

## 1 Identification

### Product identifier

**Product name:** Barium sulfide

**Stock number:** 12848

**CAS Number:**

21109-95-5

**EC number:**

244-214-4

**Index number:**

016-002-00-X

**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:

Alfa Aesar  
Thermo Fisher Scientific Chemicals, Inc.  
30 Bond Street  
Ward Hill, MA 01835-8099  
Tel: 800-343-0660  
Fax: 800-322-4757  
Email: tech@alfa.com  
www.alfa.com

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

#### Emergency telephone number:

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

## 2 Hazard(s) identification

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



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H332 Harmful if inhaled.

**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



GHS07

### Signal word

Warning

### Hazard statements

H302+H332 Harmful if swallowed or if inhaled.

### Precautionary statements

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

P264 Wash thoroughly after handling.

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

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/.../if you feel unwell.

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

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

### WHMIS classification

B6 - Reactive flammable material

D1B - Toxic material causing immediate and serious toxic effects



### Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH 2 Health (acute effects) = 2

FIRE 0 Flammability = 0

REACTIVITY 2 Physical Hazard = 2

### Other hazards

### Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

## 3 Composition/information on ingredients

### Chemical characterization: Substances

#### CAS# Description:

21109-95-5 Barium sulfide

#### Identification number(s):

EC number: 244-214-4

Index number: 016-002-00-X

## 4 First-aid measures

### Description of first aid measures






#### After inhalation

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

Seek immediate medical advice.

Product name: <b>Barium sulfide</b>									
<div>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 Seek medical treatment. 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.</div> <div>(Contd. of page 1)</div>									
<b>5 Fire-fighting measures</b> Extinguishing media Suitable extinguishing agents CO2, sand, extinguishing powder. Do not use water. Special hazards arising from the substance or mixture If this product is involved in a fire, the following can be released: Barium oxide Sulfur oxides (SOx) Hydrogen sulfide Advice for firefighters Protective equipment: Wear self-contained respirator. Wear fully protective impervious suit.									
<b>6 Accidental release measures</b> Personal precautions, protective equipment and emergency procedures Mount respiratory protective device. Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation Environmental precautions: Do not allow material to be released to the environment without proper governmental permits. Methods and material for containment and cleaning up: Dispose of contaminated material as waste according to section 13. Ensure adequate ventilation. Prevention of secondary hazards: No special measures required. 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.									
<b>7 Handling and storage</b> Handling Precautions for safe handling Handle under dry protective gas. Keep container tightly sealed. Store in cool, dry place in tightly closed containers. Ensure good ventilation at the workplace. Information about protection against explosions and fires: The product is not flammable Conditions for safe storage, including any incompatibilities Storage Requirements to be met by storerooms and receptacles: No special requirements. Information about storage in one common storage facility: Do not store together with acids. Store away from water/moisture. Further information about storage conditions: Store under dry inert gas. This product is moisture sensitive. Keep container tightly sealed. Store in cool, dry conditions in well sealed containers. Protect from humidity and water. Specific end use(s) No further relevant information available.									
<b>8 Exposure controls/personal protection</b> 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: 21109-95-5 Barium sulfide (100.0%) <table><tr><td>PEL (USA)</td><td>Long-term value: 0.5 mg/m³ as Ba</td></tr><tr><td>REL (USA)</td><td>Long-term value: 0.5 mg/m³ as Ba</td></tr><tr><td>TLV (USA)</td><td>Long-term value: 0.5 mg/m³ as Ba</td></tr><tr><td>EL (Canada)</td><td>Long-term value: 0.5 mg/m³ as Ba</td></tr></table> <div>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. Maintain an ergonomically appropriate working environment. Breathing equipment: Use suitable respirator when high concentrations are present. 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. Penetration time of glove material (in minutes) Not determined</div>		PEL (USA)	Long-term value: 0.5 mg/m³ as Ba	REL (USA)	Long-term value: 0.5 mg/m³ as Ba	TLV (USA)	Long-term value: 0.5 mg/m³ as Ba	EL (Canada)	Long-term value: 0.5 mg/m³ as Ba
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EL (Canada)	Long-term value: 0.5 mg/m³ as Ba								
<div>(Contd. on page 3) USA</div>									

<b>Product name: Barium sulfide</b>	
<div>Eye protection: Safety glasses</div> <div>Body protection: Protective work clothing.</div>	
(Contd. of page 2)	
<b>9 Physical and chemical properties</b>	
<b>Information on basic physical and chemical properties</b>	
<b>General Information</b>	
<b>Appearance:</b>	
Form:	Powder
Color:	White
Odor:	Like rotten eggs
Odor threshold:	Not determined.
<b>pH-value:</b>	
Not applicable.	
<b>Change in condition</b>	
Melting point/Melting range:	1200 °C (2192 °F)
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined
Flammability (solid, gaseous)	Not determined.
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Auto igniting:	Not determined.
<b>Danger of explosion:</b>	
Product does not present an explosion hazard.	
<b>Explosion limits:</b>	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not applicable.
Density at 20 °C (68 °F):	4.25 g/cm³ (35.466 lbs/gal)
Relative density	Not determined.
Vapor density	Not applicable.
Evaporation rate	Not applicable.
<b>Solubility in / Miscibility with</b>	
Water:	Insoluble
<b>Partition coefficient (n-octanol/water):</b>	
Not determined.	
<b>Viscosity:</b>	
dynamic:	Not applicable.
kinematic:	Not applicable.
<b>Other information</b>	
No further relevant information available.	
<b>10 Stability and reactivity</b>	
<b>Reactivity</b> Contact with acids liberates toxic gas.	
<b>Chemical stability</b> Stable under recommended storage conditions.	
<b>Thermal decomposition / conditions to be avoided:</b> Decomposition will not occur if used and stored according to specifications.	
<b>Possibility of hazardous reactions</b> Contact with acids liberates toxic gas.	
<b>Conditions to avoid</b> No further relevant information available.	
<b>Incompatible materials:</b>	
Acids	
Water/moisture	
<b>Hazardous decomposition products:</b>	
Barium oxide	
Sulfur oxides (SOx)	
Hydrogen sulfide	
<b>11 Toxicological information</b>	
<b>Information on toxicological effects</b>	
<b>Acute toxicity:</b>	
Harmful if inhaled.	
Harmful if swallowed.	
<b>LD/LC50 values that are relevant for classification:</b> No data	
<b>Skin irritation or corrosion:</b> May cause irritation	
<b>Eye irritation or corrosion:</b> May cause irritation	
<b>Sensitization:</b> No sensitizing effects known.	
<b>Germ cell mutagenicity:</b> No effects known.	
<b>Carcinogenicity:</b> No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.	
<b>Reproductive toxicity:</b> No effects known.	
<b>Specific target organ system toxicity - repeated exposure:</b> No effects known.	
<b>Specific target organ system toxicity - single exposure:</b> No effects known.	
<b>Aspiration hazard:</b> No effects known.	
<b>Subacute to chronic toxicity:</b> No effects known.	
<b>Additional toxicological information:</b> To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.	
<b>12 Ecological information</b>	
<b>Toxicity</b>	
<b>Aquatic toxicity:</b> No further relevant information available.	
<b>Persistence and degradability</b> No further relevant information available.	
<b>Bioaccumulative potential</b> No further relevant information available.	
<b>Mobility in soil</b> No further relevant information available.	
<b>Ecotoxicological effects:</b>	
<b>Remark:</b> Very toxic for aquatic organisms	
<b>Additional ecological information:</b>	
<b>General notes:</b>	
Do not allow product to reach ground water, water course or sewage system.	
Do not allow material to be released to the environment without proper governmental permits.	
Danger to drinking water if even small quantities leak into the ground.	
Also poisonous for fish and plankton in water bodies.	
Avoid transfer into the environment.	
Very toxic for aquatic organisms	
<b>Results of PBT and vPvB assessment</b>	
<b>PBT:</b> Not applicable.	
<b>vPvB:</b> Not applicable.	
(Contd. on page 4)	

<b>Product name: Barium sulfide</b>	
<b>Other adverse effects</b> No further relevant information available.	
(Contd. of page 3)	
<b>13 Disposal considerations</b>	
<b>Waste treatment methods</b> <b>Recommendation</b> Consult state, local or national regulations to ensure proper disposal. <b>Uncleaned packagings:</b> <b>Recommendation:</b> Disposal must be made according to official regulations.	
<b>14 Transport information</b>	
<b>UN-Number</b> <b>DOT, IMDG, IATA</b>	UN3134
<b>UN proper shipping name</b> <b>DOT</b> <b>IMDG, IATA</b>	Water-reactive solid, toxic, n.o.s. (Barium sulfide) WATER-REACTIVE SOLID, TOXIC, N.O.S. (Barium sulfide)
<b>Transport hazard class(es)</b> <b>DOT</b>   <b>Class</b> <b>Label</b> <b>Class</b> <b>Label</b> <b>IMDG, IATA</b>  	4.3 Substances which, in contact with water, emit flammable gases. 4.3+6.1 4.3 (WT2) Substances which, in contact with water, emit flammable gases 4.3+6.1
<b>Class</b> <b>Label</b>	4.3 Substances which, in contact with water, emit flammable gases. 4.3+6.1
<b>Packing group</b> <b>DOT, IMDG, IATA</b>	III
<b>Environmental hazards:</b>	Environmentally hazardous substance, solid
<b>Special precautions for user</b> <b>EMS Number:</b>	Warning: Substances which, in contact with water, emit flammable gases F-G, S-N
<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</b> <b>Marine Pollutant (DOT):</b>	No
<b>UN "Model Regulation":</b>	UN3134, Water-reactive solid, toxic, n.o.s. (Barium sulfide), 4.3 (6.1), III
<b>15 Regulatory information</b>	
<b>Safety, health and environmental regulations/legislation specific for the substance or mixture</b> <b>GHS label elements</b> The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS) <b>Hazard pictograms</b>  GHS07 <b>Signal word</b> Warning <b>Hazard statements</b> H302+H332 Harmful if swallowed or if inhaled. <b>Precautionary statements</b> P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P264 Wash thoroughly after handling. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/.../if you feel unwell. P312 Call a POISON CENTER/doctor/.../if you feel unwell. P501 Dispose of contents/container in accordance with local/regional/national/international regulations. <b>National regulations</b> All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory. All components of this product are listed on the Canadian Non-Domestic Substances List (NDSL).	
<b>SARA Section 313 (specific toxic chemical listings)</b> 21109-95-5 Barium sulfide	
<b>California Proposition 65</b> <b>Prop 65 - Chemicals known to cause cancer</b> Substance is not listed. <b>Prop 65 - Developmental toxicity</b> Substance is not listed. <b>Prop 65 - Developmental toxicity, female</b> Substance is not listed. <b>Prop 65 - Developmental toxicity, male</b> Substance is not listed. <b>Information about limitation of use:</b> For use only by technically qualified individuals. <b>Other regulations, limitations and prohibitive regulations</b> <b>Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.</b> Substance is not listed. <b>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.</b> Substance is not listed. <b>Annex XIV of the REACH Regulations (requiring Authorisation for use)</b> Substance is not listed. <b>Chemical safety assessment:</b> A Chemical Safety Assessment has not been carried out.	

Product name: **Barium sulfide**

(Contd. of page 4)

16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing SDS:** Global Marketing Department  
**Date of preparation / last revision** 11/24/2015 / -

**Abbreviations and acronyms:**  
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)  
ICAO: International Civil Aviation Organization  
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)  
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
IATA: International Air Transport Association  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
HMIS: Hazardous Materials Identification System (USA)  
WHMIS: Workplace Hazardous Materials Information System (Canada)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
vPvB: very Persistent and very Bioaccumulative  
ACGIH: American Conference of Governmental Industrial Hygienists (USA)  
OSHA: Occupational Safety and Health Administration (USA)  
NTP: National Toxicology Program (USA)  
IARC: International Agency for Research on Cancer  
EPA: Environmental Protection Agency (USA)

USA