
1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1 Product identifiers**

Product name : SULFUR COLLOIDAL, POWDER, >=99.0 % S

Product Number : 13825

Brand : Sigma-Aldrich

1.2 Other means of identification

No data available

1.3 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.4 Details of the supplier of the safety data sheetCompany : Sigma-Aldrich Pty. Ltd.
12 Anella Avenue
CASTLE HILL NSW 2154
AUSTRALIA

Telephone : +61 2 9841 0555 (1800 800 097)

Fax : +61 2 9841 0500 (1800 800 096)

1.5 Emergency telephone numberEmergency Phone # : Free call (24/7): 1800 448 465
Int'l (24/7): +61 2 9037 2994 (CHEMTREC)

2. HAZARDS IDENTIFICATION**2.1 GHS Classification**

Flammable solids (Category 2)

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word : Warning

Hazard statement(s)

H228 : Flammable solid.

Precautionary statement(s)

Prevention

P210 : Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P240 : Ground/bond container and receiving equipment.

P241 : Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P280 : Wear protective gloves/ eye protection/ face protection.

Response
P370 + P378

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Formula : S
Molecular weight : 32.07 g/mol

| Component | Classification | Concentration |
|------------------------|-----------------------------|----------------|
| Sulfur | | |
| CAS-No. 7704-34-9 | Flam. Sol. 2; 2; H228, H315 | >= 70 - < 90 % |
| EC-No. 231-722-6 | | |
| Index-No. 016-094-00-1 | | |

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

No data available

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Avoid breathing dust.

For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.3 no other specific.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatri® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- | | |
|---|---|
| a) Appearance | Form: dry, free flowing, water dispersible granules Colour: light yellow |
| b) Odour | sweet |
| c) Odour Threshold | No data available |
| d) pH | 6 at 10 g/l at 20 °C |
| e) Melting point/freezing point | Melting point/range: 117 - 120 °C - lit. |
| f) Initial boiling point and boiling range | 444.7 °C - lit. |
| g) Flash point | 207 °C - closed cup |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | May form combustible dust concentrations in air. |
| j) Upper/lower flammability or explosive limits | No data available |
| k) Vapour pressure | 10 hPa at 246 °C 1 hPa at 183.8 °C |
| l) Vapour density | No data available |
| m) Relative density | 2.07 g/cm ³ at 25 °C |
| n) Water solubility | dispersible |
| o) Partition coefficient: n-octanol/water | log Pow: 5.68 at 20 °C |
| p) Auto-ignition temperature | 250 °C |
| q) Decomposition temperature | No data available |

- r) Viscosity 8 mm²/s at 140 °C -
s) Explosive properties No data available
t) Oxidizing properties No data available

9.2 Other safety information

Bulk density 0.85 - 0.95 kg/m³

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Avoid moisture. Heat, flames and sparks.

10.5 Incompatible materials

Strong oxidizing agents Amines, Bases

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sulphur oxides
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - > 5,000 mg/kg
(OECD Test Guideline 401)

LC50 Inhalation - Rat - 4 h - 5.434 mg/l
(OECD Test Guideline 403)

LD50 Dermal - Rat - > 2,000 mg/kg
(OECD Test Guideline 402)

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation
(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitisation

Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION**12.1 Toxicity**

Toxicity to fish LC50 - Oncorhynchus mykiss (rainbow trout) - > 5,000 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - > 1,000 mg/l - 48 h

Toxicity to algae EC50 - Algae - > 290 mg/l - 72 h

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods****Product**

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**14.1 UN number**

ADR/RID: 1350

IMDG: 1350

IATA-DGR: 1350

14.2 UN proper shipping name

ADR/RID: SULPHUR

IMDG: SULPHUR

IATA-DGR: Sulphur

| | | |
|---|---------------------------|---------------|
| 14.3 Transport hazard class(es) ADR/RID: 4.1 | IMDG: 4.1 | IATA-DGR: 4.1 |
| 14.4 Packaging group ADR/RID: III | IMDG: III | IATA-DGR: III |
| 14.5 Environmental hazards ADR/RID: no | IMDG Marine pollutant: no | IATA-DGR: no |
| 14.6 Special precautions for user No data available | | |

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Standard for the Uniform Scheduling of Medicines and Poisons

No data available

Carcinogen classification under WHS Regulation 2011, Schedule 10

Not listed

Notification status

| | |
|---------------|--|
| AICS: | On the inventory, or in compliance with the inventory |
| DSL: | All components of this product are on the Canadian DSL |
| ENCS: | Not in compliance with the inventory - Sulfur |
| IECSC: | On the inventory, or in compliance with the inventory |
| ISHL: | Not in compliance with the inventory - Sulfur |
| KECI: | On the inventory, or in compliance with the inventory |
| NZIoC: | On the inventory, or in compliance with the inventory |
| PICCS: | On the inventory, or in compliance with the inventory |

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

| | |
|------------|---------------------------|
| | Skin corrosion/irritation |
| Flam. Sol. | Flammable solids |
| H228 | Flammable solid. |
| H315 | Causes skin irritation. |

Further information

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.