# SAFETY DATA SHEET

Version 6.6
Revision Date 02/19/2021
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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : Sulfur

Product Number : 84683
Brand : SIGALD
Index-No. : 016-094-00-1
CAS-No. : 7704-34-9

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

### 1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

### 1.4 Emergency telephone

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Skin irritation (Category 2), H315

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

### 2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H315 Causes skin irritation.

Precautionary statement(s)

| | |
|---|---|
| P264 | Wash skin thoroughly after handling. |
| P280 | Wear protective gloves. |
| P302 + P352 | IF ON SKIN: Wash with plenty of soap and water. |
| P332 + P313 | If skin irritation occurs: Get medical advice/ attention. |
| P362 | Take off contaminated clothing and wash before reuse. |

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Combustible dust

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Synonyms : sulfur (Aerosol)

Formula : S
Molecular weight : 32.07 g/mol
CAS-No. : 7704-34-9
EC-No. : 231-722-6
Index-No. : 016-094-00-1

| Component | Classification | Concentration |
|---|---|---|
| **sulphur** | | |
| | Skin Irrit. 2; H315 | <= 100 % |

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

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

**General advice**
Show this material safety data sheet to the doctor in attendance.

**If inhaled**
After inhalation: fresh air.

**In case of skin contact**
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

**In case of eye contact**
After eye contact: rinse out with plenty of water. Remove contact lenses.

**If swallowed**
After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

### 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

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Foam Carbon dioxide (CO2) Dry powder

**Unsuitable extinguishing media**
For this substance/mixture no limitations of extinguishing agents are given.

### 5.2 Special hazards arising from the substance or mixture
Sulfur oxides
Combustible.
Development of hazardous combustion gases or vapours possible in the event of fire.

### 5.3 Advice for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### 5.4 Further information
Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.
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
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

### 6.4 Reference to other sections
For disposal see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling
For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

**Storage conditions**
Tightly closed. Keep away from heat and sources of ignition.
Storage class (TRGS 510): 4.1B: Flammable solid hazardous materials

### 7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

**Ingredients with workplace control parameters**
Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

**Appropriate engineering controls**
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

**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). Safety glasses

**Skin protection**
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:KCL 741 Dermatril® L

**Body Protection**
protective clothing

**Respiratory protection**
required when dusts are generated.
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

**Control of environmental exposure**
Do not let product enter drains.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | | |
|---|---|---|
| a) | Appearance | Form: powder<br>Color: light yellow |
| b) | Odor | No data available |
| c) | Odor Threshold | No data available |
| d) | pH | No data available |
| e) | Melting point/freezing point | Melting point/range: 118 - 120 °C (244 - 248 °F) |
| f) | Initial boiling point and boiling range | 444.7 °C 832.5 °F |
| g) | Flash point | ()Not applicable |
| h) | Evaporation rate | No data available |
| i) | Flammability (solid, gas) | May form combustible dust concentrations in air. |
| j) | Upper/lower flammability or explosive limits | Upper explosion limit: 6.83 %(V)<br>Lower explosion limit: 0.17 %(V) |
| k) | Vapor pressure | 0.00001 hPa at 40 °C (104 °F) |
| l) | Vapor density | No data available |
| m) | Relative density | No data available |
| n) | Water solubility | 0.00001 g/l at 22 °C (72 °F) - OECD Test Guideline 105 |
| o) | Partition coefficient: n-octanol/water | Not applicable for inorganic substances |
| p) | Autoignition temperature | 240 °C (464 °F) |
| q) | Decomposition temperature | No data available |
| r) | Viscosity | 8 mm2/s at 140 °C (284 °F) - |
| s) | Explosive properties | No data available |
| t) | Oxidizing properties | No data available |

### 9.2 Other safety information

No data available

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

**10.3 Possibility of hazardous reactions**

Risk of explosion with:
Alkali metals
Ammonia
Barium
bromates
chlorates
Barium nitrate
Chlorites
Calcium
Hypochlorites
chlorine dioxide
chromium(VI) oxide
chlorine oxides
Ether
iodates
Potassium
nitrates
potassium permanganate
perchlorates
Lithium
sodium
nitrites
Peroxides
Strong oxidizing agents
permanganates
phosphorus
mercury oxide
ammonium nitrate
magnesium
in powder form
Zinc
in powder form
Risk of ignition or formation of inflammable gases or vapours with:
nitrides
powdered aluminium
carbides
chromates/perchromates
Lead oxides
halogen-halogen compounds
phosphides
chromyl chloride
Iron
Alkaline earth metals
Fluorine
Indium
Nickel
carbon disulfide
selenium
silver oxide
nitrogen dioxide
Uranium
carbon
Exothermic reaction with:
Sulfides

Boron
Bromine
Chlorine
halogens
Copper
lithium silicide
Powdered metals
organic nitro compounds
Oxides of phosphorus
Hydrogen
Tin
cadmium
in powder form

### 10.4 Conditions to avoid
Avoid moisture. Heat, flames and sparks.
no information available

### 10.5 Incompatible materials
Copper, Mild steel, Strong oxidizing agents

### 10.6 Hazardous decomposition products
In the event of fire: see section 5

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**
LD50 Oral - Rat - male and female - > 2,000 mg/kg
(OECD Test Guideline 401)
LC50 Inhalation - Rat - male and female - 4 h - > 5.43 mg/l
(OECD Test Guideline 403)
LD50 Dermal - Rat - male and female - > 2,000 mg/kg
(OECD Test Guideline 402)
No data available

**Skin corrosion/irritation**
Skin - Rabbit
Result: Skin irritation
(OECD Test Guideline 404)

**Serious eye damage/eye irritation**
Eyes - Rabbit
Result: No eye irritation
(OECD Test Guideline 405)

**Respiratory or skin sensitization**
in vivo assay - Guinea pig
Result: negative
(OECD Test Guideline 406)

**Germ cell mutagenicity**
No data available
Ames test

Salmonella typhimurium
Result: negative
OECD Test Guideline 474
Mouse - male and female
Result: negative

**Carcinogenicity**

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

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**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

### 11.2 Additional Information
Not available

Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting., Dermatitis
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

## SECTION 12: Ecological information

### 12.1 Toxicity
No data available

### 12.2 Persistence and degradability
The methods for determining biodegradability are not applicable to inorganic substances.

### 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

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

**Product**

Waste material must be disposed of in accordance with the national and loc No mixing with other waste. Handle uncleaned containers like the product See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

## SECTION 14: Transport information

**DOT (US)**

NA-Number: 1350 Class: 9 Packing group: III
Proper shipping name: Sulfur
Reportable Quantity (RQ):
Poison Inhalation Hazard: No

**IMDG**

UN number: 1350 Class: 4.1 Packing group: III EMS-No: F-A, S-G
Proper shipping name: SULPHUR

**IATA**

UN number: 1350 Class: 4.1 Packing group: III
Proper shipping name: Sulphur

## SECTION 15: Regulatory information

**SARA 302 Components**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 313 Components**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**

No SARA Hazards

**Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

## SECTION 16: Other information

### Further information

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.


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