

## SAFETY DATA SHEET

Version 4.4  
Revision Date 07/09/2014  
Print Date 09/15/2014

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**1. PRODUCT AND COMPANY IDENTIFICATION****1.1 Product identifiers**

Product name : Barium chloride  
  
Product Number : 342920  
Brand : Aldrich  
Index-No. : 056-004-00-8  
  
CAS-No. : 10361-37-2

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

Identified uses : Laboratory chemicals, Manufacture of substances

**1.3 Details of the supplier of the safety data sheet**

Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA  
  
Telephone : +1 800-325-5832  
Fax : +1 800-325-5052

**1.4 Emergency telephone number**

Emergency Phone # : (314) 776-6555

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**2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute toxicity, Oral (Category 3), H301  
Acute toxicity, Inhalation (Category 4), H332  
Eye irritation (Category 2A), H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal word

Danger

Hazard statement(s)

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

Precautionary statement(s)

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P280 Wear protective gloves/ eye protection/ face protection.  
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position 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.

P312 Call a POISON CENTER or doctor/ physician if you feel unwell.

P321 Specific treatment (see supplemental first aid instructions on this label).

P330 Rinse mouth.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P405 Store locked up.

P501 Dispose of contents/ container to an approved waste disposal plant.

**2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none**

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**3.1 Substances**

Formula : BaCl<sub>2</sub>  
 Molecular Weight : 208.23 g/mol  
 CAS-No. : 10361-37-2  
 EC-No. : 233-788-1  
 Index-No. : 056-004-00-8

**Hazardous components**

| Component              | Classification  | Concentration |
|------------------------|---|---------------|
| <b>Barium chloride</b> |   |               |
|                        | Acute Tox. 3; Acute Tox. 4; Eye Irrit. 2A; H301, H319, H332 | 90 - 100 %    |

For the full text of the H-Statements mentioned in this Section, see Section 16.

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**4. FIRST AID MEASURES**

**4.1 Description of first aid measures**

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

no data available

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**5. FIREFIGHTING MEASURES**

**5.1 Extinguishing media**

**Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

## 5.2 Special hazards arising from the substance or mixture

Hydrogen chloride gas, Barium oxide

## 5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

## 5.4 Further information

no data available

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## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.  
For personal protection see section 8.

### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

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

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### 6.4 Reference to other sections

For disposal see section 13.

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## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Avoid contact with skin and eyes. Avoid formation of dust and aerosols.  
Provide appropriate exhaust ventilation at places where dust is formed.  
For precautions see section 2.2.

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

Keep container tightly closed in a dry and well-ventilated place.

Hygroscopic. Keep in a dry place.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

| Component       | CAS-No.    | Value  | Control parameters    | Basis  |
|-----------------|------------|--|-----------------------|--|
| Barium chloride | 10361-37-2 | TWA  | 0.5 mg/m <sup>3</sup> | USA. NIOSH Recommended Exposure Limits   |
|                 |            | TWA  | 0.5 mg/m <sup>3</sup> | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
|                 |            | TWA  | 0.5 mg/m <sup>3</sup> | USA. ACGIH Threshold Limit Values (TLV)  |
|                 | Remarks    | Eye, skin, & Gastrointestinal irritation<br>Muscular stimulation<br>Not classifiable as a human carcinogen |                       |  |
|                 |            | TWA  | 0.5 mg/m <sup>3</sup> | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000                    |

### 8.2 Exposure controls

#### Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

## Personal protective equipment

### Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

#### Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- |  |  |
|--|--|
| a) Appearance                              | Form: powder<br>Colour: white                        |
| b) Odour                                   | odourless  |
| c) Odour Threshold                         | no data available                                    |
| d) pH                                      | no data available                                    |
| e) Melting point/freezing point            | Melting point/range: 963 °C (1,765 °F) - lit.        |
| f) Initial boiling point and boiling range | 1,560 °C (2,840 °F) at ca.1,013.25 hPa (760.00 mmHg) |
| g) Flash point                             | not applicable                                       |
| h) Evaporation rate                        | no data available                                    |
| i) Flammability (solid, gas)               | no data available                                    |
| j) Upper/lower flammability or             | no data available                                    |

explosive limits

- |   |  |
|---|--|
| k) Vapour pressure                        | no data available                        |
| l) Vapour density                         | no data available                        |
| m) Relative density                       | 3.856 g/cm <sup>3</sup> at 25 °C (77 °F) |
| n) Water solubility                       | 370 g/l at 25 °C (77 °F) - soluble       |
| o) Partition coefficient: n-octanol/water | no data available                        |
| p) Auto-ignition temperature              | no data available                        |
| q) Decomposition temperature              | no data available                        |
| r) Viscosity                              | no data available                        |
| s) Explosive properties                   | no data available                        |
| t) Oxidizing properties                   | no data available                        |

## 9.2 Other safety information

no data available

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

no data available

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

Strong oxidizing agents

### 10.6 Hazardous decomposition products

Other decomposition products - no data available

In the event of fire: see section 5

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - rat - male and female - 100 - 300 mg/kg  
(OECD Test Guideline 401)

Inhalation: no data available

Dermal: no data available

no data available

#### Skin corrosion/irritation

no data available

#### Serious eye damage/eye irritation

no data available

#### Respiratory or skin sensitisation

no data available

### **Germ cell mutagenicity**

Ames test

S. typhimurium

Result: negative

### **Carcinogenicity**

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

### **Reproductive toxicity**

Reproductive toxicity - rat - Intratesticular

Paternal Effects: Testes, epididymis, sperm duct.

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

no data available

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

no data available

### **Aspiration hazard**

no data available

### **Additional Information**

Repeated dose toxicity - rat - male and female - Oral - No observed adverse effect level - 209 mg/kg

RTECS: CQ8750000

Vomiting, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

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## **12. ECOLOGICAL INFORMATION**

### **12.1 Toxicity**

Toxicity to fish static test LC50 - Danio rerio (zebra fish) - > 174 mg/l - 96 h  
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 14.5 mg/l - 48 h

Toxicity to algae Growth inhibition EC50 - Pseudokirchneriella subcapitata (green algae) - > 100 mg/l - 72 h  
(OECD Test Guideline 201)

Toxicity to bacteria Respiration inhibition EC50 - Sludge Treatment - > 1,000 mg/l - 3 h  
(OECD Test Guideline 209)

### **12.2 Persistence and degradability**

no data available

### **12.3 Bioaccumulative potential**

no data available

### **12.4 Mobility in soil**

no data available

## 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

## 12.6 Other adverse effects

no data available

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## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

#### Contaminated packaging

Dispose of as unused product.

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## 14. TRANSPORT INFORMATION

### DOT (US)

UN number: 1564      Class: 6.1      Packing group: III

Proper shipping name: Barium compounds, n.o.s. (Barium chloride)

Reportable Quantity (RQ):

Marine pollutant: No

Poison Inhalation Hazard: No

### IMDG

UN number: 1564      Class: 6.1      Packing group: III      EMS-No: F-A, S-A

Proper shipping name: BARIUM COMPOUND, N.O.S. (Barium chloride)

Marine pollutant: No

### IATA

UN number: 1564      Class: 6.1      Packing group: III

Proper shipping name: Barium compound, n.o.s. (Barium chloride)

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## 15. REGULATORY INFORMATION

### SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

|                 | CAS-No.    | Revision Date |
|-----------------|------------|---------------|
| Barium chloride | 10361-37-2 | 2007-07-01    |

### SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

### Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

### Pennsylvania Right To Know Components

|                 | CAS-No.    | Revision Date |
|-----------------|------------|---------------|
| Barium chloride | 10361-37-2 | 2007-07-01    |

### New Jersey Right To Know Components

|                 | CAS-No.    | Revision Date |
|-----------------|------------|---------------|
| Barium chloride | 10361-37-2 | 2007-07-01    |

### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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## 16. OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3.

|            |                                |
|------------|--------------------------------|
| Acute Tox. | Acute toxicity                 |
| Eye Irrit. | Eye irritation                 |
| H301       | Toxic if swallowed.            |
| H319       | Causes serious eye irritation. |
| H332       | Harmful if inhaled.            |

### HMIS Rating

|                        |   |
|------------------------|---|
| Health hazard:         | 2 |
| Chronic Health Hazard: | * |
| Flammability:          | 0 |
| Physical Hazard        | 0 |

### NFPA Rating

|                    |   |
|--------------------|---|
| Health hazard:     | 2 |
| Fire Hazard:       | 0 |
| Reactivity Hazard: | 0 |

### Further information

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### Preparation Information

Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956

Version: 4.4

Revision Date: 07/09/2014

Print Date: 09/15/2014