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

1.1. Product identifier

Product name : Barium chloride-2-hydrate
SDS-number : 000000021154
Type of product : Substance
Remarks : SDS according to Art. 31 of Regulation (EC) 1907/2006.
Chemical name : Barium chloride dihydrate
Index-No. : 056-004-00-8
REACH Registration Number : 01-2119502547-42

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

Use of the Substance/Mixture : Laboratory chemicals
Uses advised against : none

1.3. Details of the supplier of the safety data sheet

Company : Honeywell Specialty Chemicals Seelze
           Honeywell International, Inc.
           Wunstorf Street 40
           30926 Seelze
           Germany
           115 Tabor Road
           Morris Plains, NJ 07950-2546
           USA

Telephone : (49) 5137-999 0
Telefax : (49) 5137-999 123
For further information, please contact: PMTEU Product Stewardship:
                     SafetyDataSheet@Honeywell.com

1.4. Emergency telephone number

Emergency telephone number : +1-703-527-3887 (ChemTrec-Transport)
                             +1-303-389-1414 (Medical)
Country based Poison Control Center : see chapter 15.1
2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Acute toxicity Category 3 - Oral
H301 Toxic if swallowed.
Acute toxicity Category 4 - Inhalation
H332 Harmful if inhaled.
Eye irritation Category 2
H319 Causes serious eye irritation.

2.2. Label elements

REGULATION (EC) No 1272/2008

Signal word: Danger

Hazard pictograms:

Signal word: Danger

Hazard statements:
H301 Toxic if swallowed.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.

Precautionary statements:
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P284 Wear respiratory protection.
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

2.3. Other hazards

Results of PBT and vPvB assessment, see chapter 12.5.

SECTION 3: Composition/information on ingredients
3.1. Substance

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Index-No.</th>
<th>REACH Registration Number</th>
<th>Classification 1272/2008</th>
<th>Concentration</th>
<th>Remarks</th>
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<td>Barium chloride dihydrate</td>
<td>10326-27-9</td>
<td>056-004-00-8</td>
<td>01-2119502547-42 233-788-1</td>
<td>Acute Tox. 3; H301 Acute Tox. 4; H332 Eye Irrit. 2; H319</td>
<td>100 %</td>
<td>1*</td>
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1* - For specific concentration limits see Annexes of 1272/2008

3.2. Mixture

Not applicable

Occupational Exposure Limit(s), if available, are listed in Section 8. For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

*General advice:* First aider needs to protect himself. Move out of dangerous area. Take off all contaminated clothing immediately.

*Inhalation:* Remove to fresh air. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present. Call a physician.

*Skin contact:* Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Call a physician if irritation develops or persists.

*Eye contact:* Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician if irritation develops or persists.

*Ingestion:* When swallowed, allow water to be drunk. Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed
SECTION 5: Firefighting measures

5.1. Extinguishing media

*Suitable extinguishing media:*
Water spray
Foam
Carbon dioxide (CO2)
Dry powder

*Extinguishing media which shall not be used for safety reasons:*
High volume water jet

5.2. Special hazards arising from the substance or mixture

The product is not flammable.
Heating can release vapours which can be ignited.
In case of fire hazardous decomposition products may be produced such as:
Toxic metal oxide fumes
Gaseous hydrogen chloride (HCl).

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit.
No unprotected exposed skin areas.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Wear personal protective equipment. Unprotected persons must be kept away. Ensure adequate ventilation.

6.2. Environmental precautions
Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not flush into surface water or sanitary sewer system. Do not allow run-off from fire fighting to enter drains or water courses.

6.3. Methods and materials for containment and cleaning up

Use mechanical handling equipment.
Pick for disposal in tightly closed containers
Personal protection through wearing a tightly closed chemical protection suit and a self-contained breathing apparatus.

6.4. Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling:
Exhaust ventilation at the object is necessary. Wear suitable protective clothing and gloves.

Advice on protection against fire and explosion:
Normal measures for preventive fire protection.

Hygiene measures:
Take off all contaminated clothing immediately. Remove and wash contaminated clothing before re-use. Keep working clothes separately. Separate rooms are required for washing, showering and changing clothes. Wash hands before breaks and at the end of workday. When using do not eat or drink.

7.2. Conditions for safe storage, including any incompatibilities

Further information on storage conditions:
Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place.

7.3. Specific end use(s)

no additional data available
### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

**Occupational exposure limits:**

<table>
<thead>
<tr>
<th>Components</th>
<th>Basis / Value type</th>
<th>Value / Form of exposure</th>
<th>Exceeding Factor</th>
<th>Remarks</th>
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<td>EH40 WEL TWA</td>
<td>0.5 mg/m³ as Ba</td>
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<td></td>
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<td>Barium chloride dihydrate</td>
<td>EH40 WEL</td>
<td>as Ba</td>
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<td>EU ELV TWA</td>
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<td>Indicative</td>
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</table>

**TWA - Time weighted average**

**DNEL/ PNEC-Values**

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<tr>
<th>Component</th>
<th>End-use/impact</th>
<th>Exposure duration</th>
<th>Value</th>
<th>Exposure routes</th>
<th>Remarks</th>
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</table>
Barium chloride-2-hydrate

8.2. Exposure controls

Occupational exposure controls

The Personal Protective Equipment must be in accordance with EN standards: respirator EN 136, 140, 149; safety glasses EN 166; protective suit: EN 340, 463, 468, 943-1, 943-2; gloves EN 374, 511; safety shoes EN-ISO 20345.

Do not breathe dust.

Engineering measures

Use with local exhaust ventilation.

Personal protective equipment

Respiratory protection:

In the case of dust or aerosol formation use respirator with an approved filter.

Hand protection:

Glove material: Natural Latex
Break through time: > 480 min
Glove thickness: 0,6 mm
Lapren®706
Gloves must be inspected prior to use.
Replace when worn.

Remarks: Supplementary note: The specifications are based on information and tests from similar substances by analogy.

Due to varying conditions (e.g. temperature or other strains) it must be considered that the usage of a chemical protective glove in practice may be much shorter than the permeation time determined in accordance with EN 374.

Since actual conditions of practical use often deviate from standardised conditions according EN 374 the glove manufacturer recommends to use the chemical protective glove in practice not longer than 50% of the recommended permeation time.

Manufacturer’s directions for use should be observed because of great diversity of types. Suitable gloves tested according EN 374 are supplied e.g. from KCL GmbH, D-36124 Eichenzell, Vertrieb@kcl.de

Eye protection:

Safety goggles

Skin and body protection:
Wear suitable protective equipment. Wear as appropriate: Protective suit

Environmental exposure controls
Handle in accordance with local environmental regulations and good industrial practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form: solid
Colour: colourless
Odour: odourless
molecular weight: 244,26 g/mol
Melting point/range: 962 °C
Boiling point/boiling range: 1.560 °C at 1.013 hPa
Flash point: Not applicable
Flammability (solid, gas): The product is not flammable.
Ignition temperature: Not applicable
Auto-ignition temperature: not auto-flammable
Lower explosion limit: Not applicable
Upper explosion limit: Not applicable
Vapour pressure: no data available
Density: 3,1 g/cm3 at 20 °C
Density: 3,100 g/cm3
Bulk density: ca. 2.200 kg/m3
Viscosity, dynamic: no data available
Viscosity, kinematic: no data available

pH: 5.2 - 8.0
   Concentration: 50 g/l at 25 °C

Water solubility: 269 g/l at 25 °C completely soluble

Partition coefficient: n-octanol/water: no data available

Relative vapour density: no data available

Evaporation rate: no data available

9.2 Other Information
no additional data available

SECTION 10: Stability and reactivity

10.1. Reactivity
Stable under recommended storage conditions.

10.2. Chemical stability
113 °C Decomposition temperature with dehydration

10.3. Possibility of hazardous reactions
Hazardous polymerisation does not occur.

10.4. Conditions to avoid
Avoid dust formation.

10.5. Incompatible materials
Incompatible with acids.

10.6. Hazardous decomposition products
Fire may cause evolution of:
Toxic metal oxide fumes
Gaseous hydrogen chloride (HCl).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity:
Classification based on Annex VI of regulation 1272/2008/EC.

Acute dermal toxicity:
no data available

Acute inhalation toxicity:
LC50
Species: Rat
Value: > 1.1 mg/l
Exposure time: 243 min
Method: OECD Test Guideline 403

Skin irritation:
Species: reconstructed human epidermis (RhE)
Result: No skin irritation

Eye irritation:
Species: Rabbit
Result: Irritating to eyes.
Method: OECD Test Guideline 405

Respiratory or skin sensitisation:
Mouse local lymph node assay
Species: Mouse
Result: non-sensitizing
Method: OECD Test Guideline 429

Repeated dose toxicity:
Note: Not classified due to data which are conclusive although insufficient for classification.

Carcinogenicity:
Note: Not classified due to data which are conclusive although insufficient for classification.

Germ cell mutagenicity:
Test Method: gene mutation test
Metabolic activation: with and without metabolic activation
Result: negative
Method: OECD Test Guideline 471
Test Method: Chromosome aberration test in vitro
Metabolic activation: with and without metabolic activation
Result: negative
Method: OECD Test Guideline 473

Test Method: In vitro gene mutation study in mammalian cells
Cell type: Mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Result: negative
Method: OECD Test Guideline 476

Aspiration hazard:
no data available

Other information:
no data available

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish:
LC50 static test
Species: Danio rerio (zebra fish)
Value: > 174 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to aquatic plants:
EC50 Growth rate
Species: Pseudokirchneriella subcapitata (green algae)
Value: > 85,3 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to aquatic invertebrates:
LC50 static test
Species: Daphnia magna (Water flea)
Value: 14,5 mg/l
Exposure time: 48 h
12.2. Persistence and degradability

Biodegradability:
The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

no data available

12.4. Mobility in soil

no data available

12.5. Results of PBT and vPvB assessment

Not applicable

12.6. Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product:
Dispose according to legal requirements.

Packaging:
Legal requirements are to be considered in regard of reuse or disposal of used packaging materials

Further information:
Provisions relating to waste:
EC Directive 2006/12/EC; 2008/98/EEC
Regulation No. 1013/2006

For personal protection see section 8.

SECTION 14: Transport information

ADR/RID
UN Number : 1564
Description of the goods : BARIUM COMPOUND, N.O.S.
                        (BARIUM CHLORIDE)
Class : 6.1
Packaging group : III
Classification Code : T5
Hazard Identification : 60
Number
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Barium chloride-2-hydrate
000000021154
Version 2.0 Revision Date 12.02.2019 Supersedes 1

ADR/RID-Labels : 6.1
Environmentally hazardous : no

IATA
UN Number : 1564
Description of the goods : Barium compound, n.o.s.
(Barium chloride)
Class : 6.1
Packaging group : III
Hazard Labels : 6.1

IMDG
UN Number : 1564
Description of the goods : BARIUM COMPOUND, N.O.S.
(BARIUM CHLORIDE)
Class : 6.1
Packaging group : III
Hazard Labels : 6.1
EmS Number : F-A, S-A
Marine pollutant : no

SECTION 15: Regulatory information

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

<table>
<thead>
<tr>
<th>Basis</th>
<th>Value</th>
<th>Remarks</th>
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<td>Directive 2012/18/EC</td>
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Poison Control Center

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<th>Country</th>
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<tr>
<td>Austria</td>
<td>+4314064343</td>
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<tr>
<td>Belgium</td>
<td>070 245245</td>
<td>Lithuania</td>
<td>+370532362052</td>
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<tr>
<td>Bulgaria</td>
<td>(+35929154233</td>
<td>Luxembourg</td>
<td>070245245; (+352)80002-5500</td>
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### Barium chloride-2-hydrate

**000000021154**  
Version 2.0   
Revision Date 12.02.2019   
Supersedes 1

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<td>France</td>
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| Sweden      | 112 (local)  
|            | Girl Information; +46104566786 |
| Switzerland | 145              |
| United Kingdom | no data available |

### Other inventory information

- **US. Toxic Substances Control Act**  
  On TSCA Inventory

- **Australia. Industrial Chemical (Notification and Assessment) Act**  
  On the inventory, or in compliance with the inventory

- **Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL)**  
  All components of this product are on the Canadian DSL

- **Japan. Kashin-Hou Law List**  
  On the inventory, or in compliance with the inventory

- **Korea. Existing Chemicals Inventory (KECI)**  
  On the inventory, or in compliance with the inventory

- **Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act**  
  On the inventory, or in compliance with the inventory

- **China. Inventory of Existing Chemical Substances**  
  On the inventory, or in compliance with the inventory

- **New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand**  
  On the inventory, or in compliance with the inventory
15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Text of H-statements referred to under heading 3

Barium chloride dihydrate:  
H301  Toxic if swallowed.  
H319  Causes serious eye irritation.  
H332  Harmful if inhaled.

Further information

All directives and regulations refer to amended versions.  
Vertical lines in the left hand margin indicate a relevant amendment from the previous version.

Abbreviations:
EC  European Community  
CAS  Chemical Abstracts Service  
DNEL  Derived no effect level  
PNEC  Predicted no effect level  
vPvB  Very persistent and very biaccumulative substance  
PBT  Persistent, bioaccumulative and toxic substance

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user.  
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