

**Safety Data Sheet**  
according to 1907/2006/EC, Article 31

Revision: 14.07.2010

Printing date 14.07.2010

**1 Identification of substance****Product details**

Trade name

**Selenium sulfide**

Stock number:

68104

Manufacturer/Supplier:

Alfa Aesar GmbH & Co.KG  
Benzstrasse 3  
D-76185 Karlsruhe / GermanyE-mail: gcat@matthey.com  
www.alfa-chemcat.com

Informing department:

Product safety department.

Emergency information:

Giftnotruf Universität Mainz / Poison Information Center Mainz  
www.giftinfo.uni-mainz.de Telefon:+49(0)6131/19240**2 Hazards identification**

Hazard designation:

T Toxic  
N Dangerous for the environment

Information pertaining to particular dangers for man and environment

R 23/25 Toxic by inhalation and if swallowed.  
R 33 Danger of cumulative effects.  
R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

GHS label elements

**Danger**H301 - Toxic if swallowed.  
H331 - Toxic if inhaled.**Warning**

H373 - May cause damage to organs through prolonged or repeated exposure.

**Warning**H400 - Very toxic to aquatic life.  
H410 - Very toxic to aquatic life with long lasting effects.  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
P321 Specific treatment (see on this label).  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Prevention:

Response:

Storage:

Disposal:

**3 Composition/information on ingredients**

Chemical characterization:

Designation: (CAS#)

Selenium sulfide (CAS# 7488-56-4)

Identification number(s):

EINECS Number:

231-303-8

Index number:

034-002-00-8

**4 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.

After inhalation

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

Suitable extinguishing agents

Use fire fighting measures that suit the environment.

Special hazards caused by the material, its products of combustion or flue gases:

Can be released in case of fire:  
Sulphur dioxide (SO<sub>2</sub>)  
Hydrogen selenide  
Hydrogen sulphide  
Toxic metal oxide smoke

Protective equipment:

Wear self-contained breathing apparatus.  
Wear full protective suit.**6 Accidental release measures**

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation

Measures for environmental protection:

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

Measures for cleaning/collecting:

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

Additional information:

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

Information for safe handling:

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:

The product is not flammable

Storage Requirements to be met by storerooms and containers:

No special requirements.

Information about storage in one common storage facility:

Do not store together with acids.

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**Further information about storage conditions:**

Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.  
Store in a locked cabinet or with access restricted to technical experts or their assistants.

**8 Exposure controls and 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.

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

Selenium and selenium compounds (as Se)

	mg/m <sup>3</sup>
ACGIH TLV	0.2
Austria MAK	0.1
Belgium TWA	0.2
Denmark TWA	0.1
Finland TWA	0.1; 0.3-STEL
Germany MAK	0.1
Hungary	0.1-STEL
Ireland TLV	0.1
Japan OEL	0.1
Korea TLV	0.2
Netherlands MAC-TGG	0.1
Poland TWA	0.1; 0.3-STEL
Sweden NGV	0.1
Switzerland MAK-W	0.1
United Kingdom TWA	0.1
USA PEL	0.2
	No data

**Additional information:****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.

**Breathing equipment:****Eye protection:****Body protection:**

Use breathing protection with high concentrations.  
Safety glasses  
Protective work clothing.

**9 Physical and chemical properties:****General Information**

<b>Form:</b>	Powder
<b>Colour:</b>	Orange Red-brown
<b>Smell:</b>	Not determined

**Change in condition**

<b>Melting point/Melting range:</b>	<100°C ((dec))
<b>Boiling point/Boiling range:</b>	Not determined
<b>Sublimation temperature / start:</b>	Not determined

**Flash point:** Not applicable**Ignition temperature:** Not determined**Decomposition temperature:** Not determined**Danger of explosion:** Product is not explosive.**Critical values for explosion:**

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

**Steam pressure:** Not determined**Density:** Not determined**Solubility in / Miscibility with Water:** Insoluble**10 Stability and reactivity****Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

**Materials to be avoided:**

Acids  
Organic materials  
Ammonia

**Dangerous reactions:**

No dangerous reactions known

**Dangerous products of decomposition:**

Sulphur dioxide  
Hydrogen selenide  
Toxic metal oxide smoke  
Hydrogen sulphide

**11 Toxicological information****Acute toxicity:****LD/LC50 values that are relevant for classification:**

Oral LD50 138 mg/kg

**Primary irritant effect:**

Irritant for skin and mucous membranes.

**on the skin:**

Irritant effect.

**on the eye:**

No sensitizing effect known.

**Sensitization:**

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

EPA-D: Not classifiable as to human carcinogenicity; inadequate human and animal evidence of carcinogenicity or no data are available.

IARC-3: Not classifiable as to carcinogenicity to humans.

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NTP-2: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals.

**12 Ecological information:**

**Ecotoxicological effects:**  
**Remark:** Very toxic for fish  
**Additional ecological information:**  
**General notes:** Water danger class 3 (Self-assessment): extremely hazardous for water.  
Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into soil.  
Also poisonous for fish and plankton in water bodies.  
Do not allow material to be released to the environment without proper governmental permits.  
Very toxic for aquatic organisms

**13 Disposal considerations**

**Product:**  
**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:** 6.1 (T5) Toxic substances.  
**Kemler Number:** 60  
**UN-Number:** 2657  
**Packaging group:** II  
**Label:** 6.1  
**Special marking:** Symbol (fish and tree)  
**Designation of goods:** 2657 SELENIUM DISULPHIDE  
**Limited quantities (LQ):** LQ18  
**Transport category:** 2  
**Tunnel restriction code:** D/E

**Maritime transport IMDG/GGVSea:**

**IMDG/GGVSea Class:** 6.1  
**UN Number:** 2657  
**Label:** 6.1  
**Packaging group:** II  
**Marine pollutant:** No  
**Correct technical name:** SELENIUM DISULPHIDE

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

**ICAO/IATA Class:** 6.1  
**UN/ID Number:** 2657  
**Label:** 6.1  
**Packaging group:** II  
**Correct technical name:** SELENIUM DISULPHIDE

**UN "Model Regulation":** UN2657, SELENIUM DISULPHIDE, 6.1, II  
**Environmental hazards:** Environmentally hazardous substance, solid; Marine Pollutant

**15 Regulatory information****Designation according to EC guidelines:****Code letter and hazard designation of product:**

T Toxic  
N Dangerous for the environment

**Risk phrases:** 23/25 Toxic by inhalation and if swallowed.  
33 Danger of cumulative effects.  
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Safety phrases:** 20/21 When using do not eat, drink or smoke.  
28 After contact with skin, wash immediately with plenty of water.  
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
60 This material and its container must be disposed of as hazardous waste.  
61 Avoid release to the environment. Refer to special instructions/safety data sheets.

**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 danger class 3 (Self-assessment): extremely hazardous for water.

**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:** Zachariah Holt

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Trade name **Selenium sulfide****Abbreviations and acronyms:**

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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)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent

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