SAFETY DATA SHEET

99.99%

Sulphur Powder

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. PRODUCT IDENTIFIER

Product name:	Sulphur Powder
Product No.:	SU
CAS No.:	7704-34-9
EC No.:	231-722-6
Synonym:	Sulfur
Chemical Name:	SULPHUR
Chemical Formula:	S

1.2. RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

Use of the substance/mixture : Laboratory chemicals, Industrial & for professional use only.

1.3. DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

HD Chemicals LTD
UNIT 9 Scott Business Park
PL2 2PB Plymouth UK

Contact Person responsible for SDS: Mr Peter Konefal, e-mail: contact@hdchemicals.co.uk

SECTION 2: HAZARDS IDENTIFICATION

2.1. CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

Classification according to Regulation (EC) No 1272/2008 Skin irritation (Category 2), H315

2.2. Label elements

Signal Words
Warning

Hazard Phrases

H315	Causes skin irritation

Protection Phrases

P280	Wear protective gloves, protective clothing, eye protection, face protection
P302+ P352	IF ON SKIN: Wash with plenty of water
P362+P364	Take off contaminated clothing and wash it before reuse
P332 +P313	If skin irritation occurs: Get medical advice/attention

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Composition information – main constituents

Substance name	Mol. Formula	Typical conc. (%w/w)	EC No.	CAS-No.
Sulphur	S	≥99.99%	231-722-6	7704-34-9

SECTION 4: FIRST AID MEASURES

4.1. DESCRIPTION OF FIRST AID MEASURES

First-aid measures general: Consult a physician. Show this safety data sheet to the doctor in attendance.

Inhalation: Move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

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

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

Eye contact: Flush eyes with water as a precaution.

4.2. MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Inhalation: Coughing

Ingestion: Throat dryness

Skin contact: Mild irritation, dryness

Eye contact: Mild eye irritation, redness

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

Unsuitable extinguishing media: No unsuitable extinguishing media known.

5.2. SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Solid and molten sulfur can be ignited; burning sulfur produces sulfur dioxide, anirritating, toxic, and suffocating gas. Molten sulfur may evolve HYDROGEN SULFIDE (toxic gas) which may accumulate in storage container vapor space. High concentration may cause immediate unconsciousness - death may result unless victim is promptly and successfully resuscitated.

5.3. ADVICE FOR FIRE-FIGHTERS

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 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. Ensure adequate ventilation. Avoid breathing dust.

6.2. ENVIRONMENTAL PRECAUTIONS

Do not let product enter drains.

6.3. METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

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

SECTION 7: HANDLING AND STORAGE

7.1. PRECAUTIONS FOR SAFE HANDLING

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.
Don't use empty container before it has been cleaned.
Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.
Contaminated clothing should be changed before entering eating areas.
Do not eat or drink while working.

7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Flammable solid hazardous materials
Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.
Avoid accumulating electrostatic charge.
Keep away from food, drink and feed.

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/EXPOSURE GUIDELINES

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

Protective equipment:

Respiratory equipment: For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle r (US) or type ABEK- P2(EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (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.

Body protection: Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Eye/Face protection: Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Inspect gloves before use. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Remove gloves with care avoiding skin contamination. Respiratory Protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly.

Environmental exposure controls: Prevent product from entering drains. Do not allow material to contaminate ground water system.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Powder
Colour:	Light yellow
Odour:	slight (rotten eggs)
Solubility:	insoluble in water
Initial boiling point (°C):	444.7 °C
Melting point (°C):	Melting point/range: 118 - 120 °C
Freezing point:	No data available
Relative density:	2.07 g/mL at 25 °C
Specific gravity / density:	N/A
Vapour density:	Not available
Vapour pressure:	10 hPa at 246 °C
	1 hPa at 183.8 °C
Flash point (°C):	207 °C - closed cup
Molecular mass:	32.06 g/mol
Auto-ignition temperature:	240 °C
Oxidizing properties :	No data available
Decomposition temperature:	8 mm2/s at 140 °C -
Flammability (solid, gas):	May form combustible dust concentrations in air
Corrosiveness:	Slightly corrosive to mild steel
Upper/lower flammability or explosive limits :	Upper explosion limit: 6.83 %(V) Lower explosion limit: 0.17 %(V)
Molecular formula:	S

SECTION 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, acids, alkalis, halogenated compounds.

10.6. HAZARDOUS DECOMPOSITION

Hazardous decomposition products formed under fire conditions. - Sulphur oxides.

Other decomposition products - No data available.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. INFORMATION ON TOXICOLOGICAL EFFECTS

ECOTOXICITY DATA: Practically non-toxic. High concentrations will however make soils acidic.

ENVIRONMENTAL FATE: Used up by some soil microbe's and plants

Acute toxicity:	LDLO Oral - Rabbit - 175 mg/kg(Sulfur)
	LD50 Oral - Rat - > 2,000 mg/kg(Sulfur)
	LC50 Inhalation - Rat - 4 h - > 9.23 mg/l(Sulfur)
	LD50 Dermal - Rabbit - > 2,000 mg/kg(Sulfur)
	LDLO Intravenous - Rat - 8 mg/kg(Sulfur)
	LDLO Intravenous - Rabbit - 5 mg/kg(Sulfur)
	LDLO Intraperitoneal - Guinea pig - 55 mg/kg(Sulfur)
	LDLO Intravenous - Dog - 10 mg/kg(Sulfur)
Skin corrosion/irritation:	Skin - Rabbit(Sulfur)
	Result: Moderate skin irritation
	(OECD Test Guideline 404)

Serious eye damage/eye irritation: Eyes - Rabbit(Sulfur)

Result: No eye irritation

Respiratory or skin sensitisation: No data available(Sulfur)

Germ cell mutagenicity: No data available(Sulfur)

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(Sulfur)

Specific target organ toxicity - single exposure: No data available(Sulfur)

Specific target organ toxicity - repeated exposure: No data available

Aspiration hazard: No data available(Sulfur)

Additional Information: **RTECS: WS4250000**

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

SECTION 12: ECOLOGICAL INFORMATION

12.1. TOXICITY

Toxicity to fish: LC50 - Oncorhynchus mykiss (rainbow trout) - > 180mg/l - 96h (Sulfur)

LC50 - other fish - 866mg/l - 96h (Sulfur)

Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Water flea) - > 5,000mg/l - 48h (Sulfur)

12.2. PERSISTENCE AND DEGRADABILITY

There are no data on the degradability of this product.

12.3. BIOACCUMULATIVE POTENTIAL

No additional information available.

12.4. MOBILITY

No additional information available.

12.5. RESULTS OF PBT AND VPVB ASSESSMENT

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6. OTHER ADVERSE EFFECTS

Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS

Product Waste disposal recommendations: Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chem scrubber.

Contaminated Packaging: Dispose of as unused product

Clean Packaging: Place empty container in the bin.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

UN number	1350
UN proper shipping name	SULPHUR
Transport hazard class(es)	4.1
Packing group	III
IMDG Marine pollutant:	no

ADR

UN number	1350
UN proper shipping name	SULPHUR
Transport hazard class(es)	4.1
Packing group	III

IATA

UN number	1350
UN proper shipping name	SULPHUR
Transport hazard class(es)	4.1
Packing group	III
Environmental hazards	none

SECTION 15: REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE

Safety, health and environmental regulations/legislation specific for the substance or mixture
Dir. 98/24/EC (Risks related to chemical agents at work)
Dir. 2000/39/EC (Occupational exposure limit values)
Regulation (EC) n. 1907/2006 (REACH)
Regulation (EC) n. 1272/2008 (CLP)
Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013
Regulation (EU) 2015/830
Regulation (EU) n. 286/2011 (ATP 2 CLP)
Regulation (EU) n. 618/2012 (ATP 3 CLP)
Regulation (EU) n. 487/2013 (ATP 4 CLP)
Regulation (EU) n. 944/2013 (ATP 5 CLP)
Regulation (EU) n. 605/2014 (ATP 6 CLP)
Regulation (EU) n. 2015/1221 (ATP 7 CLP)
Regulation (EU) n. 2016/918 (ATP 8 CLP)
Regulation (EU) n. 2016/1179 (ATP 9 CLP)

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product: No restriction.

Restrictions related to the substances contained: No restriction.

Where applicable, refer to the following regulatory provisions :

Directive 2012/18/EU (Seveso III)

Regulation (EC) nr 648/2004 (detergents).

1999/13/EC (VOC directive)

Dir. 2004/42/EC (VOC directive)

Provisions related to directive EU 2012/18 (Seveso III):

N.A.

15.2. CHEMICAL SAFETY ASSESSMENT

No Chemical Safety Assessment has been carried out for the substance.

SECTION 16: OTHER INFORMATION

General information

The information contained in this safety data sheet is provided in accordance with the requirements of the regulations. The product should not be used for purposes other than those shown in section 1 without first referring to the supplier and obtaining written handling instruction. As the specific conditions of use of the product are outside the suppliers control, the user is responsible for ensuring that the requirements of relevant legislation are complied with.

Revision Comments

This information is provided in a revised format to that previously produced.

Revision Date: 01/01/2017

Revision: 01

Safety Data Sheet Status Approved.

Date printed 01/01/2017

Signature Initials P.K.

DISCLAIMER:

If this product is re-distributed and re-formulated for sale, details of its hazards and recommended methods for safe handling must be passed to customers. Customers are urged to ensure that the product is entirely suitable for their own purpose. It is the customer's responsibility to ensure that a suitable and sufficient assessment of the risks created by a work activity using this product is undertaken before this product is used.

NOTE:

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.The data given here is based on current knowledge and experience. The purpose of this data sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the product's properties.