



# Sulfur

## Safety Data Sheet

according to Regulation (EU) 2015/830

Date of issue: 12/7/1998

Revision date: 5/31/2017

Version: 3.0

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

#### 1.1. Product identifier

Chemical type : Substance  
Trade name : Sulfur  
EC Index-No. : 016-094-00-1  
EC-No. : 231-722-6  
CAS-No. : 7704-34-9  
REACH registration No : 01-2119487295-27  
Product code : MOL\_1111\_001\_MOL\_1112\_001\_MOL\_1112\_002

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

##### 1.2.1. Relevant identified uses

Main use category : Industrial use, Professional use  
Industrial/Professional use spec : Manufacture of substance  
Distribution of substance  
Use as an intermediate  
Formulation & (re)packing of substances and mixtures  
Use as a fuel

##### 1.2.2. Uses advised against

No additional information available

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

Manufacturer: MOL Hungarian Oil and Gas Public Limited Company, Refining

Address: 2443 Százhalombatta, POB. 1.

Telephone: +36-23-552-511,

Fax: +36-23-553-122

Distributor: MOL Hungarian Oil and Gas Public Limited Company

Address: 1117 Budapest, Október huszonharmadika utca 18.

Telephone, fax.: +36-1-209-0000

The competent person responsible for Safety Data Sheet: sds@mol.hu

#### 1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BA Belfast	0344 892 0111	
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH Birmingham	0344 892 0111	
United Kingdom	National Poisons Information Service (Cardiff Centre) Gwenwyn Ward, Llandough Hospital	Penarth CF64 2XX Cardiff	0344 892 0111	
United Kingdom	National Poisons Information Service Edinburgh Royal Infirmary of Edinburgh	Little France Crescent EH16 4SA Edinburgh	0344 892 0111	
United Kingdom	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER London	0870 243 2241	
United Kingdom	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit	Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle	0344 892 0111	

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin corrosion/irritation, Category 2 H315

Full text of hazard classes and H-statements : see section 16

# Sulfur

## Safety Data Sheet

according to Regulation (EU) 2015/830

### 2.2. Label elements

#### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS07

Signal word (CLP) : Warning  
Hazard statements (CLP) : H315 - Causes skin irritation  
Precautionary statements (CLP) : 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

Other hazards not contributing to the classification : Dust may form explosive mixture in air. Liquid sulphur may evolve sulphur dioxide (SO<sub>2</sub>) and toxic and flammable hydrogen sulphide (H<sub>2</sub>S).

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Substance type : Mono-constituent  
Name : Sulfur  
CAS-No. : 7704-34-9  
EC-No. : 231-722-6  
EC Index-No. : 016-094-00-1

Name	Product identifier	%
sulfur (Main constituent)	(CAS-No.) 7704-34-9 (EC-No.) 231-722-6 (EC Index-No.) 016-094-00-1 (REACH-no) 01-2119487295-27-0061	>= 99.9

Full text of H-statements: see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general : IF exposed or concerned: Get medical advice/attention. Do not give anything by mouth to an unconscious person. Liquid sulfur can cause thermal burns.

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice. If there is any suspicion of inhalation of H<sub>2</sub>S (hydrogen sulphide): Rescuers must wear breathing apparatus, belt and safety rope, and follow rescue procedures. Immediately begin artificial respiration if breathing has ceased.

First-aid measures after skin contact : Take off contaminated clothing. Wash affected area with soap and water. Seek medical attention if skin irritation, swelling or redness develops and persists. In the event of contact with molten product : Hold the burned area under cold running water for at least five minutes, or until the pain subsides. Body hypothermia must be avoided. Remove non-sticking garments carefully. DO NOT attempt to remove portions of clothing glued to burnt skin but cut round them. Seek medical attention in all cases of serious burns.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Consult an ophthalmologist if irritation persists. If hot product is splashed into the eye, it should be cooled down immediately to dissipate heat, under cold running water. Immediately obtain specialist medical assessment and treatment for the casualty.

First-aid measures after ingestion : Rinse mouth out with water. Make him/her drink plenty of water. Induce vomiting. Immediately call a POISON CENTER or doctor/physician.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation : irritation of the upper respiratory tract. Headache. Diarrhoea. Vomiting.  
Symptoms/effects after skin contact : Irritation may arise in case of repeated or prolonged exposure. May cause burn in case of contact with product at high temperature.  
Symptoms/effects after eye contact : mild eye irritation. May cause burn in case of contact with product at high temperature.

# Sulfur

## Safety Data Sheet

according to Regulation (EU) 2015/830

Symptoms/effects after ingestion : Headache. Diarrhoea. Vomiting. Gastrointestinal complaints.

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

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Foam (trained personnel only). Water fog (trained personnel only). Carbon dioxide. Other inert gases (subject to regulations). Sand or earth. Dry powder.

Unsuitable extinguishing media : Do not use direct water jets on the burning product. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : Combustible. The flames generated by the burning product are short, dark blue colored at night and invisible in the daylight, with the exception of the fume and the heat. The burning material acquires a dark red-black colour.

Explosion hazard : They may be ignited by heat, sparks, static electricity or flames. Dust could form explosive mixtures with air.

Hazardous decomposition products in case of fire : On combustion, forms: sulphur oxides. hydrogen sulphide.

Hungarian fire hazard

### 5.3. Advice for firefighters

Precautionary measures fire : Keep container closed when not in use. Eliminate all ignition sources if safe to do so. Fight fire remotely due to the risk of explosion.

Firefighting instructions : Evacuate area. Contain the extinguishing fluids by bunding.

Protection during firefighting : In case of a large fire or in confined or poorly ventilated spaces, wear full fire resistant protective clothing and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Other information : High temperature decomposition products are harmful by inhalation. Combustion products include sulphur oxides (SO<sub>2</sub> and SO<sub>3</sub>) and Hydrogen sulphide H<sub>2</sub>S.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate area. Avoid contact with skin and eyes.

#### 6.1.1. For non-emergency personnel

Protective equipment : gloves made of PVA are not water-resistant, and are not suitable for emergency use. Small spillages: normal antistatic working clothes are usually adequate. Large spillages: full body suit of chemically resistant and antistatic material. A half or full-face respirator with combined dust/organic vapour filter(s), or a Self-Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. Antistatic non-skid safety shoes or boots. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.

Emergency procedures : Keep upwind. Stop or contain leak at the source, if safe to do so. Avoid direct contact with released material. Do not breathe vapours. Keep non-involved personnel away from the area of spillage. Alert emergency personnel. If required, notify relevant authorities according to all applicable regulations. Eliminate all ignition sources if safe to do so (e.g. electricity, sparks, fires, flares. Large spillages may be cautiously covered with foam, if available, to limit vapour cloud formation. In case of large spillages, alert occupants in downwind areas. When inside buildings or confined spaces, ensure adequate ventilation. In those cases when the presence of dangerous amounts of SO<sub>2</sub> or H<sub>2</sub>S around the spilled product is suspected or proved. additional or special actions may be warranted including access restrictions, use of special protection equipment, procedures and personnel training.

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

prevent product from entering sewers, rivers or other bodies of water. In case of soil contamination, remove contaminated soil and treat in accordance with local regulations. Collect free product with suitable mechanical means. Transfer collected product and other contaminated materials to suitable containers for recovery or safe disposal.

### 6.3. Methods and material for containment and cleaning up

For containment : Stop leak without risks if possible. Consult an expert on waste disposal or treatment.

Methods for cleaning up : the product will cool down rapidly and become solid. Mechanically recover the product. Minimize generation of dust. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

# Sulfur

## Safety Data Sheet

according to Regulation (EU) 2015/830

### 6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure that all relevant regulations regarding handling and storage facilities of flammable products are followed. A specific assessment of inhalation risks from the presence of H<sub>2</sub>S in tank headspaces, confined spaces, product residue, tank waste and waste water, and unintentional releases must be made to help determine controls appropriate to local circumstances. Keep away from heat/sparks/open flames/hot surfaces. Transfer equipment must be designed in a manner that minimizes the airborne dust. Use only non-sparking tools. Contaminated materials should not be allowed to accumulate in the workplaces and should never be kept inside the pockets. Do not breathe dust. Avoid contact with skin, eyes and clothing. Do not ingest. Do not eat, drink or smoke when using this product. Keep away from food and beverages. Wash the hands thoroughly after handling.

Hygiene measures : Contaminated work clothing should not be allowed out of the workplace. Take off immediately all contaminated clothing and wash it before reuse.

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

Technical measures : Before entering storage tanks and commencing any operation in a confined area, check the atmosphere for oxygen content, hydrogen sulphide (H<sub>2</sub>S) and flammability. Empty containers may contain flammable product residues. Do not weld, solder, drill, cut or incinerate empty containers, unless they have been properly cleaned.

Storage conditions : Keep container tightly closed. Keep only in original container. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Incompatible products : Oxidizing agent. Nitrates.

Incompatible materials : Sources of ignition. Heat sources. Direct sunlight.

Storage area : Concentrations of SO<sub>2</sub> and/or H<sub>2</sub>S in silos, pits or tanks can reach hazardous values in case of prolonged storage, particularly where the sulphur is molten or recently solidified from the molten state.

Packaging materials : Liquid sulphur: carbon steel and concrete. Solid sulphur: carbon steel. Hulls of sea carriers for the transport of solid sulphur should be either coated or lime washed.

### 7.3. Specific end use(s)

Site documentation to support safe handling arrangements including the selection of engineering, administrative and personal protective equipment controls in accordance with risk-based management systems is available at each manufacturing site.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Additional information : There is no specified limit for the product (or for the ingredients) according to the 25/2000. (IX. 30.) EüM-SzCsM Hungarian regulation.

### 8.2. Exposure controls

Appropriate engineering controls : Where hot product is handled in confined spaces, effective local ventilation must be provided. Minimise exposure to fumes.

Personal protective equipment : Gloves. EN 374. EN 166. Full protective flameproof clothing. Face shield.

Hand protection : protective gloves. Hot/molten product Heat resistant gloves with long cuffs, or gauntlets. Gloves must be periodically inspected and changed in case of wear, perforations or contaminations.

Eye protection : Safety glasses. Hot/molten product. Face shield

Skin and body protection : Wear suitable coveralls to prevent exposure to the skin. Chemical resistant safety shoes. Wear protective clothing for operations with hot material: heat resistant coveralls (with trousers legs over boots and sleeves over cuffs of gloves), heat resistant heavy duty antiskid boots (e. g. leather).

Respiratory protection : Approved respiratory protection equipment shall be used when handling product in confined spaces: full-face mask with particulate filter(s) giving a sufficient protection factor for the dust level present. Change filter cartridge on respirator daily



# Sulfur

## Safety Data Sheet

according to Regulation (EU) 2015/830

Thermal hazard protection	: Material handled at elevated temperature may cause thermal burns by contact with molten product.
Environmental exposure controls	: Avoid release to the environment.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state (transport)	: Liquid
Colour	: Yellow.
Freezing point	: 113 - 120 °C
Flash point	: 168 - 207 °C
Density	: 1.8 - 2.06 g/cm <sup>3</sup>
Solubility in water	: < 0.005 mg/l 22°C

#### 9.2. Other information

No additional information available

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

This substance is stable under all ordinary circumstances at ambient temperatures, and if released into the environment.

#### 10.2. Chemical stability

Stable under normal conditions. It does not need the addition of specific stabilizers.

#### 10.3. Possibility of hazardous reactions

Contact with strong oxidizers (peroxides, chromates, etc.) may cause a fire hazard.

#### 10.4. Conditions to avoid

They may be ignited by heat, sparks, static electricity or flames.

#### 10.5. Incompatible materials

A mixture with nitrates or other strong oxidisers (e.g. chlorates, perchlorates, liquid oxygen) may create an explosive mass. Contact with strong oxidizers (peroxides, chromates, etc.) may cause a fire hazard.

#### 10.6. Hazardous decomposition products

No decomposition if stored normally.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity : Not classified

sulfur (7704-34-9)	
LD50 oral rat	> 2000 mg/kg bw/day literature data
LD50 dermal rabbit	> 2000 mg/kg bw/day literature data
LC50 inhalation rat (mg/l)	> 5430 mg/m <sup>3</sup> air, literature data

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Not classified

Respiratory or skin sensitisation: : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

### SECTION 12: Ecological information

#### 12.1. Toxicity

No additional information available

#### 12.2. Persistence and degradability

No additional information available

#### 12.3. Bioaccumulative potential

No additional information available

# Sulfur

## Safety Data Sheet

according to Regulation (EU) 2015/830

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

#### Sulfur (7704-34-9)

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

### 12.6. Other adverse effects

No additional information available



## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Regional legislation (waste)	: COMMISSION DECISION 2000/532/EC. DIRECTIVE 2008/98/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 19 November 2008 on waste and repealing certain Directives.
Waste treatment methods	: Contain and dispose of waste according to local regulations. External recovery and recycling of waste should comply with applicable local and/or national regulations. Where possible (e.g. in the absence of relevant contamination), recycling of used substance is feasible and recommended. If recycling is not possible, eliminate in accordance with local valid waste disposal regulations.
Sewage disposal recommendations	: Do not empty into drains. Dispose of at a licensed waste collection centre. Dispose of this material and its container in a safe way.
Waste disposal recommendations	: Clear up spills immediately and dispose of waste safely. Do not dispose of the packaging without first carrying out the necessary cleaning.
Additional information	: Dust may form flammable and explosive mixture with air.
Ecology - waste materials	: Hazardous waste. Avoid any discharge of the product into waste water. Recycle/reuse. Disposal in high-temperature incinerator (> 1200 °C).
EWC (EURAL) code	: 06 06 02* - wastes containing dangerous sulphides

## SECTION 14: Transport information

In accordance with ADN / ADR / IATA / IMDG / RID

ADR	RID	ADN	IMDG	IATA
<b>14.1. UN number</b>				
2448	2448	2448	2448	2448
<b>14.2. UN proper shipping name</b>				
SULPHUR, MOLTEN	SULPHUR, MOLTEN	SULPHUR, MOLTEN	SULPHUR, MOLTEN	Sulphur, molten
<b>14.3. Transport hazard class(es)</b>				
4.1 	4.1 	4.1	4.1	4.1 Not applicable
<b>14.4. Packing group</b>				
III	III	III	III	
<b>14.5. Environmental hazards</b>				
Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No
<b>14.6. Special precautions for user</b>				
44	44	--	EmS-No. (Fire) F-A EmS-No. (Spillage) S-H	
F3	F3	F3		
No supplementary information available				

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

# Sulfur

## Safety Data Sheet

according to Regulation (EU) 2015/830

### SECTION 15: Regulatory information

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

##### 15.1.1. EU-Regulations

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006. 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.

No REACH Annex XVII restrictions

Sulfur is not on the REACH Candidate List

Sulfur is not on the REACH Annex XIV List

##### 15.1.2. National regulations

#### 15.2. Chemical safety assessment

A chemical safety assessment has been carried out

### SECTION 16: Other information

Indication of changes:

1.-16.	All Sections	updated	All Sections have been updated
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Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect Level
DNEL	Derived-No Effect Level
EC50	Median effective concentration
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
TLM	Median Tolerance Limit
vPvB	Very Persistent and Very Bioaccumulative

Data sources : 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. <http://echa.europa.eu/>. CONCAWE registration dossier. Data arise from reference works and literature. Data relies on practical experience.

Training advice : Normal use of this product shall imply use in accordance with the instructions on the packaging.

#### Classification for mixtures and used evaluation method according to regulation (EC) 1272/2008 (CLP)

Skin corrosion/irritation, Category 2 H315

Full text of H- and EUH-statements:

Skin Irrit. 2	Skin corrosion/irritation, Category 2
H315	Causes skin irritation

# Sulfur

## Safety Data Sheet

according to Regulation (EU) 2015/830

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SDS EU (REACH Annex II) MOL

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*