

# Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU



## Barium chloride dihydrate $\geq 99\%$ , p.a., ACS, ISO

article number: **4453**  
Version: **3.0 en**  
Replaces version of: 2023-07-27  
Version: (2)

date of compilation: 2016-11-14  
Revision: 2024-03-02

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

### 1.1 Product identifier

|                                 |   |
|---------------------------------|---|
| Identification of the substance | <b>Barium chloride dihydrate <math>\geq 99\%</math>, p.a., ACS, ISO</b> |
| Article number                  | 4453  |
| Registration number (REACH)     | 01-2119502547-42-xxxx   |
| Index number in CLP Annex VI    | 056-004-00-8  |
| EC number                       | 233-788-1   |
| CAS number                      | 10326-27-9  |

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

|                           |  |
|---------------------------|--|
| Relevant identified uses: | Laboratory chemical<br>Laboratory and analytical use   |
| Uses advised against:     | Do not use for products which come into contact with foodstuffs. Do not use for private purposes (household). Food, drink and animal feeding-stuffs. |

### 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](mailto:sicherheit@carlroth.de)

**Website:** [www.carlroth.de](http://www.carlroth.de)

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

**e-mail (competent person):** [sicherheit@carlroth.de](mailto:sicherheit@carlroth.de)

### 1.4 Emergency telephone number

| Name   | Street        | Postal code/city | Telephone       | Website   |
|--|---------------|------------------|-----------------|---|
| National Poisons Information Centre<br>Beaumont Hospital | Beaumont Road | Dublin 9         | +353 1 809 2166 | <a href="https://www.poisons.ie/">https://www.poisons.ie/</a> |

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## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

| Section | Hazard class            | Cat-egory | Hazard class and category | Hazard statement |
|---------|-------------------------|-----------|---------------------------|------------------|
| 3.10    | Acute toxicity (oral)   | 3         | Acute Tox. 3              | H301             |
| 3.11    | Acute toxicity (inhal.) | 4         | Acute Tox. 4              | H332             |

For full text of abbreviations: see SECTION 16

### 2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

**Signal word**

**Danger**

**Pictograms**

GHS06



**Hazard statements**

H301 Toxic if swallowed  
H332 Harmful if inhaled

**Precautionary statements**

**Precautionary statements - response**

P312 Call a POISON CENTRE/doctor if you feel unwell  
P330 Rinse mouth

**Labelling of packages where the contents do not exceed 125 ml**

Signal word: **Danger**

Symbol(s)



H301 Toxic if swallowed.  
P330 Rinse mouth.

### 2.3 Other hazards

**Results of PBT and vPvB assessment**

According to the results of its assessment, this substance is not a PBT or a vPvB.

**Endocrine disrupting properties**

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0,1\%$ .

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### SECTION 3: Composition/information on ingredients

#### 3.1 Substances

|                   |                           |
|-------------------|---------------------------|
| Name of substance | Barium chloride dihydrate |
| Molecular formula | BaCl <sub>2</sub>         |
| Molar mass        | 244,3 g/mol               |
| REACH Reg. No     | 01-2119502547-42-xxxx     |
| CAS No            | 10326-27-9                |
| EC No             | 233-788-1                 |
| Index No          | 056-004-00-8              |

#### Substance, Specific Conc. Limits, M-factors, ATE

| Specific Conc. Limits | M-Factors | ATE                       | Exposure route                    |
|-----------------------|-----------|---------------------------|-----------------------------------|
| -                     | -         | 118 mg/kg<br>>1,5 mg/l/4h | oral<br>inhalation: dust/<br>mist |

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures



##### General notes

Take off contaminated clothing.

##### Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

##### Following skin contact

Rinse skin with water/shower. In all cases of doubt, or when symptoms persist, seek medical advice.

##### 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 immediately and drink plenty of water. Call a physician immediately.

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

Cardiac arrhythmias, Cough, Irritant effects, Dyspnoea

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

Give sodium sulfate as laxative (1 tablespoon in 1 glass of water).

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media



#### Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings!  
water, foam, alcohol resistant foam, dry extinguishing powder, ABC-powder

#### Unsuitable extinguishing media

water jet

### 5.2 Special hazards arising from the substance or mixture

Non-combustible.

#### Hazardous combustion products

In case of fire may be liberated: Hydrogen chloride (HCl)

### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. 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

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. Do not breathe dust.

### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

### 6.3 Methods and material for containment and cleaning up

#### Advice on how to contain a spill

Covering of drains. Take up mechanically.

#### 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. Clear contaminated areas thoroughly.

#### Advice on general occupational hygiene

When using do not eat or drink. Thorough skin-cleansing after handling the product.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place.

#### Incompatible substances or mixtures

Observe hints for combined storage.

#### Consideration of other advice:

Store locked up.

#### Ventilation requirements

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted.

#### 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)

| Country | Name of agent             | CAS No     | Identifier | TWA [mg/m <sup>3</sup> ] | STEL [mg/m <sup>3</sup> ] | Ceiling-C [mg/m <sup>3</sup> ] | Notation | Source               |
|---------|---------------------------|------------|------------|--------------------------|---------------------------|--------------------------------|----------|----------------------|
| EU      | barium, soluble compounds | 10361-37-2 | IOELV      | 0,5                      |                           |                                | Ba       | 2006/15/EC           |
| IE      | barium, soluble compounds | 10361-37-2 | OELV       | 0,5                      |                           |                                | Ba       | S.I. No. 619 of 2001 |

#### Notation

Ba Calculated as Ba (barium)

Ceiling-C Ceiling value is a limit value above which exposure should not occur

STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

#### Human health values

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| Relevant DNELs and other threshold levels |                       |                                    |                   |                            |
|---|-----------------------|------------------------------------|-------------------|----------------------------|
| Endpoint                                  | Threshold level       | Protection goal, route of exposure | Used in           | Exposure time              |
| DNEL                                      | 8,8 mg/m <sup>3</sup> | human, inhalatory                  | worker (industry) | chronic - systemic effects |
| DNEL                                      | 43,2 mg/kg bw/day     | human, dermal                      | worker (industry) | chronic - systemic effects |

### Environmental values

| Relevant PNECs and other threshold levels |                             |                       |                              |                              |
|---|-----------------------------|-----------------------|------------------------------|------------------------------|
| End-point                                 | Threshold level             | Organism              | Environmental compartment    | Exposure time                |
| PNEC                                      | 174 $\mu\text{g}/\text{l}$  | aquatic organisms     | freshwater                   | short-term (single instance) |
| PNEC                                      | 94,3 $\text{mg}/\text{l}$   | aquatic organisms     | sewage treatment plant (STP) | short-term (single instance) |
| PNEC                                      | 908 $\text{mg}/\text{kg}$   | aquatic organisms     | freshwater sediment          | short-term (single instance) |
| PNEC                                      | 314,9 $\text{mg}/\text{kg}$ | terrestrial organisms | soil                         | short-term (single instance) |

## 8.2 Exposure controls

### Individual protection measures (personal protective equipment)

#### Eye/face protection



Use safety goggle with side protection.

#### Skin protection



#### • 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

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- **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). P3 (filters at least 99,95 % 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

|  |  |
|--|--|
| Physical state   | solid  |
| Form   | -  |
| Colour   | white  |
| Odour  | odourless                                    |
| Melting point/freezing point                             | >600 °C at 1.003 hPa (ECHA)                  |
| Boiling point or initial boiling point and boiling range | 1.560 °C                                     |
| Flammability   | non-combustible                              |
| Lower and upper explosion limit                          | not determined                               |
| Flash point  | not applicable                               |
| Auto-ignition temperature                                | not determined                               |
| Decomposition temperature                                | >100 °C                                      |
| pH (value)   | 5,2 – 8 (in aqueous solution: 50 g/l, 20 °C) |
| Kinematic viscosity                                      | not relevant                                 |
| <u>Solubility(ies)</u>                                   |  |
| Water solubility   | 370 g/l at 20 °C                             |
| <u>Partition coefficient</u>                             |  |
| Partition coefficient n-octanol/water (log value):       | not relevant (inorganic)                     |
| Vapour pressure  | not determined                               |

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### Density and/or relative density

|                          |  |
|--------------------------|--|
| Density                  | 3,9 g/cm <sup>3</sup> at 20 °C (anhydrous)     |
| Relative vapour density  | Information on this property is not available. |
| Bulk density             | 1.200 – 1.400 kg/m <sup>3</sup>                |
| Particle characteristics | No data available.                             |

### Other safety parameters

Oxidising properties none

## 9.2 Other information

|   |   |
|---|---|
| Information with regard to physical hazard classes: | hazard classes acc. to GHS (physical hazards): not relevant |
| Other safety characteristics:                       | 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 oxidiser, Reducing agents, Acids

### 10.4 Conditions to avoid

Keep away from heat. Decomposition takes place from temperatures above: >100 °C.

### 10.5 Incompatible materials

There is no additional information.

### 10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

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

**Classification according to GHS (1272/2008/EC, CLP)**

#### Acute toxicity

Toxic if swallowed. Harmful if inhaled.

| Acute toxicity |          |           |         |           |        |
|----------------|----------|-----------|---------|-----------|--------|
| Exposure route | Endpoint | Value     | Species | Method    | Source |
| oral           | LD50     | 118 mg/kg | rat     | anhydrous | IUCLID |



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### **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.

### **Germ cell mutagenicity**

Shall not be classified as germ cell mutagenic.

### **Carcinogenicity**

Shall not be classified as carcinogenic.

### **Reproductive toxicity**

Shall not be classified 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**

Data are not available.

### **• If in eyes**

Data are not available.

### **• If inhaled**

Data are not available.

### **• If on skin**

Data are not available.

### **• Other information**

Cardiac arrhythmias, Dyspnoea

## **11.2 Endocrine disrupting properties**

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0,1\%$ .

## **11.3 Information on other hazards**

There is no additional information.

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## SECTION 12: Ecological information

### 12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

| Aquatic toxicity (acute) |                      |         |        |               |
|--------------------------|----------------------|---------|--------|---------------|
| Endpoint                 | Value                | Species | Source | Exposure time |
| LC50                     | $>3,5 \text{ mg/l}$  | fish    | ECHA   | 96 h          |
| ErC50                    | $>1,15 \text{ mg/l}$ | algae   | ECHA   | 72 h          |

| Aquatic toxicity (chronic) |                       |                |        |               |
|----------------------------|-----------------------|----------------|--------|---------------|
| Endpoint                   | Value                 | Species        | Source | Exposure time |
| EC50                       | $>1.000 \text{ mg/l}$ | microorganisms | ECHA   | 3 h           |

### 12.2 Persistence and degradability

Data are not available.

### 12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

|     |             |
|-----|-------------|
| BCF | 68,4 (ECHA) |
|-----|-------------|

### 12.4 Mobility in soil

Data are not available.

### 12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

### 12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq 0,1\%$ .

### 12.7 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.

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### Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

### 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.

#### Properties of waste which render it hazardous

**HP 6** acute toxicity

### 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. Non-contaminated packages may be recycled.

## SECTION 14: Transport information

### 14.1 UN number or ID number

|           |         |
|-----------|---------|
| ADRRID    | UN 1564 |
| IMDG-Code | UN 1564 |
| ICAO-TI   | UN 1564 |

### 14.2 UN proper shipping name

|                |                           |
|----------------|---------------------------|
| ADRRID         | BARIUM COMPOUND, N.O.S.   |
| IMDG-Code      | BARIUM COMPOUND, N.O.S.   |
| ICAO-TI        | Barium compound, n.o.s.   |
| Technical name | Barium chloride dihydrate |

### 14.3 Transport hazard class(es)

|           |     |
|-----------|-----|
| ADRRID    | 6.1 |
| IMDG-Code | 6.1 |
| ICAO-TI   | 6.1 |

### 14.4 Packing group

|           |     |
|-----------|-----|
| ADRRID    | III |
| IMDG-Code | III |
| ICAO-TI   | III |

### 14.5 Environmental hazards

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 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

### 14.8 Information for each of the UN Model Regulations

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### Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) Additional information

|   |   |
|---|---|
| Proper shipping name  | BARIUM COMPOUND, N.O.S.   |
| Particulars in the transport document   | UN1564, BARIUM COMPOUND, N.O.S., (Barium chloride dihydrate), 6.1, III, (E) |
| Classification code   | T5  |
| Danger label(s)   | 6.1   |
|  |   |
| Special provisions (SP)   | 177, 274, 513, 587, 802(ADN)  |
| Excepted quantities (EQ)  | E1  |
| Limited quantities (LQ)   | 5 kg  |
| Transport category (TC)   | 2   |
| Tunnel restriction code (TRC)   | E   |
| Hazard identification No  | 60  |

### Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) Additional information

|   |                              |
|---|------------------------------|
| Classification code   | T5                           |
| Danger label(s)   | 6.1                          |
|  |                              |
| Special provisions (SP)   | 177, 274, 513, 587, 802(ADN) |
| Excepted quantities (EQ)  | E1                           |
| Limited quantities (LQ)   | 5 kg                         |
| Transport category (TC)   | 2                            |
| Hazard identification No  | 60                           |

### International Maritime Dangerous Goods Code (IMDG) - Additional information

|   |  |
|---|--|
| Proper shipping name  | BARIUM COMPOUND, N.O.S.  |
| Particulars in the shipper's declaration  | UN1564, BARIUM COMPOUND, N.O.S., (Barium chloride dihydrate), 6.1, III |
| Marine pollutant  | -  |
| Danger label(s)   | 6.1  |
|  |  |
| Special provisions (SP)   | 177, 223, 274  |
| Excepted quantities (EQ)  | E1   |
| Limited quantities (LQ)   | 5 kg   |
| EmS   | F-A, S-A   |


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|   |  |
|---|--|
| Stowage category  | A  |
| <b>International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information</b> |  |
| Proper shipping name  | Barium compound, n.o.s.  |
| Particulars in the shipper's declaration  | UN1564, Barium compound, n.o.s., (Barium chloride dihydrate), 6.1, III |
| Danger label(s)   | 6.1  |
|          |  |
| Special provisions (SP)   | A3, A82  |
| Excepted quantities (EQ)  | E1   |
| Limited quantities (LQ)   | 10 kg  |

## SECTION 15: Regulatory information

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

#### Relevant provisions of the European Union (EU)

##### Restrictions according to REACH, Annex XVII

not listed

##### List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list

Not listed.

##### Seveso Directive

| 2012/18/EU (Seveso III) |                                       |   |       |
|-------------------------|---------------------------------------|---|-------|
| No                      | Dangerous substance/hazard categories | Qualifying quantity (tonnes) for the application of lower and upper-tier requirements | Notes |
|                         | not assigned                          |   |       |

##### Deco-Paint Directive

|             |       |
|-------------|-------|
| VOC content | 0 %   |
| VOC content | 0 g/l |

##### Industrial Emissions Directive (IED)

|             |       |
|-------------|-------|
| VOC content | 0 %   |
| VOC content | 0 g/l |

##### Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

not listed

##### Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

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### Water Framework Directive (WFD)

#### List of pollutants (WFD)

| Name of substance         | Name acc. to inventory     | CAS No | Listed in | Remarks |
|---------------------------|----------------------------|--------|-----------|---------|
| Barium chloride dihydrate | Metals and their compounds |        | a)        |         |

#### Legend

a) Indicative list of the main pollutants

### Regulation on the marketing and use of explosives precursors

not listed

### Regulation on drug precursors

not listed

### Regulation on substances that deplete the ozone layer (ODS)

not listed

### Regulation concerning the export and import of hazardous chemicals (PIC)

not listed

### Regulation on persistent organic pollutants (POP)

not listed

### Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

### National inventories

| Country | Inventory  | Status                       |
|---------|------------|------------------------------|
| AU      | AIIC       | substance is listed          |
| CA      | DSL        | substance is listed          |
| CN      | IECSC      | substance is listed          |
| EU      | ECSI       | substance is listed          |
| EU      | REACH Reg. | substance is listed          |
| JP      | CSCL-ENCS  | substance is listed          |
| KR      | KECI       | substance is listed          |
| MX      | INSQ       | substance is listed          |
| NZ      | NZIoC      | substance is listed          |
| PH      | PICCS      | substance is listed          |
| TR      | CICR       | substance is listed          |
| TW      | TCSI       | substance is listed          |
| US      | TSCA       | substance is listed (ACTIVE) |
| VN      | NCI        | substance is listed          |

#### Legend

AIIC Australian Inventory of Industrial Chemicals  
CICR Chemical Inventory and Control Regulation  
CSCL-ENCS List of Existing and New Chemical Substances (CSCL-ENCS)  
DSL Domestic Substances List (DSL)

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### Legend

|            |   |
|------------|---|
| ECSI       | EC Substance Inventory (EINECS, ELINCS, NLP)                            |
| IECSC      | Inventory of Existing Chemical Substances Produced or Imported in China |
| INSQ       | National Inventory of Chemical Substances                               |
| KECI       | Korea Existing Chemicals Inventory                                      |
| NCI        | National Chemical Inventory   |
| NZIoC      | New Zealand Inventory of Chemicals                                      |
| PICCS      | Philippine Inventory of Chemicals and Chemical Substances (PICCS)       |
| REACH Reg. | REACH registered substances   |
| TCSI       | Taiwan Chemical Substance Inventory                                     |
| TSCA       | Toxic Substance Control Act   |

## 15.2 Chemical safety assessment

According to REACH, Article 14 (1) a chemical safety assessment has been carried out for this substance or components of this mixture when the substance has been registered in quantities of 10 tonnes or more per year per registrant.

## SECTION 16: Other information

### Indication of changes (revised safety data sheet)

| Section | Former entry (text/value)  | Actual entry (text/value)   | Safety-relevant |
|---------|--|---|-----------------|
| 2.3     | Endocrine disrupting properties:<br>Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$ . | Endocrine disrupting properties:<br>Does not contain an endocrine disruptor (ED) at a concentration of $\geq 0,1\%$ . | yes             |

### Abbreviations and acronyms

| Abbr.      | Descriptions of used abbreviations   |
|------------|--|
| 2006/15/EC | Commission Directive establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC |
| ADR        | Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)                                      |
| ATE        | Acute Toxicity Estimate  |
| BCF        | Bioconcentration factor  |
| CAS        | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)   |
| Ceiling-C  | Ceiling value  |
| CLP        | Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures   |
| DGR        | Dangerous Goods Regulations (see IATA/DGR)   |
| DNEL       | Derived No-Effect Level  |
| EC50       | Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval                   |
| EC No      | The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)                  |
| ED         | Endocrine disruptor  |
| EINECS     | European Inventory of Existing Commercial Chemical Substances  |
| ELINCS     | European List of Notified Chemical Substances  |
| EmS        | Emergency Schedule   |
| ErC50      | $\equiv$ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control                      |

# Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU



## Barium chloride dihydrate $\geq 99$ %, p.a., ACS, ISO

article number: 4453

| Abbr.                | Descriptions of used abbreviations  |
|----------------------|---|
| 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   |
| ICAO-TI              | Technical instructions for the safe transport of dangerous goods by air   |
| IMDG                 | International Maritime Dangerous Goods Code   |
| IMDG-Code            | 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  |
| IOELV                | Indicative occupational exposure limit value  |
| LC50                 | Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval                       |
| LD50                 | Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval  |
| NLP                  | No-Longer Polymer   |
| PBT                  | Persistent, Bioaccumulative and Toxic   |
| PNEC                 | Predicted No-Effect Concentration   |
| 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) |
| S.I. No. 619 of 2001 | Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001   |
| STEL                 | Short-term exposure limit   |
| SVHC                 | Substance of Very High Concern  |
| TWA                  | Time-weighted average   |
| VOC                  | Volatile Organic Compounds  |
| vPvB                 | Very Persistent and very Bioaccumulative  |

### Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

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

| Code | Text                |
|------|---------------------|
| H301 | Toxic if swallowed. |
| H332 | Harmful if inhaled. |



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### Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.