

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Trade name	Barium sulfide
Stock number:	A13422
CAS Number:	21109-95-5
EC number:	244-214-4
Index number:	016-002-00-X

1.2 Relevant identified uses of the substance

or mixture and uses advised against.	No further relevant information available.
Identified use:	SU24 Scientific research and development

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:	Alfa Aesar GmbH & Co.KG A Johnson Matthey Company Zeppelinstr. 7b 76185 Karlsruhe / Germany Tel: +49 (0) 721 84007 280 Fax: +49 (0) 721 84007 300 Email: tech@alfa.com www.alfa.com
Informing department:	Product safety Tel + +049 (0) 7275 988687-0
1.4 Emergency telephone number:	Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number) Poison Information Center Mainz www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008



GHS02 flame

Water-react. 3 H261 In contact with water releases flammable gases.



GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H332 Harmful if inhaled.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Xn; Harmful

R20/22: Harmful by inhalation and if swallowed.

N; Dangerous for the environment

R50: Very toxic to aquatic organisms.

R31: Contact with acids liberates toxic gas.

Information concerning particular hazards

for human and environment: Not applicable

Other hazards that do not result in classification: No information known.

2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008****Hazard pictograms****Signal word****Hazard statements****Precautionary statements****Additional information:****2.3 Other hazards****Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

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

CAS# Designation: 21109-95-5 Barium sulfide

Identification number(s):

EC number: 244-214-4

Index number: 016-002-00-X

SECTION 4: First aid measures**4.1 Description of first aid measures****After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

After skin contactSeek immediate medical advice.
Instantly wash with water and soap and rinse thoroughly.**After eye contact**Seek immediate medical advice.
Rinse opened eye for several minutes under running water. Then consult doctor.
Seek medical treatment.**After swallowing****4.2 Most important symptoms and effects, both acute and delayed**

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

Trade name **Barium sulfide**

(Contd. of page 1)

SECTION 5: Firefighting measures

5.1 Extinguishing media Suitable extinguishing agents For safety reasons unsuitable extinguishing agents	Special powder for metal fires. Do not use water.
5.2 Special hazards arising from the substance or mixture	Water. If this product is involved in a fire, the following can be released: Sulphur oxides (SO _x) Barium oxide
5.3 Advice for firefighters Protective equipment:	Wear self-contained breathing apparatus. Wear full protective suit.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures	Put on breathing apparatus. Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation
6.2 Environmental precautions:	Do not allow product to reach sewage system or water bodies. Do not allow to enter the ground/soil.
6.3 Methods and material for containment and cleaning up:	Dispose of contaminated material as waste according to item 13. Ensure adequate ventilation.
Prevention of secondary hazards:	No special measures required.
6.4 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 information on disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling	Handle under dry protective gas. Keep containers tightly sealed. Store in cool, dry place in tightly closed containers. Ensure good ventilation/exhaustion at the workplace. Reacts violently with water
Information about protection against explosions and fires:	No information known.
7.2 Conditions for safe storage, including any incompatibilities Storage Requirements to be met by storerooms and containers: Information about storage in one common storage facility:	No special requirements. Do not store together with acids. Store away from air. Store away from water. Store away from oxidizing agents.
Further information about storage conditions:	Store under dry inert gas. Keep container tightly sealed. Store in cool, dry conditions in well sealed containers. Protect from humidity and keep away from water.
7.3 Specific end use(s)	No further relevant information available.

SECTION 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.
--	---

8.1 Control parameters**Components with critical values that require monitoring at the workplace:****21109-95-5 Barium sulfide (100,0%)**

MAK (Germany)	0,5E mg/m ³ als Ba berechnet
MAK (TRGS 900) (Germany)	0,5 E mg/m ³ 1, 25; (DFG, EU)
PEL (USA)	0,5 mg/m ³ as Ba
REL (USA)	0,5 mg/m ³ as Ba
TLV (USA)	0,5 mg/m ³ as Ba

Additional information: No data**8.2 Exposure controls****Personal protective equipment****General protective and hygienic measures**

Breathing equipment:	The usual precautionary measures should be adhered to in handling the chemicals. Keep away from foodstuffs, beverages and food. Instantly remove any soiled and impregnated garments. Wash hands during breaks and at the end of the work. Maintain an ergonomically appropriate working environment.
Protection of hands:	Use breathing protection with high concentrations. Check protective gloves prior to each use for their proper condition. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
Material of gloves	Impervious gloves
Penetration time of glove material	Not determined
Eye protection:	Safety glasses
Body protection:	Protective work clothing.

Trade name **Barium sulfide**

(Contd. of page 2)

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties****General Information****Appearance:**

Form: Powder
Colour: Dark grey
Smell: Like rotten eggs
Odour threshold: Not determined.

pH-value: Not applicable.

Change in condition

Melting point/Melting range: 1200 °C
Boiling point/Boiling range: Not determined
Sublimation temperature / start: Not determined
Inflammability (solid, gaseous) Not determined.
Ignition temperature: Not determined
Decomposition temperature: Not determined
Self-inflammability: Not determined.

Critical values for explosion:

Lower: Not determined

Upper: Not determined

Steam pressure: Not applicable.

Density at 20 °C 4,25 g/cm³

Relative density Not determined.

Vapour 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.

9.2 Other information No further relevant information available.

SECTION 10: Stability and reactivity**10.1 Reactivity**

Contact with acids liberates toxic gas.

10.2 Chemical stability

Stable under recommended storage conditions.

Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.

10.3 Possibility of hazardous reactions

Reacts with strong oxidizing agents

10.5 Incompatible materials:

Air
 Oxidizing agents
 Acids
 Water/moisture
 Sulphur oxides (SO_x)
 Barium oxide

10.6 Hazardous decomposition products:

Sulphur oxides (SO_x)
 Barium oxide

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity:**

Harmful if inhaled.
 Harmful if swallowed.

LD/LC50 values that are relevant for classification:

No data

Skin irritation or corrosion:

May cause irritation

Eye irritation or corrosion:

May cause irritation

Sensitization:

No sensitizing effect known.

Germ cell mutagenicity:

No effects known.

Carcinogenicity:

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

Reproductive toxicity:

No effects known.

Specific target organ system toxicity - repeated exposure:

No effects known.

Specific target organ system toxicity - single exposure:

No effects known.

Aspiration hazard:

No effects known.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

SECTION 12: Ecological information**12.1 Toxicity****Aquatic toxicity:**

No further relevant information available.

12.2 Persistence and degradability

No further relevant information available.

12.3 Bioaccumulative potential

No further relevant information available.

12.4 Mobility in soil

No further relevant information available.

Ecotoxicological effects:**Remark:**

Very toxic for fish

Additional ecological information:**General notes:**

Do not allow product to reach ground water, water bodies or sewage system.
 Water hazard class 2 (Self-assessment): hazardous for water.
 Danger to drinking water if even small quantities leak into soil.
 Also poisonous for fish and plankton in water bodies.
 Avoid transfer into the environment.
 Very toxic for aquatic organisms

12.5 Results of PBT and vPvB assessment**PBT:**

Not applicable.

vPvB:

Not applicable.

12.6 Other adverse effects

No further relevant information available.

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Recommendation**

Hand over to disposers of hazardous waste.
 Must be specially treated under adherence to official regulations.
 Consult state, local or national regulations for proper disposal.

(Contd. on page 4)
DE/E

Safety data sheet
according to 1907/2006/EC, Article 31

Revision: 11.07.2013





Printing date 15.07.2013

Trade name **Barium sulfide**Uncleaned packagings:
Recommendation:

Disposal must be made according to official regulations.

(Contd. of page 3)

SECTION 14: Transport information

UN-Number ADR, IMDG, IATA	UN3134
14.2 UN proper shipping name ADR IMDG, IATA	3134 WATER-REACTIVE SOLID, TOXIC, N.O.S. (Barium sulfide) WATER-REACTIVE SOLID, TOXIC, N.O.S. (Barium sulfide)
14.3 Transport hazard class(es) ADR	
 	
Class Label IMDG, IATA	4.3 (WT2) Substances which, in contact with water, emit flammable gases. 4.3+6.1
 	
Class Label	4.3 Substances which, in contact with water, emit flammable gases. 4.3+6.1
Packing group ADR, IMDG, IATA	III
14.5 Environmental hazards:	Environmentally hazardous substance, solid
14.6 Special precautions for user Kemler Number: EMS Number:	Warning: Substances which, in contact with water, emit flammable gases. 462 F-G,S-N
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
ADR Excepted quantities (EQ): Limited quantities (LQ) Transport category Tunnel restriction code	E1 1 kg 0 E
UN "Model Regulation":	UN3134, WATER-REACTIVE SOLID, TOXIC, N.O.S. (Barium sulfide), 4.3 (6.1), III

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture	
Australian Inventory of Chemical Substances	Substance is listed.
Standard for the Uniform Scheduling of Drugs and Poisons	Substance is not listed.
National regulations	
Information about limitation of use:	Employment restrictions concerning young persons must be observed. For use only by technically qualified individuals.
Water hazard class:	Water hazard class 2 (Self-assessment): hazardous for water.
Other regulations, limitations and prohibitive regulations	
ELINCS (European List of Notified Chemical Substances)	Substance is not listed.
Substances of very high concern (SVHC) according to REACH, Article 57	Substance is not listed.
REACH - Pre-registered substances	Substance is listed.
15.2 Chemical safety assessment:	A Chemical Safety Assessment has not been carried out.

SECTION 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:	Health, Safety and Environmental Department.
Abbreviations and acronyms:	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 IATA: International Air Transport Association GHS: Globally Harmonized System of Classification and Labelling of Chemicals EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent

DE/E