

## 1 Identification

### Product identifier

**Product name:** Beryllium sulfide

**Stock number:** 35832

**CAS Number:**

13598-22-6

**EC number:**

237-064-6

**Index number:**

004-002-00-2

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

**Identified use:** SU24 Scientific research and development

### Details of the supplier of the safety data sheet

**Manufacturer/Supplier:**

Stanford Advanced Materials

23661 Birtcher Dr.

Lake Forest, California,

92630

Tel: (949) 407-8904

Fax: (949) 812-6690

**Information Department:** Health, Safety and Environmental Department

**Emergency telephone number:**

(949) 407-8904

## 2 Hazard(s) identification

### Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 2 H330 Fatal if inhaled.



GHS08 Health hazard

Carc. 1B H350 May cause cancer.

STOT RE 1 H372 Causes damage to the lung and the blood through prolonged or repeated exposure. Route of exposure: Inhalative.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT SE 3 H335 May cause respiratory irritation.

**Hazards not otherwise classified** No information known.

### Label elements

**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

### Hazard pictograms



GHS06 GHS08

**Signal word** Danger

### Hazard statements

H301 Toxic if swallowed.

H330 Fatal if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H350 May cause cancer.

H335 May cause respiratory irritation.

H372 Causes damage to the lung and the blood through prolonged or repeated exposure. Route of exposure: Inhalative.

### Precautionary statements

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

P301+P310 IF SWALLOWED: 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.

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

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### WHMIS classification

B4 - Flammable solid

D1A - Very toxic material causing immediate and serious toxic effects

D2A - Very toxic material causing other toxic effects



**Product name: Beryllium sulfide**

**Classification system**

**HMIS ratings (scale 0-4)**  
(Hazardous Materials Identification System)

HEALTH	3	Health (acute effects) = 3
FIRE	0	Flammability = 0
REACTIVITY	1	Physical Hazard = 1

**Other hazards**

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**3 Composition/information on ingredients**

**Chemical characterization: Substances**

**CAS# Description:**  
13598-22-6 Beryllium sulfide

**Identification number(s):**

**EC number:** 237-064-6

**4 First-aid measures**

**Description of first aid measures**

**General information**

Immediately remove any clothing soiled by the product.

Remove breathing apparatus only after contaminated clothing has been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

**After skin contact**

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

**After eye contact** Rinse opened eye for several minutes under running water. Then consult a doctor.

**After swallowing** Do not induce vomiting; immediately call for medical help.

**Information for doctor**

**Most important symptoms and effects, both acute and delayed** No further relevant information available.

**Indication of any immediate medical attention and special treatment needed** No further relevant information available.

**5 Fire-fighting measures**

**Extinguishing media**

**Suitable extinguishing agents** In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.

**For safety reasons unsuitable extinguishing agents** Water

**Special hazards arising from the substance or mixture**

If this product is involved in a fire, the following can be released:

Toxic metal oxide fume

Hydrogen sulfide

Sulfur oxides (SOx)

**Advice for firefighters**

**Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

**6 Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

**Environmental precautions:** Do not allow material to be released to the environment without proper governmental permits.

**Methods and material for containment and cleaning up:**

Keep away from ignition sources.

Dispose of contaminated material as waste according to section 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

**Prevention of secondary hazards:** Keep away from ignition sources.

**Reference to other sections**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

**7 Handling and storage**

**Handling**

**Precautions for safe handling**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Open and handle container with care.

**Information about protection against explosions and fires:** Protect against electrostatic charges.

**Conditions for safe storage, including any incompatibilities**

**Storage**

**Requirements to be met by storerooms and receptacles:** Store in a cool location.

**Information about storage in one common storage facility:**

Store away from oxidizing agents.

Do not store together with acids.

**Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

**Specific end use(s)** No further relevant information available.

Product name: **Beryllium sulfide**

## 8 Exposure controls/personal protection

### Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

### Control parameters

#### Components with limit values that require monitoring at the workplace:

Beryllium and compounds, as Be

	mg/m <sup>3</sup>
ACGIH TLV	0.0005; 0.0002-STEL (inhalable fraction); Confirmed human carcinogen
Austria	Carcinogen
Belgium TWA	0.002; Carcinogen
Denmark TWA	0.001
Finland TWA	0.002; 0.006-STEL; Carcinogen
France VME	0.002; C2 Carcinogen
Germany	Carcinogen
Hungary TWA	0.001; Carcinogen
Japan OEL	0.002; 2A Carcinogen
Korea TLV	0.002; 0.01-STEL; Confirmed human carcinogen
Netherlands MAC-TGG	0.002; Carcinogen
Norway TWA	0.001
Poland TWA	0.001; 0.003-STEL
Russia	0.001-STEL; Carcinogen
Sweden NGV	0.002; Carcinogen
Switzerland MAK-W	0.002; Carcinogen
United Kingdom TWA	0.002; Carcinogen
USA PEL	0.002

**Additional information:** No data

### Exposure controls

#### Personal protective equipment

#### General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

**Breathing equipment:** Use self-contained respiratory protective device in emergency situations.

#### Protection of hands:

Impervious gloves

Check protective gloves prior to each use for their proper condition.

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

**Eye protection:** Safety glasses

**Body protection:** Protective work clothing.

## 9 Physical and chemical properties

### Information on basic physical and chemical properties

#### General Information

##### Appearance:

<b>Form:</b>	Powder
<b>Color:</b>	White
<b>Odor:</b>	Sulphurous
<b>Odor threshold:</b>	Not determined.
<b>pH-value:</b>	Not applicable.

##### Change in condition

<b>Melting point/Melting range:</b>	Not determined
<b>Boiling point/Boiling range:</b>	Not determined
<b>Sublimation temperature / start:</b>	Not determined

<b>Flash point:</b>	Not applicable
<b>Flammability (solid, gaseous)</b>	Highly flammable.
<b>Ignition temperature:</b>	Not determined
<b>Decomposition temperature:</b>	Not determined
<b>Auto igniting:</b>	Not determined

**Danger of explosion:** Not determined.

##### Explosion limits:

<b>Lower:</b>	Not determined
<b>Upper:</b>	Not determined

**Vapor pressure:** Not applicable.

**Density:** Not determined

**Relative density** Not determined.

**Vapor density** Not applicable.

**Evaporation rate** Not applicable.

**Solubility in / Miscibility with**

**Water:** Not determined

**Partition coefficient (n-octanol/water):** Not determined.

**Viscosity:**

**dynamic:** Not applicable.

**kinematic:** Not applicable.

**Other information** No further relevant information available.

## 10 Stability and reactivity

**Reactivity** Contact with acids liberates toxic gas.

**Chemical stability** Stable under recommended storage conditions.

**Thermal decomposition / conditions to be avoided:** Decomposition will not occur if used and stored according to specifications.

#### Possibility of hazardous reactions

Reacts with acids forming hydrogen sulfide

Spontaneous decomposition on contact with water forming hydrogen sulfide

Contact with acids liberates toxic gas.

**Product name: Beryllium sulfide**

**Conditions to avoid** No further relevant information available.

**Incompatible materials:**

Oxidizing agents

Acids

**Hazardous decomposition products:**

Toxic metal oxide fume

Hydrogen sulfide

Sulfur oxides (SOx)

**11 Toxicological information**

**Information on toxicological effects**

**Acute toxicity:**

Fatal if inhaled.

Toxic if swallowed.

**LD/LC50 values that are relevant for classification:** No data

**Skin irritation or corrosion:** Causes skin irritation.

**Eye irritation or corrosion:** Causes serious eye irritation.

**Sensitization:** May cause an allergic skin reaction.

**Germ cell mutagenicity:** No effects known.

**Carcinogenicity:**

May cause cancer.

IARC-1: Carcinogenic to humans: sufficient evidence of carcinogenicity.

NTP-R: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals.

ACGIH A1: Confirmed human carcinogen: Agent is carcinogenic to humans based on epidemiologic studies of, or convincing clinical evidence in, exposed humans.

EPA-B1: Probable human carcinogen, limited evidence of carcinogenicity from epidemiologic studies.

**Reproductive toxicity:** No effects known.

**Specific target organ system toxicity - repeated exposure:**

Causes damage to the lung and the blood through prolonged or repeated exposure. Route of exposure: Inhalative.

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

**Aspiration hazard:** No effects known.

**Subacute to chronic toxicity:**

Acute exposure to beryllium may cause dermatitis, chronic skin ulcers, rhinitis, nasopharyngitis, epistaxis, bronchitis, pneumonitis possibly fatal, fever, rales,

dyspnea and substernal pain. Chronic exposure causes a delayed form of lung disease which may be delayed for five years or more after exposure stops.

Symptoms include coughing, shortness of breath, loss of appetite, weight loss and fatigue. Cyanosis is common with elevated pulse and respiratory rates. This

disease may progress to death from cardiac or respiratory failure.

**Subacute to chronic toxicity:** No effects known.

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

**12 Ecological information**

**Toxicity**

**Aquatic toxicity:** No further relevant information available.

**Persistence and degradability** No further relevant information available.

**Bioaccumulative potential** No further relevant information available.

**Mobility in soil** No further relevant information available.

**Ecotoxicological effects:**

**Remark:** Toxic for aquatic organisms

**Additional ecological information:**

**General notes:**

Do not allow material to be released to the environment without proper governmental permits.

Toxic for aquatic organisms

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Toxic to aquatic life

May cause long lasting harmful effects to aquatic life.

Avoid transfer into the environment.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects** No further relevant information available.

**13 Disposal considerations**

**Waste treatment methods**

**Recommendation** Consult state, local or national regulations to ensure proper disposal.

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

**UN-Number**

DOT, IMDG, IATA

UN3179

**UN proper shipping name**

DOT

IMDG, IATA

Flammable solid, toxic, inorganic, n.o.s. (Beryllium sulfide)

FLAMMABLE SOLID, TOXIC, INORGANIC, N.O.S. (Beryllium sulfide)

**Transport hazard class(es)**

DOT



**Class**

**Label**

**Class**

**Label**

4.1 Flammable solids, self-reactive substances and solid desensitised explosives.

4.1+6.1

4.1 (FT2) Flammable solids, self-reactive substances and solid desensitised

explosives

4.1+6.1

Product name: **Beryllium sulfide**

(Contd. of page 4)

**IMDG, IATA**

<b>Class Label</b>	4.1 Flammable solids, self-reactive substances and solid desensitised explosives. 4.1+6.1
<b>Packing group DOT, IMDG, IATA</b>	II
<b>Environmental hazards:</b>	Environmentally hazardous substance, solid
<b>Special precautions for user</b>	Warning: Flammable solids, self-reactive substances and solid desensitised explosives
<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>Transport/Additional information:</b>	
<b>DOT Marine Pollutant (DOT):</b>	No
<b>Item:</b>	
<b>UN "Model Regulation":</b>	UN3179, Flammable solid, toxic, inorganic, n.o.s. (Beryllium sulfide), 4.1 (6.1), II

**15 Regulatory information****Safety, health and environmental regulations/legislation specific for the substance or mixture****GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)**Hazard pictograms**

GHS06 GHS08

**Signal word** Danger**Hazard statements**

H301 Toxic if swallowed.

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**National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

**SARA Section 313 (specific toxic chemical listings)**

13598-22-6 | Beryllium sulfide

**California Proposition 65****Prop 65 - Chemicals known to cause cancer**

13598-22-6 | Beryllium sulfide

**Prop 65 - Developmental toxicity** Substance is not listed.**Prop 65 - Developmental toxicity, female** Substance is not listed.**Prop 65 - Developmental toxicity, male** Substance is not listed.**Information about limitation of use:**

For use only by technically qualified individuals.

This product contains beryllium and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

**Other regulations, limitations and prohibitive regulations****Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.** Substance is not listed.**The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.**

Substance is not listed.

**Annex XIV of the REACH Regulations (requiring Authorisation for use)** Substance is not listed.**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.**16 Other information**

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