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

1.1. Product identifier

Product form : Substance
 Trade name : Granular Sulphur
 Chemical name : sulfur
 EC Index : 016-094-00-1
 EC-No. : 231-722-6
 CAS-No. : 7704-34-9
 REACH registration No : 01-2119487295-27-0120
 Product group : Trade product

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

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier

NIS a.d. Novi Sad
 Narodnog Fronta 12
 21000 Novi Sad - Serbia
 T + 381 (0) 21 481 1111
Dragana.Cvetkov@nis.eu (REACH)

Only Representative

BENS Consulting d.o.o.
 Špruha 19
 1236 Trzin - Slovenija
 T +386 41 979 800
info@bens-consulting.eu

1.4. Emergency telephone number

Emergency number : + 381 (0) 21 481 1111
 Only available during office hours.

Country	Official advisory body	Address	Emergency number
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals- 24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)


SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Skin Irrit. 2 H315

Full text of H- and EUH-statements: see section 16

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2.2. Label elements

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

Hazard pictograms (CLP)



Signal word

: Warning

Hazard statements (CLP)

: H315 - Causes skin irritation.

Precautionary statements (CLP)

: P264 - Wash hands thoroughly after handling.

P280 - Wear protective gloves, protective clothing, eye protection, face protection.

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

Listed in Annex VI

: EC Index-No.: 016-094-00-1

2.3. Other hazards

Other hazards

: Results of PBT and vPvB assessment : This substance does not meet the PBT/vPvB criteria of REACH, annex XIII. Product may release Hydrogen Sulphide: A specific assessment of inhalation risks from the presence of hydrogen sulphide in tank headspaces, confined spaces, product residue, tank waste and waste water, and unintentional releases should be made to help determine controls appropriate to local circumstances.

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 name : Granular Sulphur

CAS-No. : 7704-34-9

EC-No. : 231-722-6


EC Index : 016-094-00-1

Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
sulfur	(CAS-No.) 7704-34-9 (EC-No.) 231-722-6;231-984-1 (EC Index) 016-094-00-1 (REACH-no) 01-2119485395-27-0120	≥ 99,2	Skin Irrit. 2, H315
Hydrogen sulphide (H2S)	(CAS-No.) 7783-06-4 (EC-No.) 231-977-3 (EC Index) 016-001-00-4	< 0,001	Flam. Gas 1A, H220 Press. Gas (Comp.), H280 Acute Tox. 2 (Inhalation), H330 Aquatic Acute 1, H400

Full text of H- and EUH-statements: see section 16

3.2. Mixtures

Not applicable

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SECTION 4: First aid measures

4.1. Description of first aid measures

Additional advice	: First aider: Pay attention to self-protection!. Concerning personal protective equipment to use, see section 8. Never give anything by mouth to an unconscious person. In case of doubt or persistent symptoms, consult always a physician. Show this safety data sheet to the doctor in attendance.
Inhalation	: Remove casualty to fresh air and keep warm and at rest. Give oxygen or artificial respiration if necessary. In case of doubt or persistent symptoms, consult always a physician.
Skin contact	: Remove contaminated clothing and shoes. Gently wash with plenty of soap and water. Wash contaminated clothing before reuse. In case of doubt or persistent symptoms, consult always a physician.
Eyes contact	: Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. In case of doubt or persistent symptoms, consult always a physician.
Ingestion	: Do NOT induce vomiting. Rinse mouth thoroughly with water. Get medical advice/attention.

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

Inhalation	: May cause respiratory irritation. The following symptoms may occur: Shortness of breath. Coughing, sneezes.
Skin contact	: Causes skin irritation. Hot product (liquid) can cause thermal burns. The following symptoms may occur: Redness, pain.
Eyes contact	: May cause eye irritation. Hot product (liquid) can cause thermal burns. The following symptoms may occur: Redness, pain.
Ingestion	: May cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

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	: carbon dioxide (CO2), powder, alcohol-resistant foam, water spray.
Unsuitable extinguishing media	: Strong water jet.

5.2. Special hazards arising from the substance or mixture

Specific hazards	: Not flammable. Product may release Hydrogen Sulphide: A specific assessment of inhalation risks from the presence of hydrogen sulphide in tank headspaces, confined spaces, product residue, tank waste and waste water, and unintentional releases should be made to help determine controls appropriate to local circumstances.
Explosion hazard	: Vapours may form explosive mixture with air. May form explosive dust-air mixture.
Hazardous decomposition products in case of fire	: Hydrogen sulfide. Sulphur oxides. Nitrogen oxides. Carbon oxides (CO, CO2).

5.3. Advice for firefighters

Firefighting instructions	: Evacuate area. Use water spray or fog for cooling exposed containers. Contain the extinguishing fluids by bunding. Prevent fire fighting water from entering the environment.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus.
Other information	: Do not allow run-off from fire-fighting to enter drains or water courses. Dispose of waste in accordance with environmental legislation.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

For non-emergency personnel : Evacuate unnecessary personnel. Keep upwind. Provide adequate ventilation. Do not breathe dust. Avoid contact with skin, eyes and clothing. Wear recommended personal protective equipment. Concerning personal protective equipment to use, see section 8. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ensure equipment is adequately earthed. Product may release Hydrogen Sulphide: A specific assessment of inhalation risks from the presence of hydrogen sulphide in tank headspaces, confined spaces, product residue, tank waste and waste water, and unintentional releases should be made to help determine controls appropriate to local circumstances.

6.1.2. For emergency responders

For emergency responders : Ensure procedures and training for emergency decontamination and disposal are in place. Concerning personal protective equipment to use, see section 8 .

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Stop leak if safe to do so. Dam up the solid spill. Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal. Large spills: scoop solid spill into closing containers. This material and its container must be disposed of in a safe way, and as per local legislation.

6.4. Reference to other sections

Concerning personal protective equipment to use, see section 8 . Concerning disposal elimination after cleaning, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Provide adequate ventilation. Do not breathe dust. Avoid contact with skin, eyes and clothing. Use personal protective equipment as required. Concerning personal protective equipment to use, see section 8. Take any precaution to avoid mixing with Incompatible materials, Refer to Section 10 on Incompatible Materials. Ensure proper process control to avoid excess waste discharge (temperature, concentration, pH, time). Avoid release to the environment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground and bond container and receiving equipment. Product may release Hydrogen Sulphide: A specific assessment of inhalation risks from the presence of hydrogen sulphide in tank headspaces, confined spaces, product residue, tank waste and waste water, and unintentional releases should be made to help determine controls appropriate to local circumstances.


Hygiene measures : Keep good industrial hygiene. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product. Keep away from food, drink and animal feedingstuffs. Remove contaminated clothes. Separate working clothes from town clothes. Launder separately. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a dry, cool and well-ventilated place. Do not store near or with any of the incompatible materials listed in section 10.

Heat and ignition sources : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Protect from sunlight.

Information on mixed storage : oxidizing agents. (strong) acids.

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Special rules on packaging : Containers which are opened should be properly resealed and kept upright to prevent leakage. Keep container tight closed.

Packaging materials : Keep only in the original container. Recommended packaging materials : Carbon steel .


7.3. Specific end use(s)

For further information see section 1.


SECTION 8: Exposure controls/personal protection

8.1. Control parameters


sulfur (7704-34-9)		
Latvia	OEL TWA	6 mg/m ³
Lithuania	IPRV (OEL TWA)	6 mg/m ³
Romania	OEL STEL	15 mg/m ³ (dust)
Hydrogen sulphide (H2S) (7783-06-4)		
EU	IOEL TWA	7 mg/m ³
EU	IOEL TWA [ppm]	5 ppm
EU	IOEL STEL	14 mg/m ³
EU	IOEL STEL [ppm]	10 ppm
Austria	MAK (OEL TWA)	7 mg/m ³
Austria	MAK (OEL TWA) [ppm]	5 ppm
Austria	MAK (OEL STEL)	7 mg/m ³
Austria	MAK (OEL STEL) [ppm]	5 ppm
Austria	OEL C	7 mg/m ³
Austria	OEL C [ppm]	5 ppm
Belgium	OEL TWA	7 mg/m ³
Belgium	OEL TWA [ppm]	5 ppm
Belgium	OEL STEL	14 mg/m ³
Belgium	OEL STEL [ppm]	10 ppm
Bulgaria	OEL TWA	7 mg/m ³
Bulgaria	OEL TWA [ppm]	5 ppm
Bulgaria	OEL STEL	14 mg/m ³
Bulgaria	OEL STEL [ppm]	10 ppm
Croatia	GVI (OEL TWA) [1]	7 mg/m ³
Croatia	GVI (OEL TWA) [2]	5 ppm
Croatia	KGVI (OEL STEL)	14 mg/m ³
Croatia	KGVI (OEL STEL) [ppm]	10 ppm
Cyprus	OEL TWA	7 mg/m ³
Cyprus	OEL TWA [ppm]	5 ppm
Cyprus	OEL STEL	14 mg/m ³ (vapor)
Cyprus	OEL STEL [ppm]	10 ppm (vapor)
Czech Republic	PEL (OEL TWA)	7 mg/m ³
Denmark	OEL TWA [1]	7 mg/m ³
Denmark	OEL TWA [2]	5 ppm
Estonia	OEL TWA	7 mg/m ³
Estonia	OEL TWA [ppm]	5 ppm
Estonia	OEL STEL	14 mg/m ³

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Hydrogen sulphide (H ₂ S) (7783-06-4)		
Estonia	OEL STEL [ppm]	10 ppm
Finland	HTP (OEL TWA) [1]	7 mg/m ³
Finland	HTP (OEL TWA) [2]	5 ppm
Finland	HTP (OEL STEL)	14 mg/m ³
Finland	HTP (OEL STEL) [ppm]	10 ppm
France	VME (OEL TWA)	7 mg/m ³ (restrictive limit)
France	VME (OEL TWA) [ppm]	5 ppm (restrictive limit)
France	VLE (OEL C/STEL)	14 mg/m ³ (restrictive limit)
France	VLE (OEL C/STEL) [ppm]	10 ppm (restrictive limit)
Germany	Occupational exposure limit value (mg/m ³) (TRGS900)	2(l) 7,1 mg/m ³ peak limitation : 2(l)
Germany	Occupational exposure limit value (ppm) (TRGS900)	5 ppm Y= There is no fertility risk if the threshold limit as well as the biological threshold limit (BGW) is met
Gibraltar	OEL TWA	7 mg/m ³
Gibraltar	OEL TWA [ppm]	5 ppm
Gibraltar	OEL STEL	14 mg/m ³
Gibraltar	OEL STEL [ppm]	10 ppm
Greece	OEL TWA	7 mg/m ³
Greece	OEL TWA [ppm]	5 ppm
Greece	OEL STEL	14 mg/m ³
Greece	OEL STEL [ppm]	10 ppm
Hungary	AK (OEL TWA)	7 mg/m ³
Hungary	CK (OEL STEL)	14 mg/m ³
Ireland	OEL TWA [1]	7 mg/m ³
Ireland	OEL TWA [2]	5 ppm
Ireland	OEL STEL	14 mg/m ³
Ireland	OEL STEL [ppm]	10 ppm
Italy	OEL TWA	7 mg/m ³
Italy	OEL TWA [ppm]	5 ppm
Italy	OEL STEL	14 mg/m ³
Italy	OEL STEL [ppm]	10 ppm
Latvia	OEL TWA	7 mg/m ³
Latvia	OEL TWA [ppm]	5 ppm
Lithuania	IPRV (OEL TWA)	7 mg/m ³
Lithuania	IPRV (OEL TWA) [ppm]	5 ppm
Lithuania	TPRV (OEL STEL)	14 mg/m ³
Lithuania	TPRV (OEL STEL) [ppm]	10 ppm
Lithuania	NRV (OEL C)	20 mg/m ³
Lithuania	NRV (OEL C) [ppm]	15 ppm
Luxembourg	OEL TWA	7 mg/m ³

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Hydrogen sulphide (H ₂ S) (7783-06-4)		
Luxembourg	OEL TWA [ppm]	5 ppm
Luxembourg	OEL STEL	14 mg/m ³
Luxembourg	OEL STEL [ppm]	10 ppm
Malta	OEL TWA	7 mg/m ³
Malta	OEL TWA [ppm]	5 ppm
Malta	OEL STEL	14 mg/m ³
Malta	OEL STEL [ppm]	10 ppm
Netherlands	TGG-8u (OEL TWA)	2,3 mg/m ³
Poland	NDS (OEL TWA)	7 mg/m ³
Poland	NDSch (OEL STEL)	14 mg/m ³
Portugal	OEL TWA	7 mg/m ³ (indicative limit value)
Portugal	OEL TWA [ppm]	5 ppm (indicative limit value)
Portugal	OEL STEL	14 mg/m ³ (indicative limit value)
Portugal	OEL STEL [ppm]	10 ppm (indicative limit value)
Romania	OEL TWA	7 mg/m ³
Romania	OEL TWA [ppm]	5 ppm
Romania	OEL STEL	14 mg/m ³
Romania	OEL STEL [ppm]	10 ppm
Slovakia	NPHV (OEL TWA) [1]	7 mg/m ³
Slovakia	NPHV (OEL TWA) [2]	5 ppm
Slovakia	NPHV (OEL C)	14 mg/m ³
Slovenia	OEL TWA	7 mg/m ³
Slovenia	OEL TWA [ppm]	5 ppm
Slovenia	OEL STEL	14 mg/m ³
Slovenia	OEL STEL [ppm]	10 ppm
Spain	VLA-ED (OEL TWA) [1]	7 mg/m ³
Spain	VLA-ED (OEL TWA) [2]	5 ppm
Spain	VLA-EC (OEL STEL)	14 mg/m ³
Spain	VLA-EC (OEL STEL) [ppm]	10 ppm
Sweden	NGV (OEL TWA)	7 mg/m ³
Sweden	NGV (OEL TWA) [ppm]	5 ppm
Sweden	KTV (OEL STEL)	14 mg/m ³
Sweden	KTV (OEL STEL) [ppm]	10 ppm
United Kingdom	WEL TWA (OEL TWA) [1]	7 mg/m ³
United Kingdom	WEL TWA (OEL TWA) [2]	5 ppm
United Kingdom	WEL STEL (OEL STEL)	14 mg/m ³
United Kingdom	WEL STEL (OEL STEL) [ppm]	10 ppm
Norway	Grenseverdi (OEL TWA) [1]	7 mg/m ³
Norway	Grenseverdi (OEL TWA) [2]	5 ppm
Norway	Takverdi (OEL C) [1]	14 mg/m ³
Norway	Takverdi (OEL C) [2]	10 ppm
Switzerland	MAK (OEL TWA) [1]	7,1 mg/m ³

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Hydrogen sulphide (H ₂ S) (7783-06-4)		
Switzerland	MAK (OEL TWA) [2]	5 ppm
Switzerland	KZGW (OEL STEL)	14,2 mg/m ³
Switzerland	KZGW (OEL STEL) [ppm]	10 ppm
Australia	OES TWA [1]	14 mg/m ³
Australia	OES TWA [2]	10 ppm
Australia	OES STEL	21 mg/m ³
Australia	OES STEL [ppm]	15 ppm
Canada (Quebec)	VECD (OEL STEL)	21 mg/m ³
Canada (Quebec)	VECD (OEL STEL) [ppm]	15 ppm
Canada (Quebec)	VEMP (OEL TWA)	14 mg/m ³
Canada (Quebec)	VEMP (OEL TWA) [ppm]	10 ppm
USA - ACGIH	ACGIH OEL TWA [ppm]	1 ppm
USA - ACGIH	ACGIH OEL STEL [ppm]	5 ppm
USA - IDLH	IDLH [ppm]	100 ppm
USA - NIOSH	NIOSH REL C	15 mg/m ³
USA - NIOSH	NIOSH REL C [ppm]	10 ppm
USA - OSHA	OSHA PEL C [ppm]	20 ppm

Additional information : Recommended monitoring procedures :. Personal air monitoring. Room air monitoring


8.2. Exposure controls

Engineering measure(s)	: Provide adequate ventilation. Use with local exhaust ventilation. Take precautionary measures against static discharges. Use only explosion-proof equipment. Organisational measures to prevent /limit releases, dispersion and exposure. See Section 7 for information on safe handling.
Personal protective equipment	: The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Hand protection	: Wear chemically resistant gloves (tested to EN374) . Suitable material: rubber gloves. NBR (Nitrile rubber). Neoprene. Polyvinylchloride (PVC). Breakthrough time : > 480 min. Thickness : Not determined. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.
Eye protection	: Use suitable eye protection (EN166): Safety glasses. face shield
Body protection	: Wear suitable protective clothing : Wear sealed work clothes, chemical resistant. Overalls, apron and boots recommended.
Respiratory protection	: In case of insufficient ventilation, wear suitable respiratory equipment. Half-face mask (DIN EN 140). full face mask (DIN EN 136). Filter type: ABEK/P (EN14387). Self-contained open-circuit compressed air breathing apparatus (EN 137)
Thermal hazard protection	: Not required for normal conditions of use. Use dedicated equipment.
Environmental exposure controls	: Avoid release to the environment. Comply with applicable Community environmental protection legislation.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Solid.
Colour	: Yellow.

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Odour	: Characteristic.
Odour threshold	: No data available
pH	: No data available
pH solution	: Not available
Relative evaporation rate (butylacetate=1)	: No data available
Melting / freezing point	: 112 – 120 °C
Freezing point	: No data available
Initial boiling point and boiling range	: 444 – 447 °C (SRPS EN ISO 3405)
Flash point	: 168 – 207 °C (SRPS EN ISO 2719)
Auto-ignition temperature	: 232 °C
Decomposition temperature	: No additional information available
Flammability	: Not flammable
Vapour pressure	: 0,1333 Pa (20 °C)
Vapour density	: 1,79 (Air=1)
Relative density	: 1,811 – 2,34 g/cm ³ (15 °C)
Solubility	: Water: Insoluble
Partition coefficient n-octanol/water	: No additional information available
Kinematic viscosity	: No data available
Dynamic viscosity	: No data available
Explosive properties	: Not applicable. The study does not need to be conducted because there are no chemical groups associated with explosive properties present in the molecule.
Oxidising properties	: Not applicable. The classification procedure needs not to be applied because there are no chemical groups present in the molecule which are associated with oxidising properties.
Explosive limits	: 35 – 1400 g sulfur dust/m ³ air
Particle size	: Not available
Particle size distribution	: Not available
Particle shape	: Not available
Particle aspect ratio	: Not available
Particle aggregation state	: Not available
Particle agglomeration state	: Not available
Particle specific surface area	: Not available
Particle dustiness	: Not available

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available


9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions. Reference to other sections: 10.4 & 10.5.

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10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

at high temperatures :H₂S. Vapours may form explosive mixture with air.

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Protect from sunlight. See Section 7 for information on safe handling.

10.5. Incompatible materials

oxidising substances. Acids. Bases. Strong bases. See Section 7 for information on safe handling.

10.6. Hazardous decomposition products

Reference to other sections 5.2.

SECTION 11: Toxicological information

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

Acute toxicity : Not classified (Based on available data, the classification criteria are not met)

sulfur (7704-34-9)	
LD50/oral/rat	> 2000 mg/kg
LD50/dermal/rat	> 2000 mg/kg
LD50/dermal/rabbit	> 2000 mg/kg
LC50/inhalation/4h/rat	> 5430 mg/m ³
LC50 Inhalation - Rat (Vapours)	5,43 mg/l/4h

Hydrogen sulphide (H ₂ S) (7783-06-4)	
LC50/inhalation/4h/rat	0,99 mg/l (Exposure time: 1h)
LC50/inhalation/4h/rat (ppm)	501 ppm/4h

Skin corrosion/irritation : Causes skin irritation.

pH: No data available

Serious eye damage/irritation : Not classified (Based on available data, the classification criteria are not met)

pH: No data available

Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met)

Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)

Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)

Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)


STOT-single exposure : Not classified (Based on available data, the classification criteria are not met)

STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met)

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

Granular Sulphur (7704-34-9)	
Kinematic viscosity	No data available

Other information : Symptoms related to the physical, chemical and toxicological characteristics. For further information see section 4.

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11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Adverse health effects caused by 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

Other information

: Symptoms related to the physical, chemical and toxicological characteristics, For further information see section 4

SECTION 12: Ecological information

12.1. Toxicity

Environmental properties

: According to the criteria of the European classification and labelling system, the substance/the product has not to be labelled as "dangerous for the environment".

Hazardous to the aquatic environment, short-term (acute)

: Not classified

Hazardous to the aquatic environment, long-term (chronic)

: Not classified

sulfur (7704-34-9)

LC50 - Fish [1]

866 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])

LC50 - Fish [2]

< 14 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])

Hydrogen sulphide (H2S) (7783-06-4)

LC50 - Fish [1]

0,0448 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [flow-through])

LC50 - Fish [2]

0,016 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])

EC50 - Crustacea [1]

0,022 mg/l

12.2. Persistence and degradability

Granular Sulphur (7704-34-9)

Persistence and degradability

Expected to be biodegradable.

12.3. Bioaccumulative potential

Granular Sulphur (7704-34-9)

Partition coefficient n-octanol/water

No additional information available

Bioaccumulative potential

Low potential.

Hydrogen sulphide (H2S) (7783-06-4)

BCF - Fish [1]

(no bioaccumulation expected)

Partition coefficient n-octanol/water


0,45 (at 25 °C)

12.4. Mobility in soil

Granular Sulphur (7704-34-9)

Mobility in soil

No data available

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Ecology - soil	Not applicable.
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12.5. Results of PBT and vPvB assessment

Granular Sulphur (7704-34-9)	
Results of PBT assessment	Contains no PBT/vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

12.6. Endocrine disrupting properties

Adverse effects on the environment caused by 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

12.7. Other adverse effects

Other adverse effects : No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods






Product/Packaging disposal recommendations : Avoid release to the environment. Dispose of empty containers and wastes safely. See Section 7 for information on safe handling. Refer to manufacturer/supplier for information on recovery/recycling. Recycling is preferred to disposal or incineration. If recycling is not possible, eliminate in accordance with local valid waste disposal regulations. Handle contaminated packages in the same way as the substance itself. Dispose of contaminated materials in accordance with current regulations.


Additional information : Never use pressure to empty container. Do not burn, or use a cutting torch on the empty drum. Do not puncture or incinerate. Delivery to an approved waste disposal company.

European waste catalogue (2001/573/EC, 75/442/EEC, 91/689/EEC) : This material and its container must be disposed of as hazardous waste
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities

SECTION 14: Transport information

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

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
1350	1350	1350	1350	1350
14.2. UN proper shipping name				
SULPHUR	SULPHUR	Sulphur	SULPHUR	SULPHUR
Transport document description				
UN 1350 SULPHUR, 4.1, III, (E)	UN 1350 SULPHUR, 4.1, III	UN 1350 Sulphur, 4.1, III	UN 1350 SULPHUR, 4.1, III	UN 1350 SULPHUR, 4.1, III
14.3. Transport hazard class(es)				
4.1	4.1	4.1	4.1	4.1
				
14.4. Packing group				
III	III	III	III	III
14.5. Environmental hazards				
Dangerous for the	Dangerous for the	Dangerous for the	Dangerous for the	Dangerous for the

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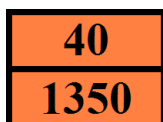
ADR	IMDG	IATA	ADN	RID
environment : No	environment : No Marine pollutant : No	environment : No	environment : No	environment : No
No supplementary information available				

14.6. Special precautions for user

Special precautions for user : No data available

- Overland transport


Classification code (ADR) : F3
 Special provisions : 242
 Limited quantities (ADR) : 5kg
 Excepted quantities (ADR) : E1
 Packing instructions (ADR) : P002, IBC08, LP02, R001
 Special packing provisions (ADR) : B3
 Mixed packing provisions (ADR) : MP11
 Portable tank and bulk container instructions (ADR) : T1, BK1, BK2, BK3
 Portable tank and bulk container special provisions (ADR) : TP33
 Tank code (ADR) : SGAV
 Vehicle for tank carriage : AT
 Transport category (ADR) : 3
 Special provisions for carriage - Bulk (ADR) : VC1, VC2
 Hazard identification number (Kemler No.) : 40
 Orange plates :



Tunnel restriction code : E
 EAC code : 1Z

- Transport by sea

Special provisions (IMDG) : 242, 967
 Limited quantities (IMDG) : 5 kg
 Excepted quantities (IMDG) : E1
 Packing instructions (IMDG) : P002, LP02
 IBC packing instructions (IMDG) : IBC08
 IBC special provisions (IMDG) : B3
 Tank instructions (IMDG) : T1, BK2, BK3
 Tank special provisions (IMDG) : TP33
 EmS-No. (Fire) : F-A
 EmS-No. (Spillage) : S-G
 Stowage category (IMDG) : A
 Stowage and handling (IMDG) : SW1, SW23
 Segregation (IMDG) : SG17

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Properties and observations (IMDG) : When involved in a fire, evolves toxic, very irritating and suffocating gas. The dust forms an explosive mixture with air which may be ignited by static electricity. Forms explosive mixtures with oxidizing substances. Corrosive to steel, in particular in the presence of moisture. The provisions of this Code should not apply to sulphur when it is formed to a specific shape (such as prills, granules, pellets, pastilles or flakes).

- Air transport

PCA Excepted quantities (IATA) : E1
PCA Limited quantities (IATA) : Y443
PCA limited quantity max net quantity (IATA) : 10kg
PCA packing instructions (IATA) : 446
PCA max net quantity (IATA) : 25kg
CAO packing instructions (IATA) : 449
CAO max net quantity (IATA) : 100kg
Special provisions (IATA) : A105, A803
ERG code (IATA) : 3L

- Inland waterway transport


Classification code (ADN) : F3
Special provisions (ADN) : 242
Limited quantities (ADN) : 5 kg
Excepted quantities (ADN) : E1
Carriage permitted (ADN) : B
Equipment required (ADN) : PP
Number of blue cones/lights (ADN) : 0

- Rail transport

Classification code (RID) : F3
Special provisions (RID) : 242
Limited quantities (RID) : 5kg
Excepted quantities (RID) : E1
Packing instructions (RID) : P002, IBC08, LP02, R001
Special packing provisions (RID) : B3
Mixed packing provisions (RID) : MP11
Portable tank and bulk container instructions (RID) : T1, BK1, BK2, BK3
Portable tank and bulk container special provisions (RID) : TP33
Tank codes for RID tanks (RID) : SGAV
Transport category (RID) : 3
Special provisions for carriage – Packages (RID) : W1
Special provisions for carriage – Bulk (RID) : VC1, VC2
Colis express (express parcels) (RID) : CE11
Hazard identification number (RID) : 40

14.7. Maritime transport in bulk according to IMO instruments

Code: IBC : No data available.

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SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

40. Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.	Hydrogen sulphide (H ₂ S)
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Granular Sulphur is not on the REACH Candidate List

Granular Sulphur is not on the REACH Annex XIV List

15.1.2. National regulations

France

No ICPE	Installations classées Désignation de la rubrique	Code Régime	Rayon
na	Not Applicable	na	na

Germany

Regulatory reference : WGK 1, Slightly hazardous to water (Classification according to AwSV; ID No. 753)
German storage class (LGK) : LGK 13 - Non-combustible solids
Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

Waterbezwaarlijkheid : B (4) - Weinig schadelijk voor in het water levende organismen
SZW-lijst van kankerverwekkende stoffen : The substance is not listed
SZW-lijst van mutagene stoffen : The substance is not listed
SZW-lijst van reprotoxische stoffen – Borstvoeding : The substance is not listed
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : The substance is not listed
SZW-lijst van reprotoxische stoffen – Ontwikkeling : The substance is not listed


15.2. Chemical safety assessment

For this substance a chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes:


1	Chemical name	Modified	
1.3	Details of the supplier of the safety data sheet	Modified	
2.3	ED text	Added	

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5.3	Advice for firefighters	Modified	
6.1	For non-emergency personnel	Modified	
7.1	Precautions for safe handling	Modified	
7.2	Special rules on packaging	Added	
7.2	Heat and ignition sources	Added	
9.2	Information with regard to physical hazard classes	Added	
9.2	Other safety characteristics	Added	
11.2	Adverse health effects caused by endocrine disrupting properties	Added	
12.6	Adverse effects on the environment caused by endocrine disrupting properties	Added	
14.7	Maritime transport in bulk according to IMO instruments	Added	
15.1	Installations classées	Added	
15.1	German storage class (LGK)	Added	
15.1	Waterbezwaarlijkheid	Added	

Abbreviations and acronyms:

	ADN = Accord Européen relatif au Transport International des Marchandises Dangereuses par voie de Navigation du Rhin ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route CLP = Classification, Labelling and Packaging Regulation according to 1272/2008/EC IATA = International Air Transport Association IMDG = International Maritime Dangerous Goods Code LEL = Lower Explosive Limit/Lower Explosion Limit UEL = Upper Explosion Limit/Upper Explosive Limit REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
	ABM = Algemene beoordelingsmethodiek
	BTT = Breakthrough time (maximum wearing time)
	DMEL = Derived Minimal Effect level
	DNEL = Derived No Effect Level
	EC50 = Median Effective Concentration
	EL50 = Median effective level
	ErC50 = EC50 in terms of reduction of growth rate
	ErL50 = EL50 in terms of reduction of growth rate
	EWC = European waste catalogue
	LC50 = Median lethal concentration
	LD50 = Median lethal dose
	LL50 = Median lethal level
	NA = Not applicable
	NOEC = No observed effect concentration
	NOEL: no-observed-effect level
	NOELR = No observed effect loading rate
	NOAEC = No observed adverse effect concentration
	NOAEL = No observed adverse effect level
	N.O.S. = Not Otherwise Specified
	OEL = Occupational Exposure Limits - Short Term Exposure Limits (STELs)
	PNEC = Predicted No Effect Concentration
	Quantitative structure-activity relationship (QSAR)

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	STOT = Specific Target Organ Toxicity
	TWA = time weighted average
	VOC = Volatile organic compounds
	WGK = Wassergefährdungsklasse (Water Hazard Class under German Federal Water Management Act)

Sources of key data used to compile the datasheet : Supplier information. LOLI. ECHA (European Chemicals Agency).

Training advice : Manipulations are to be done only by qualified and authorised persons. Normal use of this product shall imply use in accordance with the instructions on the packaging. Training staff on good practice.

Full text of H- and EUH-statements:

Acute Tox. 2 (Inhalation)	Acute toxicity (inhal.), Category 2
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Flam. Gas 1A	Flammable gases, Category 1A
H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.
H315	Causes skin irritation.
H330	Fatal if inhaled.
H400	Very toxic to aquatic life.
Press. Gas (Comp.)	Gases under pressure : Compressed gas
Skin Irrit. 2	Skin corrosion/irritation, Category 2

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878
Classification according to Regulation (EC) No. 1272/2008 [CLP]
Labelling according to Regulation (EC) No. 1272/2008 [CLP]

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