

SAFETY DATA SHEET

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

1.1 Product identifier: **SULPHUR**

Synonyms: Sulfur (REACH);
Sulfur (IUPAC)
Milled sulfur,
Granular sulfur

Index number: 016-094-00-1

EC number: 231-722-6

REACH registration number: 01-2119487295-27-XXXX

CAS number: 7704-34-9

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

1.2.1 Identified uses: The product is used as a raw material in the organic and inorganic chemical industry, including the production of sulfuric acid, fertilizers, crop protection chemicals, paper, paper and plastic packaging, explosive materials, carbon electrodes, cutting fluids, rubber vulcanizing, crude oil refining, steel melting, pH control in food industry, disinfection of tools and rooms used for agricultural manufacturing processes.

1.2.2 Uses advised against: See Section 15.

1.3 Details of the supplier of the safety data sheet:

Centro-chem sp. z o.o. sp.k.
Turka 141b, 20-258 Lublin 62,
Tel. +48 81 756 55 20
Fax: +48 81 756 55 10

E-mail address for a competent person responsible for the safety data sheet:

bartosz@centro-chem.pl

1.4 Emergency telephone number: Please call national emergency numbers.

1.5 Update info:

Date of the update: 14. 04. 2023

Revision: 2.0

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture:

Skin corrosion/irritation, Hazard Category 2 H315: Causes skin irritation.

2.2 Label elements:

Pictogram



Signal word:

Warning

Hazard Statements:

H315: Causes skin irritation.

Precautionary Statements:

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

P302+P352: IF ON SKIN: Wash with plenty of water.

P332+P313: If skin irritation occurs: Get medical advice/attention.

2.3 Other hazards:

PBT/vPvB: Not applicable (inorganic substance).

Endocrine disrupting properties: The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

SECTION 3: Composition/information on ingredients.

3.1 Substances:

Substance: sulphur

Mass fraction: min. 99 %

CAS number: 7704-34-9

EC number: 231-722-6

Index number: 016-094-00-1

REACH registration number: 01-2119487295-27-XXXX

Chemical formula: S

Molar mass: 32.07

Classification of the substance:

Skin corrosion/irritation, Hazard Category 2 H315: Causes skin irritation.

3.2 Mixtures: Not applicable.

SECTION 4: First aid measures.

4.1 Description of first aid measures:

General information: Check the vital functions.

Unconscious: maintain adequate airway and respiration.

Respiratory arrest: artificial respiration or oxygen.

Cardiac arrest: perform resuscitation.

Victim conscious with laboured breathing: half-seated.

Give psychological aid.

a) Inhalation: Remove to fresh air. Keep in warm and at rest. Give oxygen or artificial aspiration if needed. If symptoms persist seek medical attention.

b) Contact with eyes: Remove contact lenses, if present and easy to do. Rinse cautiously with water for 15 minutes. Seek medical attention.

c) Contact with skin: Remove contaminated clothes; wash off any skin contaminations with soap and water. Launder contaminated clothes before re-use.

d) Ingestion: Get prompt qualified medical attention. If conscious, give 1-2 glasses of water with absorbent carbon.

4.2 Most important symptoms and effects, both acute and delayed:

Not likely to occur.

4.3 Indication of any immediate medical attention and special treatment needed: If SO₂ is released, use respiratory protection.

Show the safety data sheet, label or packaging to the medical personnel providing aid.

Recommendations for doctors: symptomatic treatment.

SECTION 5: Firefighting measures.

5.1 Extinguishing media:

Suitable extinguishing media: Sprayed water, foam, CO₂ and other available extinguishing media.

Unsuitable extinguishing media: Do not use water directly on material. Heat is generated when product mixed with water.

5.2 Special hazards arising from the substance or mixture:

Flammable substance. While burning, sulphur emits toxic (in contact with respiratory tracts), irritating gas – sulphur dioxide. People should be immediately evacuated from zones under the hazard of explosion and contamination from poisonous gases generated during fire.

Containers exposed to the effect of fire or high temperature are to be cooled with water currents and, to possible extent, safely removed from danger zone and continuously cooled.

Dusts and steams of sulphur combined with air form explosive mixtures, which may cause transfer of explosions and fires.

5.3 Advice for firefighters: Use spray, droplet and mist water for extinguishing a large fire. Water mist is efficient in rooms.

Use full, fireproof clothing and respiratory apparatus with independent air supply.

SECTION 6: Accidental release measures.

6.1 Personal precautions, protective equipment and emergency procedures:

6.1.1 For non-emergency personnel:

- a) Wear suitable protective equipment (including personal protective equipment referred to under section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing;
 - b) Remove of ignition sources, provide sufficient ventilation, control of dust;
 - c) Evacuate the danger area and consult an expert.
- Avoid contact with skin and eyes, avoid contact with substance.
Remove contaminated clothing and wash before reuse.

6.1.2 For emergency responders:

Wear suitable protective equipment (including personal protective equipment referred to under section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing;

6.2 Environmental precautions: Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up: Remove unprotected persons out of the danger zone. Secure gullies. Avoid direct contact with the product. Avoid inhalation of dusts. If possible, protect against further release. Put damaged package in the container. Collect dry spilled product. Flush remains with water. Dispose to an authorized waste collection point.

6.4 Reference to other sections: For personal protection, see section 8.

In the case of waste management, see section 13

SECTION 7: Handling and storage.

7.1 Precautions for safe handling:

Handle in accordance with good industrial hygiene and safety practice. Use only with adequate ventilation and in closed systems. Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Keep away from heat, sparks, flame and other sources of ignition. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid generation of dust.

7.2 Conditions for safe storage, including any incompatibilities:

All storage rooms must be ventilated due to the risk of the formation of explosive mixtures with air. Electrical systems should be explosion-proof. Keep away from naked flame, heat sources and reactive products (strong bases, oxidants).

Large amounts of sulphur are kept in bulk, preferably under cover. Smaller amounts are stored in bags, jars or drums.

Storage temperature:

Undetermined.

Incompatible with:

Avoid contact with pyrophoric iron, copper components, ammonia, nitric acid, metallic dust, chlorates, nitrates, perchlorates, permanganates, anhydrides. Molten sulphur reacts with most oxidants.

7.3 Specific end use(s):

See Section 1.

SECTION 8: Exposure controls/personal protection.

8.1 Control parameters:

Poland:

NDS: 10 mg/m³ (Inne nietrujące pyły przemysłowe - pył całkowity)

NDSCh: undetermined

Rozporządzenie Ministra Rodziny, Pracy i Polityki Społecznej z dnia 12 czerwca 2018 r. w sprawie najwyższych dopuszczalnych stężeń i natężeń czynników szkodliwych dla zdrowia w środowisku pracy.

EU:

Long-term Exposure Limit (LTEL) Values: undetermined

Short-term Exposure Limit (STEL) Values: undetermined

COMMISSION DIRECTIVE 2000/39/EC of 8 June 2000 establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

DNEL

No data available.

PNEC

No data available.

8.2 Exposure controls:

8.2.1 Appropriate engineering controls:

Provide general and local ventilation to ensure that the concentration of air contaminants below the allowable maximum limits. When substance concentration is known and stable, select PPE with consideration of the substance concentration at the workplace, exposure time and operations performed by the personnel. Where explosive or toxic concentrations of gas, dust and vapor may exist, apply water spraying.

8.2.2. Individual protection measures, such as personal protective equipment:

a) Eyes protection: Use hermetic safety goggles in the case of excessive dust concentration.

b) Hands and skin protection:

Hands protection: Wear appropriate rubber gloves.

Other: Wear appropriate protective (impervious) clothing. Leather work boots and/or leather products will dehydrate with resultant shrinkage and possible destruction.

c) Respiratory protection: Under normal conditions, with proper ventilation, special protection for respiratory tracts is not required.

In the case of excessive dust concentration, use filtering semi-masks.

When working in atmosphere combined with sulphur dusts and steams, emitted from burned sulphur, use masks with appropriate absorber.

When working in atmosphere with insufficient oxide content and in closed spaces with small cubic capacity, use protective equipment that isolates respiratory tracts.

d) Thermal hazards: No data available.

8.2.3. *Environmental exposure controls*: Avoid releasing the substance to soils, sewage drains and waters.

SECTION 9: Physical and chemical properties.

9.1 *Information on basic physical and chemical properties:*

- a) Physical state: Solid.
- b) Colour: Yellow.
- c) Odour: Characteristic.
- d) Melting point/freezing point: $>113 - <120^{\circ}\text{C}$ (101.3 kPa).
- e) Boiling point or initial boiling point and boiling range: 444.6°C (101.3 kPa).
- f) Flammability: Not applicable.
- g) Lower and upper explosion limit:
 - Upper: Do not apply to solids.
 - Lower: $20 \pm 1,2 \text{ g/m}^3$ (dust)
- h) Flash point: Do not apply to solids.
- i) Auto-ignition temperature: Only applies to gases and liquids.
- j) Decomposition temperature: No data available.
- k) pH: 6.5 (100g/l, 20°C).
- l) Kinematic viscosity: Only applies to liquids.
- m) Solubility: Water: 900 g/l (20°C)
- n) Partition coefficient n-octanol/water (log value): Not applicable (inorganic).
- o) Vapour pressure: 0.00014 Pa (20°C).
- p) Density and/or relative density: 2.07 g/cm^3 (20°C).
- q) Relative vapour density: Only applies to gases and liquids.
- r) Particle characteristics: No data available.

9.2 *Other information:*

9.2.1 *Information with regard to physical hazard classes:* -

9.2.2 *Other safety characteristics:* -

- a) Explosive properties: Not applicable.
- b) Oxidising properties: Not applicable.

SECTION 10: Stability and reactivity.

10.1 *Reactivity:* The product is reactive.

10.2 *Chemical stability:* The substance is stable during storage and handling under normal ambient conditions, nominal temperature and pressure.

10.3 *Possibility of hazardous reactions:* Avoid contact with pyrophoric iron, copper components, ammonia, nitric acid, metallic dust, chlorates, nitrates, perchlorates, permanganates, anhydrides.

10.4 *Conditions to avoid:* Avoid contact with naked flame and other strong heat sources.

10.5 Incompatible materials: Avoid contact with pyrophoric iron, copper components, ammonia, nitric acid, metallic dust, chlorates, nitrates, perchlorates, permanganates, anhydrides. Molten sulphur reacts with most oxidants.

10.6 Hazardous decomposition products: No hazardous decomposition products identified.
Combustion products released under fire conditions. See section 5 of this safety data sheet.

SECTION 11: Toxicological information.

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008:

a) Acute toxicity:

Oral: Based on available data, the classification criteria are not met.
LD50, rat: >2000 mg/kg body weight.

Inhalation: Based on available data, the classification criteria are not met.
LD50, rat: >5430 mg/m³/4 h.

Dermal: Based on available data, the classification criteria are not met.
LD50, rabbit: >2000 mg/kg body weight.

b) Skin corrosion/irritation: Skin corrosion/irritation, Hazard Category 2: H315: Causes skin irritation.

c) Serious eye damage/irritation: Based on available data, the classification criteria are not met.

d) Respiratory or skin sensitisation:

Respiratory sensitization: Based on available data, the classification criteria are not met.

Skin sensitization: Based on available data, the classification criteria are not met.

e) Germ cell mutagenicity: Based on available data, the classification criteria are not met.

f) Carcinogenicity: Based on available data, the classification criteria are not met.

g) Reproductive toxicity: Based on available data, the classification criteria are not met.

h) STOT-single exposure: Based on available data, the classification criteria are not met.

i) STOT-repeated exposure: Based on available data, the classification criteria are not met.

j) Aspiration hazard: Based on available data, the classification criteria are not met.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties: The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

11.2.2 Other information:

Most important symptoms and effects, both acute and delayed:

Not likely to occur.

SECTION 12: Ecological information.

12.1 Toxicity:

Hazardous to the aquatic environment (acute / short-term): Based on available data, the classification criteria are not met.

Hazardous to the aquatic environment (long-term): Based on available data, the classification criteria are not met.

Hazardous to the ozone layer: Based on available data, the classification criteria are not met.

Fish: No data available.

Aquatic invertebrates : No data available.

Algae/aquatic plants: No data available.

Microorganisms: No data available.

12.2 Persistence and degradability: Sulphur: as a result of microbiological decomposition in soil, unbound sulphur is oxidized to sulfate (aerobic conditions) or reduced to sulfide (anaerobic conditions).

12.3 Bioaccumulative potential: Low potential for bioaccumulation.

12.4 Mobility in soil: Since sulfur is an inorganic substance, it will not have a significant adsorption potential.

12.5 Results of PBT and vPvB assessment: Not applicable.

12.7 Endocrine disrupting properties: The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

12.8 Other adverse effects: No data available.

SECTION 13: Disposal considerations.

13.1 Waste treatment methods:

Wastes related to the use of sulphur may include: contaminated sulphur, used sulphur packaging. Such wastes should be adequately managed each time (recycling or disposal) in accordance with applicable national regulations on wastes (particularly hazardous wastes) and local agreements between the user of sulphur and administration (e.g. decisions by respective Province Governors). Waste codes: 060699 (wastes not otherwise specified).

There are no limitations for reusing contaminated sulphur, provided that the technology allows recovery.

Recovery or disposal of product wastes must adhere to applicable regulations.

Contaminated sulphur product packaging may be reused for the same purpose and becomes waste only when it is not reusable anymore (including damaged packaging). There are no specific recommendations for methods of disposal of used sulphur product packaging.

DIRECTIVE 2008/98/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 19 November 2008 on waste and repealing certain Directives.

SECTION 14: Transport information.

Granulated sulphur is not covered by ADR/RID/IMDG/ADN provisions based on the specific/special regulation No. 242.

14.1. UN number or ID number: 1350

14.2. UN proper shipping name: SULPHUR

14.3. Transport hazard class(es): 4.1

14.4. Packing group: III

14.5. Environmental hazards: NO

14.6. Special precautions for user:

Classification code: F3

Special provisions: 242

Limited quantities: 5 kg

Excepted quantities: E1

Packing instructions: P002, IBC08, LP02, R001

Special packing provisions: B3

Mixed packing provisions: MP11

Portable tank and bulk container instructions: T1, BK1, BK2, BK3

Portable tank and bulk container special provisions: TP33

Tank code: SGAV

Tank special provisions: -

Vehicle for tank carriage: AT

Transport category: 3 (E)

Special provisions for carriage - Packages: -

Special provisions for carriage – bulk: VC1, VC2

Special provisions for carriage - Loading, unloading and handling: -
Hazard identification number (Kemler No.) : 40
14.7. Maritime transport in bulk according to IMO instruments: -

SECTION 15: Regulatory information.

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

- a) *Annex XIV - List of substances subject to authorization*
Substances of very high concern: None of the components are in the list.
- b) *Annex XVII Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles:* **No. 75**

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

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

REGULATION (EC) No 767/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 July 2009 on the placing on the market and use of feed, amending European Parliament and Council Regulation (EC) No 1831/2003 and repealing Council Directive 79/373/EEC, Commission Directive 80/511/EEC, Council Directives 82/471/EEC, 83/228/EEC, 93/74/EEC, 93/113/EC and 96/25/EC and Commission Decision 2004/217/EC

Regulation (EC) No 2003/2003 of the European Parliament and of the Council of 13 October 2003 relating to fertilisers.

Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety.

15.2 Chemical safety assessment: Has been carried out.

16. Other information.

a) *Indication of changes:* Correction of classification.

b) *Key abbreviations and acronyms used in the safety data sheet:*

ACGIH: American Conference of Governmental Industrial Hygienist

ADN: Accord européen relative au transport international des marchandises Dangereuses par voies de Naviagation intérieures.

ADR: the european Agreement concerning the international carriage og Dangerous goods by Road.

B: Bioaccumulative

CSR: Chemical Safety Report

CSA: Chemical Safety Assessment

DNEL: Derived No Effect Level

IATA: International Air Transport Association

IBC: International Bulk Chemical code
ICAO: International Civil Aviation Organization
IMGD: International Maritime Dangerous Goods code
LC50: Lethal Concentration 50
LD50: Lethal Dose 50
LLNA: Local LymphNode Assay
MARPOL: international convention for the prevention of MArine POLLution
P: Persistent
PBT: Persistent, Bioaccumulative and Toxic
PNEC: Predicted No Effect Concentration
RID: Regulations concerning the International carriage of Dangerous goods by rail
SDS: Safety Data Sheet
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value
TWA: Time Weighted Average
vPvB: very Persistent very Bioaccumulative

c) Key literature references and sources for data:

Manufacturers safety data sheet.

<https://echa.europa.eu/pl/registration-dossier/-/registered-dossier/15564/1/1>

c) Indication of which of the methods of evaluating information referred to in Article 9 of Regulation (EC) No 1272/2008 was used for the purpose of mixture classification: Not applicable

d) List of relevant hazard statements and/or precautionary statements: Written out in full under Section 2 .

e) Advice on any training appropriate for workers to ensure protection of human health and the environment: It is recommended to train workers to ensure the protection of human health and the environment. It is necessary for the people working with the product to read and understand this SDS. We recommend storing the SDS in a place with easy access to it for everyone who works with the product, and (if needed) for emergency services.

Disclaimer: The information contained in the SDS is to describe the product only from the point of safety requirements. Users of the product are responsible for creating the conditions for the safe use of the product and take responsibility for consequences resulting from improper use of this product.

It is recommended to conduct training for health and safety, to ensure protection of human health and the environment.