
SECTION 1: Identification

1.1 GHS Product identifier

Product name Beryllium sulphate

1.2 Other means of identification

Product number -

Other names Beryllium sulphate;beryllium,sulfate;BeSO4

1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research uses.

Uses advised against no data available

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Acute toxicity - Category 3, Oral

Skin irritation, Category 2

Skin sensitization, Category 1

Eye irritation, Category 2

Acute toxicity - Category 2, Inhalation

Specific target organ toxicity "single exposure, Category 3

Carcinogenicity, Category 1B

Specific target organ toxicity "repeated exposure, Category 1

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 2

2.2 GHS label elements, including precautionary statements

Pictogram(s)



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)

Prevention

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

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

P272 Contaminated work clothing should not be allowed out of the workplace.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

P284 [In case of inadequate ventilation] wear respiratory protection.

P203 Obtain, read and follow all safety instructions before use.

P273 Avoid release to the environment.

Response

P301+P316 IF SWALLOWED: Get emergency medical help immediately.

P321 Specific treatment (see ... on this label).

P330 Rinse mouth.

P302+P352 IF ON SKIN: Wash with plenty of water/...

P332+P317 If skin irritation occurs: Get medical help.

P362+P364 Take off contaminated clothing and wash it before reuse.

P333+P317 If skin irritation or rash occurs: Get medical help.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P316 Get emergency medical help immediately.

P320 Specific treatment is urgent (see ... on this label).

P319 Get medical help if you feel unwell.

P318 IF exposed or concerned, get medical advice.

P391 Collect spillage.

Storage

P405 Store locked up.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients**3.1 Substances**

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Beryllium sulphate	Beryllium sulphate	13510-49-1	236-842-2	100%

SECTION 4: First-aid measures**4.1 Description of necessary first-aid measures****If inhaled**

Fresh air, rest. Half-upright position. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention . Wear protective gloves when administering first aid.

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

no data available

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Beryllium and Related Compounds

SECTION 5: Fire-fighting measures**5.1 Suitable extinguishing media**

If material involved in fire: Extinguish fire using agent suitable for type of surrounding fire. (Material itself does not burn or burns with difficulty.) Use water in flooding quantities as fog. Use "alcohol" foam, dry chemical or carbon dioxide. Beryllium compound, NOS

5.2 Specific hazards arising from the chemical

Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.

5.3 Special protective actions for fire-fighters

Use fine water spray. In case of fire in the surroundings, use appropriate extinguishing media.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Sweep spilled substance into sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

6.2 Environmental precautions

Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Sweep spilled substance into sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

6.3 Methods and materials for containment and cleaning up

Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment. Chemical protection suit including self-contained breathing apparatus.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs. Well closed. Store only in original container. Store in an area without drain or sewer access. Separated from food and feedstuffs. Well closed.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: (as Be): (inhalable fraction): 0.00005 mg/m³, as TWA; (skin); A1 (confirmed human carcinogen); (SEN). MAK: sensitization of respiratory tract and skin (SAH); carcinogen category:

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use closed system.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	COLOURLESS CRYSTALS.
Colour	Colorless, tetrahedral crystals
Odour	Odorless
Melting point/freezing point	1127 deg C
Boiling point or initial boiling point and boiling range	330Â°C at 760 mmHg
Flammability	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit	no data available
Flash point	no data available
Auto-ignition temperature	no data available
Decomposition temperature	550Â°C
pH	no data available
Kinematic viscosity	no data available
Solubility	In water, 41.3 g/100 g water at 25 deg C
Partition coefficient n-octanol/water	no data available
Vapour pressure	3.35E-05mmHg at 25Â°C
Density and/or relative density	2.5 g/cu cm
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

NIOSH considers beryllium and beryllium compounds (as Be) to be a potential occupational carcinogen. Beryllium and beryllium compounds (as Be)
Decomposes above 550Â°C . This produces toxic fumes of sulfur oxides (see ICSC 0074) and beryllium oxide (see ICSC 1325).

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

Decomposes above 550°C . This produces toxic fumes of sulfur oxides (see ICSC 0074) and beryllium oxide (see ICSC 1325).

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Acids, caustics, chlorinated hydrocarbons, oxidizers, molten lithium. Beryllium and beryllium compounds (as Be)

10.6 Hazardous decomposition products

Gives off irritating or toxic fumes (or gases) in a fire.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rats oral 120 mg Be/kg
- Inhalation: no data available
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

There is sufficient evidence in humans for the carcinogenicity of beryllium and beryllium compounds. Beryllium and beryllium compounds cause cancer of the lung. There is sufficient evidence in experimental animals for the carcinogenicity of beryllium and beryllium compounds. Beryllium and beryllium compounds are carcinogenic to humans (Group 1). Beryllium and beryllium compounds

Reproductive toxicity

no data available

STOT-single exposure

The substance is irritating to the eyes, skin and respiratory tract. Inhalation of dust or fume may cause chemical pneumonitis. The effects may be delayed. Medical observation is indicated. Exposure could cause death.

STOT-repeated exposure

Sensitization to the substance, through repeated or prolonged inhalation or skin contact, may result in serious granulomatous lung disease (chronic beryllium disease). This substance is carcinogenic to humans.

Aspiration hazard

A harmful concentration of airborne particles can be reached quickly when dispersed.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50; Species: Lepomis macrochirus (Bluegill); Conditions: freshwater, static, pH 8.2, hardness 400 mg/L CaCO₃, alkalinity 360 mg/L CaCO₃; Concentration: 12000 ug/L for 96 hr /Total Be ion
- Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (Water Flea); Conditions: freshwater, static, 13 deg C (11.5-14.5 deg C), pH 7.6 (7.2-7.8), hardness 240 mg/L CaCO₃ (235-260 mg/L CaCO₃), alkalinity 400 mg/L CaCO₃ (390-415 mg/L CaCO₃), dissolved oxygen 5.6 mg/L (5.2-6.5 mg/L); Concentration: 4640 ug/L for 24 hr (95% confidence interval: 3210-6250 ug/L); Effect: intoxication, immobilization
- Toxicity to algae: EC50; Species: Dunaliella tertiolecta (Green Algae); Conditions: saltwater, static, 24 deg C, pH 6.8; Concentration: 3400000 ug/L for 24 hr; Effect: population, decreased photosynthesis /total Be ion
- Toxicity to microorganisms: no data available

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 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: UN1566 (For reference only, please check.) IMDG: UN1566 (For reference only, please check.) IATA: UN1566 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: BERYLLIUM COMPOUND, N.O.S. (For reference only, please check.) IMDG: BERYLLIUM COMPOUND, N.O.S. (For reference only, please check.) IATA: BERYLLIUM COMPOUND, N.O.S. (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.) IMDG: 6.1 (For reference only, please check.) IATA: 6.1 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: II (For reference only, please check.) IMDG: II (For reference only, please check.) IATA: II (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: Yes IMDG: Yes IATA: Yes

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Beryllium sulphate	Beryllium sulphate	13510-49-1	236-842-2
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Not Listed.
Vietnam National Chemical Inventory			Not Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

SECTION 16: Other information

Information on revision

Creation Date July 15, 2019

Revision Date July 15, 2019

Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Other Information

The symptoms of acute pneumonitis following a massive short-term exposure do not become manifest until 3 days. Depending on the degree of exposure, periodic medical examination is suggested. Do NOT take working clothes home. Isolate contaminated clothing by sealing in a bag or other container.