# SAFETY DATA SHEET

Version 3.11
Revision Date 12/11/2017
Print Date 11/06/2018

## 1. PRODUCT AND COMPANY IDENTIFICATION

### 1.1 Product identifiers

Product name : Beryllium sulfate tetrahydrate

Product Number : 14270
Brand : Sigma-Aldrich
Index-No. : 004-002-00-2

CAS-No. : 7787-56-6

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

Identified uses : Laboratory chemicals, Synthesis 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 # : +1-703-527-3887 (CHEMTREC)

## 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 2), H330
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Skin sensitisation (Category 1), H317
Carcinogenicity (Category 1B), H350
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Specific target organ toxicity - repeated exposure (Category 1), H372
Acute aquatic toxicity (Category 2), H401
Chronic aquatic toxicity (Category 2), H411

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.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H330 Fatal if inhaled.

| | |
|---|---|
| H335 | May cause respiratory irritation. |
| H350 | May cause cancer. |
| H372 | Causes damage to organs through prolonged or repeated exposure. |
| H411 | Toxic to aquatic life with long lasting effects. |

Precautionary statement(s)

| | |
|---|---|
| P201 | Obtain special instructions before use. |
| P202 | Do not handle until all safety precautions have been read and understood. |
| P260 | Do not breathe 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. |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/ protective clothing/ eye protection/ face protection. |
| P284 | Wear respiratory protection. |
| P301 + P310 + P330 | IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth. |
| P302 + P352 | IF ON SKIN: Wash with plenty of soap and water. |
| P304 + P340 + P310 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. |
| 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. |
| P333 + P313 | If skin irritation or rash occurs: Get medical advice/ attention. |
| P337 + P313 | If eye irritation persists: Get medical advice/ attention. |
| P362 | Take off contaminated clothing and wash before reuse. |
| P391 | Collect spillage. |
| P403 + P233 | Store in a well-ventilated place. Keep container tightly closed. |
| 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

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**3.1 Substances**

| | | |
|---|---|---|
| Formula | : | $BeO_4S \cdot 4H_2O$ |
| Molecular weight | : | 177.14 g/mol |
| CAS-No. | : | 7787-56-6 |
| EC-No. | : | 236-842-2 |
| Index-No. | : | 004-002-00-2 |

**Hazardous components**

| Component | Classification | Concentration |
|---|---|---|
| **Beryllium sulphate tetrahydrate** | | |
| | Acute Tox. 3; Acute Tox. 2; Skin Irrit. 2; Eye Irrit. 2A; Skin Sens. 1; Carc. 1B; STOT SE 3; STOT RE 1; Aquatic Acute 2; Aquatic Chronic 2; H301, H315, H317, H319, H330, H335, H350, H372, H411 | 90 - 100 % |

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

## 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

## 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
No data available

### 5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information
No data available

## 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. Discharge into the environment must be avoided.

### 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.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.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.
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.

Moisture sensitive.
Storage class (TRGS 510): 6.1B: Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

### 7.3 Specific end use(s)

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

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

**Components with workplace control parameters**

| Component | CAS-No. | Value | Control parameters | Basis |
|---|---|---|---|---|
| Beryllium sulphate tetrahydrate | 7787-56-6 | TWA | 2.000000microgram per cubic meter | USA. Occupational Exposure Limits (OSHA) - Table Z-2 |
| | Remarks | Z27.29-1970 | | |
| | | CEIL | 5.000000microgram per cubic meter | USA. Occupational Exposure Limits (OSHA) - Table Z-2 |
| | | Z27.29-1970 | | |
| | | Peak | 25.000000microgram per cubic meter | USA. Occupational Exposure Limits (OSHA) - Table Z-2 |
| | | Z27.29-1970 | | |
| | | TWA | 0.000050 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| | | Beryllium sensitization<br>Chronic beryllium disease (berylliosis)<br>Confirmed human carcinogen<br>Danger of cutaneous absorption<br>Sensitizer | | |
| | | TWA | 0.000050 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| | | Beryllium sensitization<br>Chronic beryllium disease (berylliosis)<br>Adopted values or notations enclosed are those for which changes are proposed in the NIC<br>See Notice of Intended Changes (NIC)<br>Confirmed human carcinogen<br>Danger of cutaneous absorption<br>Sensitizer | | |
| | | C | 0.000500 mg/m3 | USA. NIOSH Recommended Exposure Limits |
| | | Potential Occupational Carcinogen<br>See Appendix A | | |
| | | See Table Z-2 | | |
| | | TWA | 2.000000microgram per cubic meter | USA. Occupational Exposure Limits (OSHA) - Table Z-2 |
| | | Z27.29-1970 | | |
| | | CEIL | 5.000000microgram per cubic meter | USA. Occupational Exposure Limits (OSHA) - Table Z-2 |
| | | Z27.29-1970 | | |
| | | Peak | 25.000000microgram per cubic meter | USA. Occupational Exposure Limits (OSHA) - Table Z-2 |
| | | Z27.29-1970 | | |

| | | | | |
|---|---|---|---|---|
| | | See Table Z-2 | | |
| | | TWA | 2microgram per cubic meter | USA. Occupational Exposure Limits (OSHA) - Table Z-2 |
| | | Z27.29-1970 | | |
| | | CEIL | 5microgram per cubic meter | USA. Occupational Exposure Limits (OSHA) - Table Z-2 |
| | | Z27.29-1970 | | |
| | | Peak | 25microgram per cubic meter | USA. Occupational Exposure Limits (OSHA) - Table Z-2 |
| | | Z27.29-1970 | | |
| | | C | 0.0005 mg/m3 | USA. NIOSH Recommended Exposure Limits |
| | | Potential Occupational Carcinogen<br>See Appendix A | | |
| | | PEL | 0.0002 mg/m3 | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| | | C | 0.025 mg/m3 | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |

**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 N100 (US) or type P3 (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. Discharge into the environment must be avoided.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

| | | |
|---|---|---|
| a) | Appearance | Form: crystalline<br>Colour: white |
| b) | Odour | No data available |
| c) | Odour Threshold | No data available |
| d) | pH | No data available |
| e) | Melting point/freezing point | Melting point/range: 550 - 600 °C (1,022 - 1,112 °F) |
| f) | Initial boiling point and boiling range | No data available |
| g) | Flash point | Not applicable |
| h) | Evaporation rate | No data available |
| i) | Flammability (solid, gas) | No data available |
| j) | Upper/lower flammability or explosive limits | No data available |
| k) | Vapour pressure | No data available |
| l) | Vapour density | No data available |
| m) | Relative density | 1.713 g/cm3 at 25 °C (77 °F) |
| n) | Water solubility | No data available |
| 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

## 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

Hazardous decomposition products formed under fire conditions. - Sulphur oxides, Beryllium oxides
Other decomposition products - No data available
In the event of fire: see section 5

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

**Acute toxicity**

LD50 Oral - Rat - 82 mg/kg

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**

**Germ cell mutagenicity**

Human
lymphocyte
Cytogenetic analysis

Human
lymphocyte
Sister chromatid exchange

Hamster
Embryo
Cytogenetic analysis

Hamster
Embryo
Morphological transformation.

Hamster
Embryo
Sister chromatid exchange

Rat
Other mutation test systems

**Carcinogenicity**

Carcinogenicity - Rat - Inhalation
Tumorigenic:Carcinogenic by RTECS criteria. Lungs, Thorax, or Respiration:Tumors.

Possible human carcinogen

| | |
|---|---|
| IARC: | 1 - Group 1: Carcinogenic to humans (Beryllium sulphate tetrahydrate) |
| NTP: | Known - Known to be human carcinogenThe reference note has been added by TD based on the background information of the NTP. (Beryllium sulphate tetrahydrate) |
| 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**

No data available

No data available

**Specific target organ toxicity - single exposure**
May cause respiratory irritation.

**Specific target organ toxicity - repeated exposure**
Causes damage to organs through prolonged or repeated exposure.

**Aspiration hazard**
No data available

**Additional Information**
RTECS: DS5000000

## 12. ECOLOGICAL INFORMATION

**12.1 Toxicity**
No data available

**12.2 Persistence and degradability**
Biodegradability Result: - Not readily biodegradable.

**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**
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life with long lasting effects.

## 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.

## 14. TRANSPORT INFORMATION

**DOT (US)**
UN number: 1566 Class: 6.1 Packing group: II
Proper shipping name: Beryllium compounds, n.o.s. (Beryllium sulphate tetrahydrate)
Reportable Quantity (RQ):
Poison Inhalation Hazard: No

**IMDG**
UN number: 1566 Class: 6.1 Packing group: II EMS-No: F-A, S-A
Proper shipping name: BERYLLIUM COMPOUND, N.O.S. (Beryllium sulphate tetrahydrate)
Marine pollutant:yes

**IATA**
UN number: 1566 Class: 6.1 Packing group: II
Proper shipping name: Beryllium compound, n.o.s. (Beryllium sulphate tetrahydrate)

## 15. REGULATORY INFORMATION

**SARA 302 Components**
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 |
|---|---|---|
| Beryllium sulphate tetrahydrate | 7787-56-6 | 1993-04-24 |

**SARA 311/312 Hazards**
Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

| | CAS-No. | Revision Date |
|---|---|---|
| Beryllium sulphate tetrahydrate | 7787-56-6 | 1993-04-24 |

**Pennsylvania Right To Know Components**

| | CAS-No. | Revision Date |
|---|---|---|
| Beryllium sulphate tetrahydrate | 7787-56-6 | 1993-04-24 |

| | CAS-No. | Revision Date |
|---|---|---|
| Beryllium sulphate tetrahydrate | 7787-56-6 | 1993-04-24 |

**New Jersey Right To Know Components**

| | CAS-No. | Revision Date |
|---|---|---|
| Beryllium sulphate tetrahydrate | 7787-56-6 | 1993-04-24 |

**California Prop. 65 Components**

| WARNING! This product contains a chemical known to the State of California to cause cancer. | CAS-No. | Revision Date |
|---|---|---|
| Beryllium sulphate tetrahydrate | 7787-56-6 | 2007-09-28 |

## 16. OTHER INFORMATION

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

| | |
|---|---|
| Acute Tox. | Acute toxicity |
| Aquatic Acute | Acute aquatic toxicity |
| Aquatic Chronic | Chronic aquatic toxicity |
| Carc. | Carcinogenicity |
| Eye Irrit. | Eye irritation |
| H301 | Toxic if swallowed. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H330 | Fatal if inhaled. |
| H335 | May cause respiratory irritation. |
| H350 | May cause cancer. |
| H372 | Causes damage to organs through prolonged or repeated exposure. |
| H401 | Toxic to aquatic life. |
| H411 | Toxic to aquatic life with long lasting effects. |

**HMIS Rating**

| | |
|---|---|
| Health hazard: | 4 |
| Chronic Health Hazard: | * |
| Flammability: | 0 |
| Physical Hazard | 0 |

**NFPA Rating**

| | |
|---|---|
| Health hazard: | 4 |
| Fire Hazard: | 0 |
| Reactivity Hazard: | 0 |

**Further information**


The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling

or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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

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