

# Safety data sheet

according to 1907/2006/EC, Article 31

Revision: 27.01.2011

Printing date 27.01.2011

## 1 Identification of the substance/mixture and of the company/undertaking

**Product identifier**  
**Trade name** Aluminum sulfide  
**Stock number:** 12851  
**CAS Number:** 1302-81-4  
**EINECS Number:** 215-109-0  
**Relevant identified uses of the substance or mixture and uses advised against**  
**Sector of Use** SU24 Scientific research and development  
**Details of the supplier of the safety data sheet**  
**Manufacturer/Supplier:** Alfa Aesar GmbH & Co.KG  
Benzstrasse 3  
D-76185 Karlsruhe / Germany  
**Informing department:** Product safety department.  
**Emergency telephone number:** Giftnotruf Universität Mainz / Poison Information Center Mainz  
www.giftinfo.uni-mainz.de Telefon: +49(0)6131/19240

E-mail: gcat@matthey.com  
www.alfa-chemcat.com

## 2 Hazards identification

**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.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.  
Eye Irrit. 2 H319 Causes serious eye irritation.  
STOT SE 3 H335 May cause respiratory irritation.

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

Xi; Irritant

R36/37/38: Irritating to eyes, respiratory system and skin.

R14-31: Reacts violently with water. Contact with acids liberates toxic gas.

**Label elements**  
**Labelling according to Regulation (EC) No 1272/2008**  
**Hazard pictograms**

The substance is classified and labelled according to the CLP regulation.



GHS02 GHS07

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

Warning  
H261+EUH014 In contact with water releases flammable gases. Reacts violently with water.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.

**Precautionary statements**

EUH031 Contact with acids liberates toxic gas.  
P231+P232 Handle under inert gas. Protect from moisture.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P302+P352 IF ON SKIN: Wash with plenty of soap and water.  
P321 Specific treatment (see on this label).  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Other hazards**  
**Results of PBT and vPvB assessment**  
**PBT:**  
**vPvB:**

Not applicable.  
Not applicable.

## 3 Composition/information on ingredients

**Chemical characterization: Substances**  
**(CAS#) Designation:** Aluminum sulfide (CAS# 1302-81-4)  
**Identification number(s):**  
**EINECS Number:** 215-109-0

## 4 First aid measures

**Description of first aid measures**  
**General information**

Instantly remove any clothing soiled by the product.  
Remove breathing apparatus only after soiled clothing has been completely removed.  
In case of irregular breathing or respiratory arrest provide artificial respiration.  
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.  
**After inhalation**  
Seek immediate medical advice.  
**After skin contact**  
Instantly 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 doctor.  
**After swallowing**  
Do not induce vomiting; instantly call for medical help.  
Seek immediate medical advice.

## 5 Firefighting measures

**Extinguishing media**  
**Suitable extinguishing agents** CO2, sand, extinguishing powder. Do not use water.  
**For safety reasons unsuitable extinguishing agents** Water.  
**Special hazards arising from the substance or mixture** Can be released in case of fire:  
Metal oxide  
Sulphur oxides (SOx)  
Hydrogen sulphide  
**Advice for firefighters**  
**Protective equipment:** Wear self-contained breathing apparatus.  
Wear full protective suit.

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

Put on breathing apparatus.  
Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation  
Do not allow material to be released to the environment without proper governmental permits.

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

Dispose of contaminated material as waste according to item 13.  
Ensure adequate ventilation.

**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.

**7 Handling and storage****Handling  
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.  
Open and handle container with care.

**Information about protection against explosions and fires:**

No information known.

**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 water.  
Store away from oxidizing agents.

**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 keep away from water.  
Store in a locked cabinet or with access restricted to technical experts or their assistants.

**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 critical values that require monitoring at the workplace:**

Not required.

**Additional information:**

No data

**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 foodstuffs, beverages and food.  
Instantly remove any soiled and impregnated garments.  
Wash hands during breaks and at the end of the work.  
Store protective clothing separately.  
Avoid contact with the eyes and skin.  
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.  
Safety glasses  
Protective work clothing.

**Breathing equipment:****Protection of hands:****Material of gloves****Eye protection:****Body protection:****9 Physical and chemical properties****Information on basic physical and chemical properties****General Information****Appearance:**

**Form:** Granulate  
**Colour:** Yellowish  
**Smell:** Like rotten eggs  
**Odour threshold:** Not determined.

**pH-value:** Not applicable.

**Change in condition**

**Melting point/Melting range:** 1100°C  
**Boiling point/Boiling range:** 1500°C  
**Sublimation temperature / start:** Not determined

**Flash point:** Not applicable

**Inflammability (solid, gaseous)** Not determined.

**Ignition temperature:** Not determined

**Decomposition temperature:** Not determined

**Self-inflammability:** Not determined.

**Danger of explosion:** Product is not explosive.

**Critical values for explosion:**

**Lower:** Not determined  
**Upper:** Not determined

**Steam pressure:** Not applicable.

**Density at 20°C** 2.02 g/cm<sup>3</sup>  
**Relative density** Not determined.  
**Vapour density** Not applicable.

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Evaporation rate	Not applicable.
Solubility in / Miscibility with Water:	Reacts Reacts violently
Segregation coefficient (n-octanol/water):	Not determined.
Viscosity: dynamic: kinematic:	Not applicable. Not applicable.
Other information	No further relevant information available.

**10 Stability and reactivity**

Reactivity	
Chemical stability	
Thermal decomposition / conditions to be avoided:	No decomposition if used and stored according to specifications.
Possibility of hazardous reactions	No dangerous reactions known
Incompatible materials:	Acids Water/moisture Oxidizing agents
Hazardous decomposition products:	Metal oxide Sulphur oxides (SO <sub>x</sub> ) Hydrogen sulphide

**11 Toxicological information**

Information on toxicological effects	
Acute toxicity:	
Primary irritant effect: on the skin:	Irritant for skin and mucous membranes.
on the eye:	Irritant effect.
Sensitization:	No sensitizing effect known.
Additional toxicological information:	To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. Danger by skin resorption. No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

**12 Ecological information**

Toxicity	
Acquatic toxicity:	No further relevant information available.
Persistence and degradability	No further relevant information available.
Behaviour in environmental systems:	
Bioaccumulative potential	No further relevant information available.
Mobility in soil	No further relevant information available.
Additional ecological information:	
General notes:	Water hazard class 1 (Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system. Do not allow material to be released to the environment without proper governmental permits.
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 for proper disposal. Hand over to disposers of hazardous waste. Must be specially treated under adherence to official regulations.
Uncleaned packagings:	
Recommendation:	Disposal must be made according to official regulations.

**14 Transport information****Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)**

ADR/RID-GGVS/E Class:	4.3 (WT2) Substances which, in contact with water, emit flammable gases.
Kemler Number:	462
UN-Number:	3134
Packaging group:	III
Label	4.3+6.1
UN proper shipping name:	3134 WATER-REACTIVE SOLID, TOXIC, N.O.S. (Aluminum sulfide)
Limited quantities (LQ)	LQ12
Transport category	0
Tunnel restriction code	E

**Maritime transport IMDG/GGVSea:**

IMDG/GGVSea Class:	4.3
UN Number:	3134
Label	4.3+6.1
Packaging group:	III
Marine pollutant:	No
Correct technical name:	WATER-REACTIVE SOLID, TOXIC, N.O.S. (Aluminum sulfide)

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**Air transport ICAO-TI and IATA-DGR:**

ICAO/IATA Class: 4.3  
 UN/ID Number: 3134  
 Label: 4.3+6.1  
 Packaging group: III  
 Correct technical name: WATER-REACTIVE SOLID, TOXIC, N.O.S. (Aluminum sulfide)

**UN "Model Regulation":**

Special precautions for user: UN3134, WATER-REACTIVE SOLID, TOXIC, N.O.S., 4.3 (6.1), III  
 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Warning: Substances which, in contact with water, emit flammable gases.  
 Not applicable.

**15 Regulatory information**

Safety, health and environmental regulations/legislation specific for the substance or mixture  
 Labelling according to Regulation (EC) No 1272/2008  
 Hazard pictograms

Substance is not listed.

The substance is classified and labelled according to the CLP regulation.



GHS02 GHS07

Signal word  
 Hazard statements

Warning  
 H261+EUH014 In contact with water releases flammable gases. Reacts violently with water.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H335 May cause respiratory irritation.  
 EUH031 Contact with acids liberates toxic gas.

**Precautionary statements**

P231+P232 Handle under inert gas. Protect from moisture.  
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P302+P352 IF ON SKIN: Wash with plenty of soap and water.  
 P321 Specific treatment (see on this label).  
 P405 Store locked up.  
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**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 1 (Self-assessment): slightly hazardous for water.

**Chemical safety assessment:**

A Chemical Safety Assessment has not been carried out.

**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 data specification sheet:** Health, Safety and Environmental Department.**Contact:**

Ryan P. Wilson

**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)  
 RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 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)  
 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)

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