

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

1.1 Product Identifier:

Sulphur

1.2 Relevant uses of the substance or mixture and uses advised against:

Supplied for use as a fertiliser

1.3 Details of the supplier of the safety data sheet:

Chempak Products
Thompson & Morgan
Poplar Lane
Ipswich
Suffolk
IP8 3BU

Contact: The Safety Officer

Telephone Number: 01473 588688 (Monday – Friday 8am to 5pm)

Or visit www.chempak.com

1.4 Emergency telephone number:

Emergency Telephone Number: 01473 588688 (Monday – Friday 8am to 5pm)

2. Hazards identification

2.1 Classification of the substance or mixture

CLASSIFICATION according to Regulation (EC) 1272/2008 Classification, Labelling and Packaging

Flam. Sol. 2, H228 Flammable solid

Skin Irritation, Category 2, H315 Causes skin irritation

CLASSIFICATION according to Directive 1999/45/EC and statutory instrument No.716 2009 Chemicals (Hazard Information and Packaging) regulation

Xi; R38 Irritating to skin

2.2 Label Elements

Labelling elements according to Regulation (EC) No. 1272/2008:

Hazard pictograms:

GHS02, GHS07



Signal Word: Warning

Hazard Statements:

H228 Flammable solid

H315 Causes skin irritation

Precautionary Statements:

P102 Keep out of reach of children

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

P264 Wash face, hands and any exposed 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

2.3 Other Hazards



P362 Take off contaminated clothing and wash before reuse

P241 Use explosion-proof electrical/ventilation/lighting equipment when handling Sulphur

3. Composition/information on ingredients

3.2 Mixtures

Hazardous components

Chemical Name	CAS-No./ EINECS-No.	Annex Index or REACH number	Symbol(s)	Phrase(s)	Concentration [%]
Sulphur	7704-34-9 231-722-6	-	According to 1272/2008: GHS07  According to 67/548/EEC:  Xi –IRRITANT	According to 1272/2008: Skin Irrit. 2 H315 According to 67/548/EEC: R38	90.0

All hazard information if not displayed in section 2 or 3 is displayed in Section 16.

4. First aid measures

4.1 Description of first aid measures

4.1.1 Inhalation

Keep patient calm, remove to fresh air and seek medical attention. Should irritation of the respiratory tract occur following inhalation, or if breathing becomes irregular, seek medical advice. If patient is unconscious, place in recovery position and seek medical attention.

4.1.2 Skin & Eye exposure

Skin: Wash off thoroughly with plenty of soap and water. Seek medical attention if symptoms persist or develop.

Eyes: Rinse thoroughly with plenty of water for at least 15 minutes. Seek medical attention if symptoms persist or develop.

4.1.3 Ingestion

Wash out mouth with water and give water to drink. Do not induce vomiting. Seek medical attention if symptoms persist or develop.

4.2 Most important symptoms and effects, both acute and delayed

Irritant effects, Diarrhoea

4.3 Indication of any immediate medical attention and special treatment needed.

Treat symptomatically.

5. Firefighting measures

5.1 Extinguishing media

Extinguish with a fine water spray or fog - not a water jet. Small sulphur fires can be smothered with an application of earth or sand.

5.2 Special Hazards arising from the substance or mixture

Irritation of the lung and eye may take place with combustion forms of gaseous oxides of sulphur. Dust can explode in certain conditions.

5.3 Advice for fire-fighters

In the event of fire, wear self-contained breathing apparatus and protective suit. Cool down containers/equipment exposed to heat with a water spray. Contain spread of extinguishing fluids (these fluids may be hazardous for the environment).

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. In case of emergency, evacuate the danger area, observe emergency procedures, and consult an expert. Personnel should wear full protective clothing: chemical gloves and goggles, anti-static, anti-spark footwear, and regularly laundered overalls. Dust masks and suitable breathing apparatus should also be used if there is a risk of exposure to fumes or combustion products.

6.2 Environmental precautions

Do not empty into drains. Retain and dispose of contaminated wash water. Inform the Environment Agency if product enters watercourse in large quantities.

6.3 Methods and material for containment and cleaning up

Remove all sources of ignition, and avoid dust formation. Cover drains. Collect, bund and pump off spills using non-sparking tools and equipment.

6.4 Reference to other sections

For personal protection see section 8.

7. Handling and storage

7.1 Precaution for safe handling

Wear personal protective clothing and equipment. Ensure adequate ventilation. Do not get in eyes, on skin or on clothing. Avoid ingestion and inhalation. Make sure that eye baths are available wherever accidental exposure may occur so that quick treatment can be given.

Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition. Take measures to avoid buildup of electrostatic charge. No smoking in storage and handling areas.

Powdered sulphur that is not dust suppressed should be processed in an inert atmosphere, where all equipment can be earthed. Explosion vents of the correct specification should be interlocked with process equipment drives. When open handling, take local exhaust ventilation or dust extraction measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool, dry, and well ventilated premises away from other flammable materials. Keep away from open flames, hot surfaces and sources of ignition.

Suitable storage materials: laminated paper or plastic sacks, fibreboard kegs, aluminium. Unlined steel or any spark generating material are not recommended.

Explosive properties of sulphur dusts:

Ignition temperature of dust cloud: 190 deg. C

Minimum spark energy for ignition of cloud: 15 mJ

Minimum explosive concentration: 35 mg/l

Maximum explosion pressure: 5.5 bar

Average rate of pressure rise: 116 bar/sec

Maximum rate of pressure rise: 325 bar/sec

7.3 Specific end use(s)

Always read the label and product information before use.

8. Exposure controls and personal protection

8.1 Control Parameters

Occupational exposure limits:

Occupation Exposure Limits 8-hour TWA values:

For sulphur dust, total dust 10 mg/cubic metre; respirable dust 4 mg/cubic metre.

For sulphur dioxide, 5.3 mg/cubic metre (2 ppm), [and 10 minute TWA value 13 mg/cubic metre (5 ppm)]

8.2 Exposure controls

Engineering controls:

Use local exhaust if dusting occurs. Natural ventilation is adequate in absence of dusts.

Personal protective equipment:

Dust safety masks recommended where working powder concentration is more than 10mg/m³.

Protective gloves. Safety glasses with side-shields. Do not wear contact lenses where this product is used. Wash hands thoroughly after handling this product. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance; Solid pastilles

Colour; Information not available

Odour; Slight characteristic odour

Odour threshold; Information not available

pH; Neutral when dry

Melting point; 119 °C (246 °F)

Initial boiling point; 444 °C (832 °F)

Flash point; Information not available

Evaporation rate; Information not available

Flammability (solid, gas); Information not available

Upper /lower flammability or explosive limits; Not applicable

Density; 1.25 – 1.27

Vapour Pressure; Solid: less than 0.0001mm. Hg at 20°C (68°F)

Vapour density; >1

Specific gravity; Information not available

Solubility (ies); Water insoluble

Partition coefficient: n-octanol/water; Information not available

Auto ignition temperature: Information not available

Decomposition temperature: Information not available

9.2 Other Information

No information specified

10. Stability and reactivity

10.1 Reactivity

Risk of dust explosion. Sulphur can contain hydrogen sulphide, an extremely hazardous, toxic compound which can achieve explosive concentrations if released in unventilated rooms.

10.2 Chemical Stability

Elemental sulphur will not decompose over time so long as it is stored in a correct manner. For conditions to avoid, see Section 7, Handling and Storage.

Air - Sulphur burns in the air to form sulphur dioxide and other oxides. Only in exceptional circumstances such as atomisation does rapid combustion take place in air at normal handling temperatures

Water - There is generally no dangerous reaction to water Acids - There is generally no dangerous reaction to acids

Bases/alkalis - There is generally no dangerous reaction to bases and alkalis

10.3 Possibility of hazardous reactions

Oxidising agents - When mixed with oxidising materials like chlorates, perchlorates, permanganates and nitrates, sulphur forms a highly sensitive and explosive substance.

Other chemicals: Other substances that may initiate a dangerous reaction are: halogens, carbides, halogenates; many metals but especially alkali metals and alkaline earths; charcoal, phosphorus, fluorides, and nitrides; sulphur dichloride; halogenates.

10.4 Conditions to avoid

Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition. Take measures to avoid buildup of electrostatic charge. No smoking in storage and handling areas.

Powdered sulphur that is not dust suppressed should be processed in an inert atmosphere, where all equipment can be earthed. Explosion vents of the correct specification should be interlocked with process equipment drives. When open handling, take local exhaust ventilation or dust extraction measures.

10.5 Incompatible materials

Copper and mild steel. See also Section 10.3

10.6 Hazardous decomposition products

Gaseous oxides of Sulphur, Hydrogen Sulphide gas, sulphur dust. See Section 5 for recommendations in the event of fire.

11. Toxicological information

11.1 Information on toxicological effects

Sulphur

Acute Toxicity:

Acute oral toxicity:

LD50 > 5000 mg/kg

Species rat

Source IUCLID

Acute Dermal Toxicity:

LD50 >2000 mg/kg

Species rabbit

Source IUCLID

Acute Inhalation Toxicity:

LC50 9.23 mg/L

Duration of exposure 4 hours Species rat

Source IUCLID

Information on likely routes of exposure:

Skin - causes skin irritation

Eyes - slight irritation. Eye contact may cause mechanical irritation through dust particles

Inhalation of dusts- May irritate the respiratory tract.

Sensitisation- non-sensitising.

Effects after repeated or prolonged exposure (subacute, subchronic, chronic):

Genotoxicity: in vitro Ames Test- Salmonella typhimurium. Result negative

Specific target organ toxicity – single exposure:

The substance is not classified as a specific target organ toxicant, single exposure.

Specific target organ toxicity – repeated exposure:

The substance is not classified as a specific target organ toxicant, repeated exposure.

Aspiration hazard:

No aspiration toxicity classification

12. Ecological information

12.1 Toxicity

Toxicity to Fish:

LC50 Brachydanio rerio (zebra fish) 866 mg/L Duration of exposure 96 hours (source IUCLID)

LC50 Oncorhynchus mykiss (rainbow trout) >180mg/L Duration of exposure 96 hours.

Toxicity to Daphnia & other aquatic invertebrates:

EC50 Daphnia magna (water flea) >10,000 mg/L Exposure time 24 hours.

Toxicity to Bacteria:

EC50 Activated sludge 1,900mg/L Exposure time 3hours. Method ISO 8192

12.2 Persistence and degradability

Sulphur is a natural component in water and soil.

12.3 Bioaccumulative potential

Sulphur has low potential for bioaccumulation.

12.4 Mobility in soil

Sulphur has slight mobility in soil.

12.5 Results of PBT and vPvB

Not classified

12.6 Other adverse effects

No ecological problems are expected, when the product is handled and used with due care and attention.

13. Disposal considerations

13.1 Waste Treatment Methods

All forms of sulphur, or other materials contaminated with sulphur must be disposed of in accordance with Waste Disposal Regulations, using a licensed waste contractor. In the case of spillage, full protective clothing must be worn as detailed in Section 8.

Refer also to the accidental release measures in Section 6.

14. Transport information

14.1 UN number: Not classified for transport

14.2 UN proper shipping name: No information available

14.3 Transport hazard: No information available

14.4 Packing group: -

14.5 Environmental hazards: Not a marine pollutant

14.6 Special precautions for user: No Information available

14.8 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code: No information available

This product is considered to be non-restricted in terms of storage and transport due to the fact it is a formed sulphur product.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture. This substance/mixture is classified and labelled in accordance with Regulation EC 1272/2008, Directive 1999/45/EC, the statutory instrument No.716 2009 Chemicals (Hazard Information and Packaging) regulations and the EC Fertiliser Regulations 2003, Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

15.2 Chemical Safety Assessment
CSA not undertaken for this product

16. Other information

SDS information:

This Safety data sheet is compiled using data submitted for raw materials and practical experience.

This Safety Data Sheet is prepared in compliance with Directive 1999/45/EC, Regulation 1272/2008 and Annex I of the REACH Regulation 453/2010.

The information given herein is, to the best of our knowledge, correct and is presented in good faith but no warranty, expressed or implied is given.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release, and is not to be considered a warranty of quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.