

Product	SULPHUR (MOLTEN)	Date:	2023/12/19
		Edition:	6

## SECTION 1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### 1.1. Product identifier

- Trade name:	SULPHUR (MOLTEN)
- Chemical name:	Sulphur
- Index no.:	016-094-00-1
- EC no.:	231-722-6
- CAS no.:	7704-34-9
- Registration no.:	01-2119487295-27-0060
- UFI:	Not applicable.
- Form:	-
- Product code:	4000002

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

- Relevant identified uses:	<b>Industrial:</b> manufacture of substance, use as intermediate, rubber production and processing <b>Professional:</b> use in agrochemicals, use in fireworks <b>Consumer:</b> use in agrochemicals, use in matches, use in fireworks
- Uses advised against:	The uses that are in the list above are recommended. Other uses are not recommended unless an assessment that proves that the related risks are controlled has been conducted before starting that use.

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

- Manufacturer/supplier: INA-Industrija nafte, d.d.

Address: Av. V. Holjevca 10  
pp 555, 10002 Zagreb, HRVATSKA

Phone: 00-385-1-6450-842 / 00-385-1-6451-075 (24 h)

Fax: 00-385-1-6452-050

SD & HSE

Phone: 00-385-1-6450-803

- email address of a competent person responsible for the safety data sheet: [sds@ina.hr](mailto:sds@ina.hr)

### 1.4. Emergency Telephone Number

- Emergency Service Telephone Number: 112

Ministry of the Interior 00-385-1-6192-929

Directorate for civil protection 00-385-1-4551-792

Operative centre for civil protection 00-385-1-4814-911

e-mail: [occz@civilna-zastita.hr](mailto:occz@civilna-zastita.hr)

- Medical Information Telephone Number: 00-385-1-23-48-342

## SECTION 2. HAZARDS IDENTIFICATION

Product	SULPHUR (MOLTEN)	Date:	2023/12/19
		Edition:	6

## 2.1. Classification of the substance or mixture

### 2.1.1. Classification according to Regulation (EC) No 1272/2008 (CLP):

Skin Irrit. 2; H315

Full text of H-phrases: see section 16.

## 2.2. Label elements

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

Hazard pictograms:



**GHS07**

Signal word: **Warning**

Hazard statements (H):	H315	Causes skin irritation.
Precautionary statements (P):	P264	Wash hand and face thoroughly after handling.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
	P302+P352	IF ON SKIN: Wash with plenty of soap and water.
	P321	Specific treatment (see instructions for first aid measures on this label).
	P332+P313	If skin irritation occurs: Get medical advice/attention

## 2.3. Other hazards

Contact with substances at high temperatures may cause burns. Liquid sulphur can produce sulphur dioxide (SO<sub>2</sub>) and toxic and flammable hydrogen sulphide (H<sub>2</sub>S). The mixture of fine dust particles and air is explosive. When present, hydrogen sulphide can accumulate in tanks and confined spaces, which is dangerous for operators. In such cases, excessive exposure may cause respiratory irritation, dizziness, nausea, fainting and death.

The product does not meet the PBT and vPvB classification criteria prescribed in Annex XIII of the REACH Regulation.

## SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

-Substance:	X		Mixture:		
- Components contributing to product hazardousness:					
Substance name	Substance identification			[%]	Classification according to Regulation (EC) No 1272/2008 (CLP)
	CAS no.	EC no.	Registration no. (REACH)		
Sulphur	7704-34-9	231-722-6	01-2119487295-27-0060	99,5	Skin Irrit. 2, H315

---

Product	<b>SULPHUR (MOLTEN)</b>	Date:	2023/12/19
		Edition:	6

---

## SECTION 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

- general information: In case of accident or if you feel unwell, seek medical attention immediately (if possible, show instructions for use or safety data sheet).
- after inhalation: Remove the affected person to fresh air. If breathing has stopped, apply artificial respiration/cardiac massage, and seek medical attention immediately.
- after skin contact: Remove soaked clothes and shoes immediately. In case of contact with the powder, rinse the skin with soap and water for 15-20 minutes. If irritation persists, repeat rinsing procedure. In case of contact with liquid, rinse contact areas with cold running water. Do not tear sulphur residues off the skin! If irritation persists or in case of burns, seek medical attention.
- after eye contact: Remove eyelids with clean hands and rinse the eyes gently with running water for 15 to 20 minutes. If irritation persists, seek medical attention.
- after ingestion: If affected person is awake and does not have cramps, flush the mouth with plenty of water. If larger quantities are swallowed, seek medical assistance.
- personal protective equipment for first aid responder: No special recommendations.

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

- after inhalation: May cause: heavy breathing, coughing, wheezing.
- after skin contact: Skin irritation.
- after eye contact: May cause slight eye irritation.
- after ingestion: No data available.

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

Treat symptomatically. Only qualified medical personnel should administer oxygen.

## SECTION 5. FIREFIGHTING MEASURES

### 5.1 Extinguishing media

- SUITABLE: Sand, dry powder, foam, water mist/vapour, dispersed water.
- UNSUITABLE: Water jet, CO<sub>2</sub>.

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

- Hazardous combustion products: Combustion produces flammable and toxic gases (SO<sub>2</sub>). Hazardous concentrations of toxic hydrogen sulphide (H<sub>2</sub>S) may be created in confined space.  
Air, vapour, and dust mixture (in the area of explosiveness) is highly flammable and explosive!

### 5.3 Advice for firefighters

Product	<b>SULPHUR (MOLTEN)</b>	Date:	2023/12/19
		Edition:	6

- Firefighting measures for special hazards: Remove all ignition sources (friction, static electricity, heat, sparks, flames) and call emergency personnel. Immediately evacuate all persons except emergency personnel. Special care should be taken of the fact that there is a permanent danger of creation of explosive mixture with the air due to static electricity. Use water mist for cooling the sulphur tank (lower the temperature below approx. 150°C) to prevent the sulphur from ignition or re-ignition.
- Special firefighting methods: Use water mist and water spray for cooling the surfaces exposed to heat and for protection of persons. Only persons trained in fire protection should use water spray (dispersed water). Do not use water extinguishing agents directly on molten sulphur due to boiling water (above 100°C) and danger of overboiling.
- Special protective equipment for firefighters: Wear protective fire fighter clothing (intervention suit) in accordance with HRN EN 469 and a self-sustained open-circuit compressed-air breathing apparatus in accordance with HRN EN 137.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

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

#### 6.1.1. For non-emergency personnel

- Protective equipment: Use personal protective equipment listed in Section 8 and remove unprotected persons from the affected area immediately.
- Accident prevention procedures: Do not smoke. Remove all sources of ignition and sparking. Thoroughly ventilate affected areas. Monitor hydrogen sulphide fumes concentration in the air. Use of protective equipment listed in Section 8 is obligatory.
- Procedure in case of accident: Provide good ventilation of the area. If liquid sulphur is used, allow it to harden and cool. In case of major leaks, call 112.

#### 6.1.2. For emergency responders:

Insulate the discharge area. Use personal protective equipment listed in Section 8 and remove unprotected persons from the affected area immediately.

### 6.2 Environmental precautions:

Determine the risk area and prevent discharging and spilling into watercourses, canals, drainage systems and soil by digging out a protective ditch, fencing it with bags filled with dry sand, earth, or clay. Provide good ventilation of the area. In case of major leaks, call 112.

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

#### 6.3.1. For bunding, covering and capping:

Determine the risk area and prevent discharging and spilling into watercourses, canals, drainage systems and soil by digging out a protective ditch, fencing it with bags filled with dry sand, earth, or clay.

---

Product	<b>SULPHUR (MOLTEN)</b>	Date:	2023/12/19
		Edition:	6

---

- 6.3.2. For cleaning up: Thoroughly remove larger pieces of sulphur, moist them or cover with inert gas to prevent sulphur combustion. Remove soil residues with adsorbents (sawdust, sand, mineral adsorbents). Extract sulphur from watercourse bottom by suction or nets. Store the waste material that was removed in closed containers in well-ventilated premises. Hand over for disposal to legal entities for waste disposal, authorized by the ministry responsible for environmental protection.
- 6.3.3. Other information: Dust or vapours (H<sub>2</sub>S) form explosive mixture with air which generates toxic fumes. Eliminate all sources of ignition. Stand upwind of spillage. In case of traffic accident shut down the engine, ground the tank-truck properly, mark the accident site and call responsible person and service in charge of eliminating consequences of the accident.
- 6.4 Reference to other sections: See sections 8 and 13.

## SECTION 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

- 7.1.1 Safe handling advice: Keep away from the sources of heat. Immediately remove all sources of ignition. Use only properly functioning equipment and devices. Do not use sparking tools. Decant at designated areas with sufficient ventilation. Take precautionary measures against static electricity by earth bonding. Liquid sulphur may generate static electricity; forming of dust and air explosive mixture must be prevented.
- 7.1.2 Advice on general occupational hygiene: It is forbidden to smoke, eat, drink, and keep food in the room where this product is handled. Keep personal clothes separate from work clothes and workplace. Mandatory to wear prescribed work clothes, protective gloves, and goggles. Heavily soiled, soaked, or torn clothing must be changed immediately. Strictly avoid contact with skin and eyes. See sections 2 and 4.

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

- SUITABLE: Store in well-sealed concrete basins and tanks, properly built and equipped, at temperature between 135°C and 145°C. Take measures against electrostatic charge. Keep away from water, vapour, sources of ignition, oxidising materials, chemically active materials, aluminium, sodium, coal, phosphorus, metal nitrates, metal carbides, and metal halogens. Make sure that receiving tanks are below self-supporting tanks.
- TO BE AVOIDED: Avoid storing with other chemicals, especially flammable ones. Do not use sparking tools or devices in storage area.

### - Packaging materials

Product	<b>SULPHUR (MOLTEN)</b>	Date:	2023/12/19
		Edition:	6

- RECOMMENDED: Steel container or pressurised vessel, properly vented. Atmospheric pressure tanks must be properly vented in order to avoid fracture due to internal pressure change during filling/emptying.

- NOT SUITABLE: Any other.

7.3 Specific end use(s): No data available.

## SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1. Control parameters

Hazardous substance (CAS No.)	Occupational exposure limit values/short term values (OEL/STEL)		Biological limit values
	ppm	mg/m <sup>3</sup>	
Hydrogen sulphide (7783-06-4)	5/10	7/14	No data available.

- **Monitoring procedures:** Monitoring of hydrogen sulphide concentration, according to regulations.

### 8.2. Exposure controls

- **Summary of risk management measures:** No data available.

#### 8.2.1 Occupational exposure controls

- **Description of operating procedure and technological control:**

When handling hot substance in confined areas, ensure adequate ventilation. Before accessing the storage tanks and start any kind of activities (*with the meaning of work/maintenance...*) in a confined space, control the atmosphere and check the content of oxygen, the presence of hydrogen sulphide (H<sub>2</sub>S) and of the sulphur dioxide (SO<sub>2</sub>) and the degree of flammability.

#### 8.2.2 Personal protective equipment

- respiratory protection: Full-face mask (HRN EN 136) with A filter (HRN EN 14387). In case of fire, wear self-contained open circuit compressed air breathing apparatus (HRN EN 137).
- hand protection: Wear protective gloves made of stable and impervious material (neoprene, PVC), HRN EN 374-1:2003
- eye/face protection: Protective goggles with side shields or full-face protective mask (HRN EN 136/AC:2002).
- skin and body protection: Non-combustible protective clothing HRN EN 11612:2015 and protection against chemicals HRN EN 13034:2010. Safety footwear HRN EN 20345:2022.
- **Special hygienic and safety precautions:** Regularly maintain the prescribed hygiene for working with hazardous substances. Avoid inhalation of vapours! Remove contaminated clothing and shoes. Do not smoke, drink, or eat when handling this product. Always wash your hands after every interruption of work.

#### 8.2.3 Environmental exposure controls

Product	<b>SULPHUR (MOLTEN)</b>	Date:	2023/12/19
		Edition:	6

- Summary of risk management measures: No data available.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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

- physical state:	liquid	
- colour:	yellow	
- odour:	odourless	
- odour threshold:	No data available.	
- pH value (indicate conc. and temp.):		Not applicable.
- melting point/freezing point:	°C	114-119
- boiling point/boiling range:	°C	444,6
- flash point:	°C	168
- evaporation rate:		No data available.
- flammability (solid, gas):		Flammable at or above flash point.
- explosive limits:	vol. %	Not applicable.
- vapour pressure:	kPa	0,11 mmHg (14,665 Pa)
- vapour density at 15°C:	kg/m <sup>3</sup>	1,790
- relative density:		1,8
- density at 15°C:	kg/m <sup>3</sup>	No data available.
- solubility (indicate solvent):	g/L	No data available.
- solubility in water:	g/L	Insoluble.
- partition coefficient n-octanol / water	logPow	No data available.
- auto ignition temperature:	°C	190 – 220
- decomposition temperature:	°C	No data available.
- kinematic viscosity at 100 °C:	mm <sup>2</sup> /s	11 mPas
- oxidizing properties:		Not applicable.
- conductivity:	pS/m	No data available.

**9.2. Other information:** No data available.

## SECTION 10. STABILITY AND REACTIVITY

**10.1 Reactivity:** Liquid sulphur may degrade rubber and plastic.

**10.2 Chemical stability:** Stable at surroundings temperature.

Product	<b>SULPHUR (MOLTEN)</b>	Date:	2023/12/19
		Edition:	6

- 10.3 Possibility of hazardous reactions:** Avoid moisture. At higher temperatures, molten sulphur may react with hydrocarbons in the absence of air, whereby hydrogen sulphide (H<sub>2</sub>S) may be formed. H<sub>2</sub>S is a flammable gas and may pose a risk of indoor explosion. Under certain conditions, H<sub>2</sub>S can react to form of pyrophoric iron compounds in confined spaces such as sulphur pits. Dissolved sulphur forms sulphides with most metals including iron and strongly reacts with sodium and magnesium.
- 10.4 Conditions to avoid:** Conditions that lead to sulphur dust dispersion in air; flame and all other ignition sources.
- 10.5 Incompatible materials:** Oxidants (perchlorates, chlorates, nitrates, permanganates, peroxides, halogens, oxygen).
- 10.6 Hazardous decomposition products:** Sulphur dioxide and sulphur trioxide.

## SECTION 11. TOXICOLOGICAL INFORMATION

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

**- Acute toxicity**

- oral (LD<sub>50</sub>): > 2000 mg/kg body weight (rat)
- inhalation (LC<sub>50</sub>): > 5340 mg/m<sup>3</sup> air (4h, rat)
- dermal (LD<sub>50</sub>): > 2000 mg/kg body weight (rabbit)

**- Corrosion/Irritation**

- skin: Dust may cause irritation, redness and dermatitis, and liquid may cause burns.

**- Repeated dose toxicity**

No data available.

**- Serious damage/irritation**

- eyes: The effects of sulphur on the eyes were investigated in rabbits. None of the tested samples showed more than minimal effects, which are disappeared within 72 hours (Rallis, 2005a; TNO, 1994c).

**- Sensitisation**

- skin: Tests on guinea pigs showed no signs of skin sensitization.  
These results together with extensive human experience show that sulphur does not cause skin sensitization (Advinus, 2005a; RCC and BRL, 1994a,b; Rallis, 2005e).
- respiratory tract: There is no evidence to suggest that sulphur can cause respiratory tract sensitisation.

**- Germ cell mutagenicity:**

Not mutagenic.

**- Carcinogenicity:**

Not carcinogenic.



Product	<b>SULPHUR (MOLTEN)</b>	Date:	2023/12/19
		Edition:	6

- **Reproductive toxicity:** No data available.
  - **STOT (SE):** Acute exposure studies show no evidence of systemic toxicity (Sandoz 1994 a,b; TNO, 1994a).
  - **STOT (RE):** A repeated dose toxicity study of sulphur was studied in rats following dermal and oral exposure for a period between 28 days and 21 weeks. No systemic toxicity was observed; the only observed effect was local skin effects (Advinus, 2006; Rallis, 2005d; Rallis, 2006).
  - **Aspiration hazard:** Not relevant.
  - Information on likely routes of exposure: No data available.
  - Symptoms related to the physical, chemical and toxicological characteristics: No data available.
  - Delayed and immediate effects as well as chronic effects from short and long-term exposure: No data available.
- 11.2. Information on other hazards**
- Endocrine disrupting properties: No data available.
  - Other information: No data available.

## SECTION 12. ECOLOGICAL INFORMATION

### 12.1. Toxicity

- to aquatic organisms: No data available.
- to ground organisms: No data available.
- to plants and land animals: Sulphur excess from the environment, due to creation of H<sub>2</sub>S may poison the animals. The excess of certain sulphur compounds is toxic to plants.

### 12.2. Persistence and degradability

- biodegradation: Biodegradation and bioaccumulation tests are not applicable for sulphur because this substance is inorganic.
- other degradation processes: No data available.
- degradation in wastewater: No data available.

### 12.3. Bioaccumulative potential

- bio-concentration factor (BCF): No data available.

### 12.4. Mobility in soil

- Known or predicted distribution in environmental compartments: **Method:** No data available.
- surface tension: No data available.
- absorption/desorption: No data available.

Product	<b>SULPHUR (MOLTEN)</b>	Date:	2023/12/19
		Edition:	6

- other physical and chemical properties: See section 9.

#### 12.5. Results of PBT and vPvB assessment

- data from chemical safety report: Product does not meet PBT and vPvB criteria for classification defined by Annex XIII of REACH Regulation.

12.6. Endocrine disrupting properties: No data available.

12.7. Other adverse effects: Due to sudden cooling at ambient temperature and bottom sedimentation, it can have long-term harmful effect in water.

### SECTION 13. DISPOSAL CONSIDERATIONS

**13.1 Waste treatment methods:** Waste shall be handed over to the person authorised for waste collection, disposal, or recovery. If possible, the waste shall be recovered.

- **Waste codes:** 05 01 16

- **Waste from residues:** Hand over for disposal to legal entities for waste disposal, authorized by the ministry responsible for environmental protection.

- **Contaminated packaging:** Used packaging must be disposed of in suitable waste containers and disposed of in accordance with applicable legislation.

- **Relevant provisions:** Act on waste management, Ordinance on waste management.

### SECTION 14. TRANSPORT INFORMATION

**14.1 UN number or ID number:** 2448

**14.2 UN proper shipping name:** SULPHUR, MOLTEN

#### 14.3 Transport hazard class(es)

ADR/RID/ADN/ICAO/IATA: 4.1

IMDG: 4.1

#### 14.4 Packing group

ADR/RID/ADN/IMDG/ICAO/IATA: III

#### 14.5 Environmental hazards

ADR, RID, ADN, ICAO/IATA: No.

IMDG: No.

#### 14.6 Special precautions for user

##### ADR

Transport category: 3

Vehicle for tank carriage: AT

Tank code: LGBV(+)

##### RID

Transport category: 3

Tank code: LGBV(+)

Label: 4.1

Product	<b>SULPHUR (MOLTEN)</b>	Date:	2023/12/19
		Edition:	6

Tunnel restriction code: E

Classification code: F3

Label: 4.1

Hazard identification: 44

Classification code: F3

Special provisions: 538, TU27, TE4, TE6.

Hazard identification: 44

Special provisions: 538

#### ADN

#### IMDG

Label: 4.1

Subsidiary risk: Melting point: 119°C

Additional requirements/Remarks: \*Toxic-meter for H<sub>2</sub>S; 7;20: + 150°C; 28; 32.

Molten sulphur may contain hydrogen sulphide which is highly poisonous in low concentrations. In case of fire, a toxic, highly irritating suffocating gas is evolved. It creates explosive and extremely unstable mixtures containing oxidizing substances. It is transported melted above the melting point.

Dangers: 4.1+S

Equipment required: PP, EP, TOX\*, A.

Classification code: F3.

Carriage permitted: T

Type of tank vessel: N

Group of the cargo: Category C, separate from class 5.1

Anti-explosion protection required: no

Special provisions: TP3

Maximum degree of filling in %: 95

EmS: F-A, S-H

Segregation group: SG17

#### ICAO

Label: 4.1

Cargo IMP code: RFS

Passenger and cargo aircraft: forbidden/  
forbidden

Cargo aircraft only: forbidden

ERG code: 3L

#### 14.7 Maritime transport in bulk according to IMO instruments

Trade name:

Not applicable.

Pollution category (according to MARPOL, Annex II):

Not applicable.

Vessel type (according to IBC Code):

Not applicable.

Special and operative requirements (according to IBC Code):

Not applicable.

### 15. REGULATORY INFORMATION

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

##### - Applicable EU regulations:

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), Regulation (EC) No 1272/2008 European Parliament and of the Council of 16 December 2008 on

Product	<b>SULPHUR (MOLTEN)</b>	Date:	2023/12/19
		Edition:	6

classification, labelling and packaging of substances and mixtures (CLP), Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 (REACH)

- **Applicable national regulations:** Chemicals Act; Ordinance on workers protection to dangerous chemicals exposure during work, exposure limit values and biological limit values; Act on Waste Management, Ordinance on waste management.

- **Authorization information:** -

- **Restriction information:** -

### 15.2 Chemical Safety Assessment

- **Chemical Safety Assessment carried out (CSA):** YES    **X**    NO

## 16. OTHER INFORMATION

### Revision indicators

**Section:**                      **Subject of change:**  
Completely new edition.

### Full text of H- phrases

H315                      Causes skin irritation.

### 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
CAS number	Chemical Abstract Service number
CLP	Classification, Labelling and Packaging of substances and mixtures
CSA	Chemical Safety Assessment
CSR	Chemical Safety Report
EC number	European Community number for identification of chemical substances commercially available in the EU
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code transport
LC50	Lethal concentration for 50% of tested organisms
LD50	Lethal concentration for 50% of tested organisms (medium lethal concentration)
OIN	Oil industry notes

---

Product	SULPHUR (MOLTEN)	Date:	2023/12/19
		Edition:	6

---

PBT	Persistent, bioaccumulative and toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Regulations Concerning the International Transport of Dangerous Goods by Rail
STOT (SE)	Specific Target Organ Toxicity (Single Exposure)
STOT (RE)	Specific Target Organ Toxicity (Repeated Exposure)
UFI	Unique formula identifier (according to section 5. Part A of Annex VIII of Regulation (EU) no. 1272/2008)
UVCB	Chemical Substances of Unknown or Variable Composition, Complex Reaction Products and Biological Materials
vPvB	Very persistent and very bioaccumulative

**Statement:**

This SDS is in compliance with the EU Regulation No. 1907/2006 and No. 1272/2008 of the European Parliament and the Council. It contains important user health and safety and environmental protection information. The information provided herein is not a substitute for any specification of quality and should not be deemed as a guarantee of the adequacy and applicability of this product for any purpose whatsoever. All information provided herein is based on our current knowledge and compliant with applicable legal regulations. The user is responsible for adherence to relevant legal regulations.

**Data source:**

1. [www.hzt.hr](http://www.hzt.hr)
2. <http://echa.europa.eu/hr>
3. Handbook – Identified Uses of Petroleum Substances 2021 Dossier Update, Concawe, September 2021
4. Hazard Classification and Labelling of Petroleum Substances in the EEA - 2023, Concawe
5. First Aid Reference Guide – 2021 update

**APPENDIX: EXPOSURE SCENARIOS ACCORDING TO CHEMICAL SAFETY REPORT**

Product	<b>SULPHUR (MOLTEN)</b>	Date:	2023/12/19
		Edition:	6

## APPENDIX: Exposure Scenario

### Description of identified uses and Exposure Scenario number key

	Substance name	Identified use name	Technical function	SU	PC/AC	PROC	ERC
1	Sulphur	01 – Manufacture of substance (classified)				1, 2, 3, 4, 8a, 8b, 9, 15, 28	1
2	Sulphur	01b – Use as intermediate (classified)	intermediate (precursor)	8, 9		1, 2, 3, 4, 8a, 8b, 9, 15, 22, 23, 28	6a
3	Sulphur	11a – Use in Agrochemicals: Professional (classified)	fertilizers (soil supplements)			1, 2, 4, 8a, 8b, 11, 13, 28	8a, 8d
4	Sulphur	11b – Use in Agrochemicals: Consumer (classified)	fertilizers (soil supplements)		PC: 12, 27		8a, 8d
5	Sulphur	19 – Rubber production and processing: Industrial (classified)	other: vulcanizing agent			1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 13, 14, 15, 21, 28	4, 6d
6	Sulphur	A13SLc - Use in matches: lifetime Consumer (classified)	reducing agent		AC: 0 matches		10b, 11b
7	Sulphur	A14SLc – Use in fireworks: lifetime Professional (classified)	reducing agent			0: fireworks	10b
8	Sulphur	A14SLb - Use in fireworks: lifetime Consumer (classified)	reducing agent		AC 0: fireworks		10b

#### Abbreviations:

SU – Sector of Use

PC/AC – Product Category/ Article Category

PROC – Process Category

ERC – Environmental Release Category

Product	SULPHUR (MOLTEN)	Date:	2023/12/19
		Edition:	6

## 1. MANUFACTURE OF SULPHUR - INDUSTRIAL

Section 1 Exposure Scenario Title: Sulphur	
<b>Title</b>	
Manufacture of substances	
<b>Use Descriptor</b>	
Sector(s) of Use	3, 8, 9
Process Categories	1, 2, 3, 4, 8a, 8b, 9, 15, 28 Further information on the mapping and allocation of PROC codes is contained in Table 9.1
Environmental Release Categories	1
Specific Environmental Release Category	ESVOC SpERC 1.1.v1
<b>Processes, tasks, activities covered</b>	
Manufacture of the substance or use as a process chemical or extraction agent within closed or contained systems. Includes incidental exposures during recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance, and loading (including marine vessel/barge, road/rail car and bulk container).	
<b>Assessment Method</b>	
See Section 3.	
Section 2 Operational conditions and risk management measures	
<b>Section 2.1 Control of worker exposure</b>	
<b>Product characteristics</b>	
Physical form of product	Solid at STP, liquid at elevated operating temperature, vapour pressure <
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) G13
Amount used	Not applicable
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated differently) G2
Human factors not influenced by risk management	Not applicable
Other Operational Conditions affecting exposure	Operation is carried out at elevated temperature (> 20°C above ambient temperature). OC7. Assumes a good basic standard of occupational hygiene is implemented G1.
Contributing Scenarios	Specific Risk Management Measures and Operating Conditions
General Measures (skin irritants). G19.	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. E3
CS15 General exposures (closed systems)	No other specific measures identified. E120
CS15 General exposures (closed systems). + CS56 With sample collection.	No other specific measures identified. E120
CS15 General exposures (closed systems) CS55 Batch process CS56 With sample collection	No other specific measures identified. E120
CS2 Process sampling	No other specific measures identified. E120
CS16 General exposures (open systems)	No other specific measures identified. E120

Product	<b>SULPHUR (MOLTEN)</b>	Date:	2023/12/19
		Edition:	6

CS36 Laboratory activities	No other specific measures identified. E120
CS14 Bulk transfers CS81 Dedicated facility	No other specific measures identified. E120
CS39 Equipment Cleaning and	No other specific measures identified. E120
CS85 Bulk product storage	No other specific measures identified. E120
<b>Additional information on the basis for the allocation of the identified OCs and RMMs is contained in Appendices 1 to 2</b>	
<b>Section 2.2 Control of environmental exposure</b>	
Not applicable	
<b>Section 3 Exposure Estimation</b>	
<b>3.1. Health</b>	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. G21.	
<b>3.2. Environment</b>	
Not applicable.	
<b>Section 4 Guidance to check compliance with the Exposure Scenario</b>	
<b>4.1. Health</b>	
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. G32. Risk Management Measures are based on qualitative risk characterisation. G37.	
Available hazard data do not support the need for a DNEL to be established for other health effects. G36. Users are advised to consider national Occupational Exposure Limits or other equivalent values. G38.	
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23.	
<b>4.2. Environment</b>	
Not applicable.	



Product	<b>SULPHUR (MOLTEN)</b>	Date:	2023/12/19
		Edition:	6

**2. USE OF SULPHUR AS INTERMEDIATE – INDUSTRIAL**

<b>Section 1 Exposure Scenario Title: Sulphur</b>	
<b>Title</b>	
Use of Substance as Intermediate	
<b>Use Descriptor</b>	
Sector(s) of Use	3, 8, 9
Process Categories	1, 2, 3, 8a, 8b, 15, 22, 23 Further information on the mapping and allocation of PROC codes is contained in Table 9.1
Environmental Release Categories	6A
Specific Environmental Release Category	ESVOC SpERC 6.1a.v1
<b>Processes, tasks, activities covered</b>	
Use of substance as an intermediate. Includes recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).	
<b>Assessment Method</b>	
See Section 3.	
<b>Section 2 Operational conditions and risk management measures</b>	
<b>Section 2.1 Control of worker exposure</b>	
<b>Product characteristics</b>	
Physical form of product	Solid at STP, liquid at elevated operating temperature, vapour pressure <
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) G13
Amounts used	Not applicable
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated differently) G2
Human factors not influenced by risk management	Not applicable
Other Operational Conditions affecting exposure	Operation is carried out at elevated temperature (> 20°C above ambient temperature). OC7. Assumes a good basic standard of occupational hygiene is implemented G1.
<b>Contributing Scenarios</b>	<b>Specific Risk Management Measures and Operating Conditions</b>
General Measures (skin irritants). G19.	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. E3
CS15 General exposures (closed systems)	No other specific measures identified. EI20
CS15 General exposures (closed systems) CS56 With sample collection	No other specific measures identified. EI20
CS15 General exposures (closed systems) CS55 Batch process CS56 With sample collection	No other specific measures identified. EI20
CS2 Process sampling	No other specific measures identified. EI20
CS16 General exposures (open systems)	No other specific measures identified. EI20

Product	<b>SULPHUR (MOLTEN)</b>	Date:	2023/12/19
		Edition:	6

CS36 Laboratory activities	No other specific measures identified. EI20
CS14 Bulk transfers CS81 Dedicated facility	No other specific measures identified. EI20
CS39 Equipment Cleaning and Maintenance	No other specific measures identified. EI20
CS85 Bulk product storage	No other specific measures identified. EI20
<b>Additional information on the basis for the allocation of the identified OCs and RMMs is contained in Appendices 1 to 3</b>	
<b>Section 2.2 Control of environmental exposure</b>	
Not applicable.	
<b>Conditions and measures related to external recovery of waste</b>	
This substance is consumed during use and no waste of the substance is generated [ERW3].	
<b>Additional information on the basis for the allocation of the indentified OCs and RMMs is contained in Petrorisk file</b>	
<b>Section 3 Exposure Estimation</b>	
<b>3.1. Health</b>	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. G21.	
<b>3.2. Environment</b>	
Not applicable.	
<b>Section 4 Guidance to check compliance with the Exposure Scenario</b>	
<b>4.1. Health</b>	
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. G32. Risk Management Measures are based on qualitative risk characterisation. G37.	
Available hazard data do not support the need for a DNEL to be established for other health effects. G36. Users are advised to consider national Occupational Exposure Limits or other equivalent values. G38.	
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23.	
<b>4.2. Environment</b>	
Not applicable.	

Product	SULPHUR (MOLTEN)	Date:	2023/12/19
		Edition:	6

### 3. USE OF SULPHUR IN AGROCHEMICALS – PROFESSIONAL

<b>Section 1 Exposure Scenario Title: Sulphur</b>	
<b>Title</b>	
Use in Agrochemicals	
<b>Use Descriptor</b>	
Sector(s) of Use	22
Process Categories	1, 4, 8a, 8b, 11, 13 Further information on the mapping and allocation of PROC codes is contained in Table 9.1
Environmental Release Categories	8a, 8d
Specific Environmental Release Category	ESVOC SpERC 8.11a.v1
<b>Processes, tasks, activities covered</b>	
Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal.	
<b>Assessment Method</b>	
See Section 3.	
<b>Section 2 Operational conditions and risk management measures</b>	
<b>Section 2.1 Control of worker exposure</b>	
<b>Product characteristics</b>	
Physical form of product	Solid at STP, liquid at elevated operating temperature, vapour pressure <
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) G13
Amounts used	Not applicable
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated differently) G2
Human factors not influenced by risk management	Not applicable
Other Operational Conditions affecting exposure	Operation is carried out at elevated temperature (> 20°C above ambient temperature). OC7. Assumes a good basic standard of occupational hygiene is implemented G1.
<b>Contributing Scenarios</b>	<b>Specific Risk Management Measures and Operating Conditions</b>
General Measures (skin irritants). G19.	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. E3. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g., spraying E4
CS15 General exposures (closed systems)	No other specific measures identified. EI20
CS16 General exposures (open systems)	No other specific measures identified. EI20
CS14 Bulk transfers CS81 Dedicated facility	No other specific measures identified. EI20
CS10 Spraying	No other specific measures identified. EI20
CS4 Dipping, immersion and pouring	No other specific measures identified. EI20
CS39 Equipment Cleaning and Maintenance	No other specific measures identified. EI20

Product	<b>SULPHUR (MOLTEN)</b>	Date:	2023/12/19
		Edition:	6

<p><b>Additional information on the basis for the allocation of the identified OCs and RMMs is contained in Appendices 1 to 2</b></p>
<p><b>Section 2.2 Control of environmental exposure</b></p>
<p>Not applicable</p>
<p><b>Section 3 Exposure Estimation</b></p>
<p><b>3.1. Health</b></p>
<p>The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. <b>G21.</b></p>
<p><b>3.2. Environment</b></p>
<p>Not applicable</p>
<p><b>Section 4 Guidance to check compliance with the Exposure Scenario</b></p>
<p><b>4.1. Health</b></p>
<p>Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. G32. Risk Management Measures are based on qualitative risk characterisation. G37.</p> <p>Available hazard data do not support the need for a DNEL to be established for other health effects. G36. Users are advised to consider national Occupational Exposure Limits or other equivalent values. G38.</p> <p>Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23.</p>
<p><b>4.2. Environment</b></p>
<p>Not applicable.</p>

Product	<b>SULPHUR (MOLTEN)</b>	Date:	2023/12/19
		Edition:	6

#### 4. USE OF SULPHUR IN AGROCHEMICALS – CONSUMER

<b>Section 1 Exposure Scenario Title: Sulphur</b>		
<b>Title</b>		
Use in Agrochemicals		
<b>Use Descriptor</b>		
Sector(s) of Use	21	
Product Categories	12, 22, 27 Further information on the mapping and allocation of PC codes is contained in Table 9.1	
Environmental Release Categories	8a, 8d	
Specific Environmental Release Category	ESVOC SpERC 8.11b.v1	
<b>Processes, tasks, activities covered</b>		
Covers the consumer use in agrochemicals in liquid and solid forms.		
<b>Assessment Method</b>		
See Section 3.		
<b>Section 2 Operational conditions and risk management measures</b>		
<b>Section 2.1 Control of consumer exposure</b>		
<b>Product characteristics</b>		
Physical form of product	Solid at STP, liquid at elevated operating temperature, vapour pressure < 0.5 kPa OC29	
Concentration of substance in	Unless otherwise stated, cover concentrations up to 100% [ConsOC1]	
Amounts used	Unless otherwise stated, covers use amounts up to 37500g [ConsOC2]; covers skin contact area up to 6600cm <sup>2</sup> [ConsOC5]	
Frequency and duration of use/exposure	Unless otherwise stated, covers use frequency up to 4 times per day [ConsOC4]; covers exposure up to 8 hours per event [ConsOC14]	
Other Operational Conditions affecting exposure	Unless otherwise stated assumes use at ambient temperatures [ConsOC15]; assumes use in a 20 m <sup>3</sup> room [ConsOC11]; assumes use with typical ventilation [ConsOC8].	
<b>Product Category</b>	<b>Specific Risk Management Measures and Operating Conditions</b>	
PC12: Fertilizers	OC	Unless otherwise stated, covers concentrations up to 90% [ConsOC1]; covers use up to 1 days/year [ConsOC3]; covers use up to 1 time/day of use [ConsOC4]; covers skin contact area up to 857.50 cm <sup>2</sup> [ConsOC5]; for each use event, assumes swallowed amount of 0.3g [ConsOC13]; for each use event, covers use amounts up to 2500g [ConsOC2]; covers outdoor use [ConsOC12];
	RMM	No specific RMMs identified beyond those OCs stated
PC22: Lawn and garden preparations, including fertilizers	OC	Products containing Sulphur in high percentages (assume 90%) are sold for acidification of soil, to treat certain plant diseases (e.g., scab on potatoes) and as worm-deterrent ( <a href="http://www.progreen.co.uk/index.php?c=61&amp;p=132">http://www.progreen.co.uk/index.php?c=61&amp;p=132</a> ). The products are provided as pill (pellets) in bags of 1 kg. Recommended application frequency is of the order of once per year. The exposure assessment is conducted using the <0.1 Pa band values of the ESIG consumer assessment tool (Appendix 1.c).
	RMM	No specific RMMs identified beyond those OCs stated
PC27_n: Plant protection products--	OC	Unless otherwise stated, covers concentrations up to 90% [ConsOC1]; covers use up to 1 days/year [ConsOC3];

Product	<b>SULPHUR (MOLTEN)</b>	Date:	2023/12/19
		Edition:	6

		covers use up to 1 time/on day of use [ConsOC4]; covers skin contact area up to 857.50 cm <sup>2</sup> [ConsOC5]; for each use event, assumes swallowed amount of 0.3g [ConsOC13]; for each use event, covers use amounts up to 2500g [ConsOC2]; covers outdoor use [ConsOC12];
	RMM	No specific RMMs developed beyond those OCs stated
<b>Additional information on the basis for the allocation of the identified OCs and RMMs is contained in Appendices 1 to 2</b>		
<b>Section 2.2 Control of environmental exposure</b>		
Not applicable		
<b>Section 3 Exposure Estimation</b>		
<b>3.1. Health</b>		
The ECETOC TRA tool has been used to estimate consumer exposures, consistent with the content of ECETOC Report #107 and the Chapter R15 of the IR&CSA TGD. Where exposure determinants differ to these sources, then they are indicated. G42		
<b>3.2. Environment</b>		
Not applicable.		
<b>Section 4 Guidance to check compliance with the Exposure Scenario</b>		
<b>4.1. Health</b>		
Predicted exposures are not expected to exceed the applicable consumer reference values when the operational conditions/risk management measures given in section 2 are implemented. G39.		
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. G23.		
<b>4.2. Environment</b>		
Not applicable		

Product	SULPHUR (MOLTEN)	Date:	2023/12/19
		Edition:	6

## 5. Use of Sulphur in Rubber Production and Processing – Industrial

Section 1 Exposure Scenario Title: Sulphur	
<b>Title</b>	
Rubber Production and Processing	
<b>Use Descriptor</b>	
Sector(s) of Use	3, 10, 11
Process Categories	1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 13, 14, 15, 21 <i>Further information on the mapping and allocation of PROC codes is contained in Table 9.1</i>
Environmental Release Categories	4, 6d
Specific Environmental Release Category	ESVOC SpERC 4.19.v1
<b>Processes, tasks, activities covered</b>	
Manufacture of tyres and general rubber articles, including processing of raw (uncured) rubber, handling and mixing of rubber additives, calendaring, vulcanising, cooling and finishing as well as maintenance.	
<b>Assessment Method</b>	
See Section 3.	
Section 2 Operational conditions and risk management measures	
Section 2.1 Control of worker exposure	
<b>Product characteristics</b>	
Physical form of product	Solid at STP, liquid at elevated operating temperature, vapour pressure < 0.5 kPa <b>OC29</b>
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) <b>G13</b>
Amount used	Not applicable
Frequency and duration of use/exposure	Covers daily exposures up to 8 hours (unless stated differently) <b>G2</b>
Human factors not influenced by risk management	Not applicable
Other Operational Conditions affecting exposure	Operation is carried out at elevated temperature (> 20°C above ambient temperature). <b>OC7</b> . Assumes a good basic standard of occupational hygiene is implemented <b>G1</b> .
<b>Contributing Scenarios</b>	<b>Specific Risk Management Measures and Operating Conditions</b>
General measures (skin irritants) <b>G19</b>	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin effects that may develop. <b>E3</b> Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g., spraying <b>E4</b>
CS15 General exposures (closed systems)	No other specific measures identified. <b>EI20</b>
CS15 General exposures (closed systems) CS56 With sample collection	No other specific measures identified. <b>EI20</b>
CS15 General exposures (closed systems)	No other specific measures identified. <b>EI20</b>

Product	<b>SULPHUR (MOLTEN)</b>	Date:	2023/12/19
		Edition:	6

CS55 Batch process CS56 With sample collection	
CS16 General exposures (open systems)	No other specific measures identified. <b>EI20</b>
CS30 Mixing operations (open systems)	No other specific measures identified. <b>EI20</b>
CS64 Calendaring (including Banbury) CS70 Vulcanisation CS71 Cooling cured articles	No other specific measures identified. <b>EI20</b>
CS10 Spraying	No other specific measures identified. <b>EI20</b>
CS90 Small scale weighing	No other specific measures identified. <b>EI20</b>
CS4 Dipping, immersion and pouring	No other specific measures identified. <b>EI20</b>
CS73 Pressing uncured rubber blanks	No other specific measures identified. <b>EI20</b>
CS102 Finishing operations	No other specific measures identified. <b>EI20</b>
CS36 Laboratory activities	No other specific measures identified. <b>EI20</b>
CS14 Bulk transfers CS81 Dedicated facility	No other specific measures identified. <b>EI20</b>
CS39 Equipment Cleaning and Maintenance	No other specific measures identified. <b>EI20</b>
<b>Additional information on the basis for the allocation of the identified OCs and RMMs is contained in Appendices 1 to 2</b>	
<b>Section 2.2 Control of environmental exposure</b>	
Not applicable	
<b>Section 3 Exposure Estimation</b>	
<b>3.1. Health</b>	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated. <b>G21.</b>	
<b>3.2. Environment</b>	
Not applicable	
<b>Section 4 Guidance to check compliance with the Exposure Scenario</b>	
<b>4.1. Health</b>	
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects. <b>G32.</b> Risk Management Measures are based on qualitative risk characterisation. <b>G37.</b>	
Available hazard data do not support the need for a DNEL to be established for other health effects. <b>G36.</b> Users are advised to consider national Occupational Exposure Limits or other equivalent values. <b>G38.</b>	
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. <b>G23.</b>	
<b>4.2. Environment</b>	
Not applicable	



---

Product	SULPHUR (MOLTEN)	Date:	2023/12/19
		Edition:	6

---

## 6. Use of sulphur in Matches – Consumer

### Basic data for the assessments:

Sulphur is classified for skin irritation effects (H315). There are no DNELs set for inhalation, dermal or oral route. A reference value of >5000 mg/kg, representing a “guide LD50” was used in modelling. Specific gravity of Sulphur considered for this assessment is 2,07 g/cm<sup>3</sup>. The Vapour Pressure considered for this assessment was 2.65E-20Pa@115.36°C (<http://environmentalchemistry.com/yogi/periodic/S.html>).

### ***Human Health Exposure Scenario / Estimation for Use of Sulphur in Matches (PC 11; ERC 8e; ERC Defined release fractions):***

Matches contain approximately 4% S

([http://nopr.niscair.res.in/bitstream/123456789/8636/1/IJCT%2012\(3\)%20369-380.pdf](http://nopr.niscair.res.in/bitstream/123456789/8636/1/IJCT%2012(3)%20369-380.pdf)).

During intended use (lighting of a match) the S burns instantly and there is no exposure to Sulphur. Matches are considered a common household good. In line with REACH guidance (Chapter R.15) the only scenario requiring further analysis is an infant mouthing (not swallowing) a match. The calculation assumes a match head with radius of 3 mm, a layer of 0,01 cm removed by mouthing and a Sulphur content of 4%. Infant body weight is 7.62 kg (RIVM 320104002). The resulting dose is 0.12 mg/kg.

### ***Environment Exposure Scenario / Estimation for Use of Sulphur in Matches (PC 11; ERC 8e; ERC Defined release fractions):***

Not applicable

## 7. Use of sulphur in Fireworks – Consumer

### ***Human Health Exposure Scenario / Estimation for Use of Sulphur in Fireworks (PC 11; ERC 8e; ERC Defined release fractions):***

During intended use (explosion of fireworks) the Sulphur burns instantly and there is no exposure to Sulphur. Fireworks are not considered a common household good, hence infants are not expected to encounter mouthing opportunities. No exposure calculation is performed.

### ***Environment Exposure Scenario / Estimation for Use of Sulphur in Fireworks (PC 11; ERC 8e; ERC Defined release fractions):***

Not applicable