet.

· Water No special measures required.**· Disposal measures** Ensure that waste is collected and contained.**· Disposal procedures**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· Waste type Partially emptied and uncleaned packaging**· Exposure estimation****· Consumer** Not relevant for this Exposure Scenario.**· Guidance for downstream users** No further relevant information available.

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