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Printing date 15.07.2013	Revision: 11.07.2013	
SECTION 1: Identification of the substa	nce/mixture and of the company/undertaking	
1.1 Product identifier		
Trade name Stock number:	Barium sulfide A13422	
CAS Number:	21109-95-5	
EC number: Index number:	244-214-4 016-002-00-X	
1.2 Relevant identified uses of the substance		
or mixture and uses advised against. Identified use:	SU24 Scientific research and development	
1.3 Details of the supplier of the safety data		
Manufacturer/Supplier:	Alfa Aesar GmbH & Co.KG A Johnson Matthey Company	
	Zeppelinstr 7h	
	Tel: +49 (0) 721 84007 280	
	To185 Karlsruhe / Germany Tel: +49 (0) 721 84007 280 Fax: +49 (0) 721 84007 300 Email: tech@alfa.com	
Informing department:	www.alfa.com	
1.4 Emergency telephone number:	Product safety Tel + +049 (0) 7275 988687-0 Carechem 24: +44 (o) 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 mixtur	e	
Classification according to Regulation (EC)		
GHS02 flame		
Water-react. 3 H261 In contact with water re	eases flammable gases.	
AV.		
GHS09 environment		
Aquatic Acute 1 H400 Very toxic to aquatic life		
GHS07		
\checkmark		
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 swallow	ed.	
N; Dangerous for the environment		
R50: Very toxic to aquatic organisms.		
R31: Contact with acids liberates toxic ga Information concerning particular hazards	S.	
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	The substance is classified and labelled according to the CLP regulation.	
Hazard pictograms	GHS02, GHS07, GHS09 Warning	
Signal word Hazard statements	H261 In contact with water releases flammable gases. H302 Harmful if swallowed.	
	H302 Harmful if swallowed. H332 Harmful if inhaled.	
Dressutionery statements	H400 Very toxic to aquatic life	
Precautionary statements	P231+P232 Handle under inert gas. Protect from moisture. P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P280 Wear protective gloves/protective clothing/eye protection/face protection. P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.	
	P280 Wear protective gloves/profective clothing/eye protection/face protection. P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.	
	P402+P404 Store in a dry place. Store in a closed container. P501 Dispose of contents/container in accordance with local/regional/national/international regulations.	
Additional information:	EUH031 Contact with acids liberates toxic gas.	
2.3 Other hazards Results of PBT and vPvB assessment		
PBT: vPvB:	Not applicable. Not applicable.	
SECTION 3: Composition/information c	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		
After inhalation	Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.	
After skin contact	Seek immediate medical advice. Instantly wash with water and soap and rinse thoroughly.	
	Seek immediate medical advice.	
After eye contact After swallowing	Rinse opened eye for several minutes under running water. Then consult doctor. Seek medical treatment.	
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.	

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Trade a mail Barlum sulfide (Const. of page 1) SECTION 5: Find(ghtling geness Subject setting) Special page 6 Status of a mature subject setting of the setting setting subject setting setting approaches subject setting setting setting setting setting setting setting setting setting setting setting setting setting approaches. Water Status of a mature setting setting	Printing date 15.07.2013		Revision: 11.07.2013
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Information about storage in one common storage facility: Do not store together with acids. Store away from valer. Store away from valer. Further information about storage conditions: Do not store together with acids. Store away from valer. Store away from valer. 7.3 Specific end use(s) Store away from valer. Protect from humidity sealed. Store in cool. dty conditions in well sealed containers. Protect from humidity and keep away from water. No further relevant information about design of technical systems: 5.1 Control parameters Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute. 6.1 Control parameters Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute. 7.1 Specific end use(s) 0.5 mg/m² als Ba berechnet 1.25; (0FG, EU) 1.25; (0FG, EU) 1	Requirements to be met by s containers:	storerooms and	No special requirements.
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Further information about storage Store away from oxidizing agents. Further information about storage Store away from oxidizing agents. 7.3 Specific end use(s) Store under dry inert gas. Keep container tightly scaled. No further relevant information available. 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%) Import al Ba berechnet als Ba berechnet sa Ba Ba MAK (CRGS 900) (Germany) 0.5 E mg/m ² als Ba als Ba berechnet sa Ba 0.5 mg/m ² as Ba TLV (USA) 0.5 mg/m ² as Ba Additional information: No data 8.2 Exposure controls The usual precautionary measures should be adhered to in handling the chemicals. Keep away from locidstiffs, beverages and food. Wash hands: Protection of hands: Check protection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. Impervious gloves Breathing equipment: Use breathing protection of varies of protection or with bigh concennitions.	storage facility.		Store away from air.
conditions: Store under dy inert gas. Keep container tightly sealed. Store in cool, dry conditions in well sealed containers. Protect from humidity and keep away from water. 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 Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute. 21109-95: Barium suifide (100,0%) MAK (Germany) MAK (Germany) 0.5 E mg/m ² als Ba berchnet MAK (Germany) 0.5 E mg/m ² as Ba REL (USA) 0.5 mg/m ³ as Ba REL (USA) 0.5 mg/m ³ as Ba Additional information: No data 8.2 Exposure controls Personal protective equipment General protective and hygienic measures The usual precautionary measures should be adhered to in handling the chemicals. Keep away from foods/utifs, beverage and food. Instantly remove any solied and impregnated garments. Wash hands during breaks and at the end of the work. Maintain an ergonomically appropriate working environment. Use breating protective doins private working environment. Use breating protective doins on the suitable gloves does not only depend on the material, but also on further marks of quality and values from maufacturer in maufacturer. Not determined Safe y glasses Protection: <th></th> <th></th> <th>Store away from oxidizing agents.</th>			Store away from oxidizing agents.
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	Body protection:		Protective work clothing.
			(Contd. on page 3)

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Revision: 11.07.2013

Trade name **Barium sulfide**

	(Contd. of page 2)
SECTION 9: Physical and chemical pro	
9.1 Information on basic physical and chemi General Information	cal properties
Appearance: Form:	Powder
Colour: Smell:	Dark grey Like rotten eggs
Odour threshold:	Not determined.
pH-value: Change in condition	Not applicable.
Melting point/Melting range: Boiling point/Boiling range: Sublimation temperature / start:	1200 °C Not determined
Sublimation temperature / start:	Not determined
Inflammability (solid, gaseous) Ignition temperature:	Not determined. Not determined
Decomposition temperature: Self-inflammability:	Not determined Not determined.
Critical values for explosion: Lower:	Not determined
Upper: Steam pressure:	Not determined Not applicable.
Steam pressure: Density at 20 °C Relative density	A25 g/cm ³ Not determined.
Vapour density	Not applicable.
Evaporation rate Solubility in / Miscibility with	Not applicable.
Water: Partition coefficient (n-octanol/water):	Not determined Not determined.
Viscosity: dynamic:	Not applicable.
kinematic: 9.2 Other information	Not applicable. No further relevant information available.
SECTION 10: Stability and reactivity	
10.1 Reactivity 10.2 Chemical stability	Contact with acids liberates toxic gas. 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 10.5 Incompatible materials:	Reacts with strong oxidizing agents
TO.5 Incompatible materials.	Air Oxidizing agents
	Acids Water/moisture
10.6 Hazardous decomposition products:	Sulphur oxides (SOx) Barium oxide
SECTION 11: Toxicological information	
11.1 Information on toxicological effects Acute toxicity:	Harmful if inhaled.
LD/LC50 values that are relevant for	Harmful if swallowed.
classification:	No data
Skin irritation or corrosion: Eye irritation or corrosion:	May cause irritation May cause irritation
Sensitization: Germ cell mutagenicity:	No sensitizing effect known. 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: Specific target organ system toxicity -	No effects known.
repeated exposure:	No effects known.
Specific target organ system toxicity - single exposure:	No effects known.
Aspiration hazard: Additional toxicological information:	No effects known. 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: 12.2 Persistence and degradability	No further relevant information available. No further relevant information available.
12.3 Bioaccumulative potential 12.4 Mobility in soil	No further relevant information available. No further relevant information available.
Ecotoxical 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 driphing water if even small guaptitize lock into coil
	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: 12.6 Other adverse effects	Not applicable. 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) DÉ/E

Safety data sheet

Prir Tra

	according to 1907/2006/EC, Article 31
nting date 15.07.2013	Revision: 11.07.201
de name Barium sulfide	
Uncleaned packagings: Recommendation:	(Contd. of page Disposal must be made according to official regulations.
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	4.3 Substances which, in contact with water, emit flammable gases.
Label Packing group	4.3+6.1
ADR, IMDG, IATA 14.5 Environmental hazards:	III 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 Code	
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 regula Australian Inventory of Chemical	ations/legislation specific for the substance or mixture
Substances Standard for the Uniform Scheduling of	Substance is listed.
Drugs and Poisons National regulations	Substance is not listed.
Information about limitation of use:	Employment restrictions concerning young persons must be observed. For use only by technically qualified individuals.
Water hazard class: Other regulations, limitations and prohibitive	Water hazard class 2 (Self-assessment): hazardous for water. e regulations
ELINCS (European List of Notified Chemical Substances)	Substance is not listed.
Substances of very high concern (SVHC) according to REACH, Article 57 REACH - Pre-registered substances 15.2 Chemical safety assessment:	Substance is not listed. Substance is listed. A Chemical Safety Assessment has not been carried out.
SECTION 16: Other information Employers should use this information only as a this information to ensure proper use and prote	a supplement to other information gathered by them, and should make independent judgement of suitability of to the health and safety of employees. This information is furnished without warranty, and any use of the produ ta Sheet, or in combination with any other product or process, is the responsibility of the user.
Department issuing SDS: Abbreviations and acronyms:	Health, Safety and Environmental Department. ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage o Dangerous Goods by Road) IMDE: International Martime 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) ICSC: Letal concentration 50 nercent
	IA 1A: International Air Fransport 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) LCS0: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent
	LD50: Lethal dose, 50 percent