Safety Data Sheet according to Regulation 1907/2006/EC (REACH)

Date of issue: 12.09.2012 **Last update: 15.10.2024**
Version No.: 6.3

Section 1 Identification of the substance/mixture and of the company

1.1 Product identifier
Trade name: **SULFOLAC 85 SC**

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

1.3 Details of the supplier of the safety data sheet
agrostulln GmbH
Werksweg 2, D-92551 Stulln, Germany
Ph.: +49 9435/3069-0; Fax: +49 9435/3069-14;
e-mail: info@agrostulln.de

1.4 Emergency telephone numbers
Germany: agrostulln GmbH: +49 9435/3069-0 (8:00 – 16:00)
Poison Emergency Munich: +49 89 19240

Section 2 Hazards identification

2.1 Classification of the substance or mixture
This product does not meet the criteria for classification in any hazard class according to Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. However, a safety data sheet is being supplied for it on request.

2.2 Label elements

Pictogram	**none**
Signal Words	**none**
Hazard Statements	**none**

Precautionary statements:
P102 Keep out of reach of children.
P264 Wash hands thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection
P362 Take off contaminated clothing
P302+P352 IF ON SKIN: Wash with plenty of water.
P501 Dispose of contents/container according to national regulations

2.3 Other hazards
- The mixture itself or any substance contained in this mixture does not meet the criteria for vPvB and PBT according to Regulation (EC) No 1907/2006, Annex XIII.

- The mixture itself or any substance contained in this mixture is not identified as having endocrine disrupting properties according to Regulation (EU) 2017/2100

Section 3 Composition/information on ingredients

3.2 Mixtures
Description of the mixture:

Active ingredient:	Sulfur, 58 % w/w
Other components:	Dispersing Agent, Preserving Agent, Surfactants, Water
Hazardous ingredients:	Sulfur

Further information on the ingredient sulfur:

CAS No	EC No	Index No.	REACH Registration No.	% [weight]	Substance name	Classification acc. to Reg. (EC) 1278/2008 (CLP)	SCL, M-factor, ATE
7704-34-9	231-722-6	016-094-00-1	01-2119487295-27-XXXX	**58**	**Sulfur**	**Skin Irrit.2 H315**	**none**

For full text of H-statements, see SECTION 16.

There are no additional ingredients present in this mixture which, within the current knowledge of the supplier, are PBTs, vPvBs or Substances of equivalent concern, or nanoparticles, or have been assigned a workplace exposure limit and hence require reporting in this section.

Section 4 First aid measures

4.1 Description of first aid measures

General information: Remove contaminated, saturated clothing immediately. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Following inhalation: Provide fresh air. Seek medical assistance.

Following skin contact: After contact with skin, wash with soap and plenty of water.
In case of skin irritation, consult a physician.

Following eye contact: Rinse immediately carefully and thoroughly with eye-bath or water, then consult an ophthalmologist immediately.

Following ingestion: Drink water in little sips (dilution effect). Do not induce vomiting. Seek medical assistance immediately.

Self-protection of the first aider: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms:
Swallowing of the product can cause flatulence and diarrhoea.

4.3 Indication of any immediate medical attention and special treatment needed

Specific treatment: First aid, decontamination, treatment of symptoms.
Notes for the doctor: Treat symptomatically.

Section 5 Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Water mist, foam, powder, water-spray, CO_2
Unsuitable extinguishing media: Compact water jet (risk of steam explosion)

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products: Burning material forms highly toxic and irritant sulfur dioxide. In case of fire and/or explosion do not inhale fumes!

5.3 Advice for firefighters

Special protective actions for fire-fighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.

No action shall be taken involving any personal risk or without suitable training.

Protective clothing: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

Section 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedure

For non-emergency personnel
Protective equipment: refer to section 8.2
Emergency procedures: Remove ignition sources, provide sufficient ventilation and control aerosol development.
For emergency responders
As above, no additional information.

6.2 Environmental precautions

Do not allow to enter into drains or sewer, soil or open water (streams, ponds etc.).

6.3 Methods and material for containment and cleaning up

Soak up spilt substance mechanically with binding material for liquids and collect in suitable, sealed containers.

6.4 Reference to other sections

Refer to section 8 for information to suitable personal protective equipment
Refer to section 13 for more information to treatment of waste.

Section 7 Handling and storage

7.1 Precautions for safe handling

Protective measures: Avoid aerosol development. Provide fresh air.
Advice on general occupational hygiene: Do not eat, drink and smoke in work areas; wash hands after use; and remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Technical mesasures and storage conditions
Store in a cool, dry place, protect from moisture and direct sunlight.
Materials for packaging
Moisture resistant material, no special requirements.
Conditions for storage rooms and containers
Do not store together with food, feedstuff, and beverage. Keep away from children.
Further information related to storage
Storage class: **10-13**

7.3 Specific end use

The product is used as a liquid fertilizer with the common spraying equipment, according to good agricultural practice. Please refer to label for further information.

Section 8 Exposure Controls / Personal protection

8.1 Control parameters

Components with occupational exposure limits and/or biological occupational exposure limits requiring monitoring: none

8.2 Exposure controls

8.2.1 Appropriate engineering controls:
Ensure adequate ventilation, especially in confined areas
Organisational measures to prevent exposure:
Handle in accordance with good industrial hygiene and safety practice. When using, do not eat, drink or

smoke. Avoid contact with skin, eyes and clothing. Keep away from food and drink. Wash hands before breaks and after work. Take off all contaminated clothing immediately. Do not breathe vapours or spray mist.

8.2.2 Personal protective equipment:

a) Eye/face protection

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

b) Skin protection

- Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times.larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

- type of material
NBR (Nitrile rubber)
- material thickness
>0,11 mm
- breakthrough times of the glove material
>480 minutes (permeation: level 6)

- Body Protection

Use impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

c) Respiratory protection

In case of development of fumes, or aerosol, wear protective particle filter mask (Filter type P2).

8.2.3 Environmental exposure control

Do not allow to enter into drains or sewers, soil or open water.
Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. To avoid risks for the environment, apply only according to label instructions.

Section 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

a)	Physical state	viscous liquid
	Colour	yellowish
b)	Odour	none
c)	Odour threshold	not determined
d)	Melting Point (sulfur)	119 °C
e)	Boiling point (H_2O, 1013 hPa)	ca.100 °C
f)	Flammability	not applicable
g)	Upper/lower explosion limits	not applicable
h)	Flash point of molten sulfur:	207 °C
i)	Auto-ignition temperature	not applicable
j)	Decomposition temperature	not applicable

k)	pH value (1% in H_2O at 20°C)	7.0 ± 0.5
l)	Kinematic viscosity	1000 - 2000 mPas
m)	Solubility	dispersible in water (sulfur)
n)	N-octanol water partition coefficient	Log P_{ow} 5.68 (20°C)
o)	Vapour pressure (sulfur)	9.8 x 10-5 Pa (at 20°C)
p)	Density	not applicable
q)	Relative vapour density	not applicable
r)	Particle characteristics	Particle size distribution: d_{50}: < 6 µm Nanoforms: none

9.2 Other information

Miscibility	Not miscible with products containing oil

Section 10 Stability and reactivity

10.1 Reactivity
When handled according to the instructions on the label, the product is not reactive.

10.2 Chemical stability
The product is stable under appropriate storage conditions and ambient temperature as indicated in section 7.2.

10.3 Possibility of hazardous reactions
When stored and handled according to the instructions, no hazardous reactions are to be expected. See chapter 7 for further information.

10.4 Conditions to avoid
Avoid aerosol development.

10.5 Incompatible materials
With chlorates, nitrates, perchlorates and permanganates, explosive mixtures can develop that are extremely susceptible to shock.
The product is unstable in contact with strong oxidising agents, copper and copper oxides.

10.6 Hazardous decomposition products
Does not decompose when used for intended uses.

Section 11 Toxicological information

11.1 Information on toxicological effects

	Method	Species	Exposure time	Result
Acute toxicity				
Oral	OECD no. 423	Mice		LD_{50}: > 5000 mg/kg *
Dermal	OECD no. 402	Mice		LD_{50}: > 2000 mg/kg *
Inhalation	OECD no. 403	Mice	4 h	LC_{50}: 1.05 mg/l * max. attainable concentration with a MMAD in the target range (1-4 µm)
skin corrosion/irritation	OECD no. 404	Rabbit	4 h	No skin irritation*
serious eye damage/irritation	OECD no. 405	Rabbit	24 h	No eye irritation*
respiratory or skin sensitisation	OECD no. 406	Guinea Pig	25 d	No skin sensitisation observed*
Germ cell mutagenicity	Not determined			
Carcinogenicity	Not determined			
Reproductive toxicity	Not determined			
STOT-single exposure	Not determined			
STOT-repeated exposure	Not determined			
Aspiration hazard	Not determined			

* Based on available data, the classification criteria are not met.

Active ingredient sulfur, as far as data are available:

	Method	Species	Exposure time	Result/ Classification*
Acute toxicity				
Oral	OECD 401	Rat		LD_{50}: > 2000 mg/kg *
Dermal	OECD 402	Rat		LD_{50}: > 2000 mg/kg *
Inhalation	OECD 403	Rat	4 h	LC_{50}: 5430 mg/m³ * max. attainable concentration with a MMAD in the target range (1-4 µm)
skin corrosion/irritation	OECD 404	Rabbit	4 h	Irritating (Skin Irrit.2, H315)
serious eye damage/irritation	OECD 405	Rabbit	24 h	No eye irritation*
respiratory or skin sensitisation	OECD 406	Guinea Pig	25 d	No skin sensitisation observed*

* a), c), d): Based on available data, the classification criteria are not met

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

For this product, no endocrine disrupting properties were derived from application of the assessment criteria laid down in the corresponding Regulations ((EC) No 1907/2006, (EU) 2017/2100, (EU) 2018/605), that is relevant to assess endocrine disrupting properties for human health.

11.2.2 Other information

Swallowing of the product can cause flatulence and diarrhoea.
No other relevant adverse health effects have been reported.

Section 12 Ecological information

12.1 Toxicity

Ecotoxicological data for the product are not available. The ecotoxicological properties of **elemental sulfur** are as follows:

Acute aquatic Toxicity	Method	Species	Exposure time	Result
Fish		*Oncorhynchus mykiss*	96 h	LC_{50}> 4000 mg/l
Daphnia	OECD 202	*Daphnia magna*	48 h	EC_{50}> 800 mg/l
Algae	OECD 201	*Ankistrodesmus bibraianus*	72 h	EC_{50}> 232 mg/l
Chronic aquatic toxicity				
Fish	OECD 204	*Oncorhynchus mykiss*	28 d	LC_{50}> 80 mg/l
Daphnia	OECD 202	*Daphnia magna*	21 d	EC_{50}> 800 mg/l
Toxicity for other organisms				
Toxicity to bees	Dose response	*Apis mellifera*	24 h	LD50 > 80 µg a.s./bee Not toxic
Toxicity to earthworms	OECD 207	*Eisenia fetida*	14 d	LD50 > 1600 mg a.s./kg soil Not toxic

Information on environmental hazard effects of the decomposition products:
Sulfur dioxide and sulfurous acid: 1 mg/l lethal for fish

12.2 Persistance and degradability (elemental sulfur)

Physical and photo-chemical elimination:
Elemental sulphur dissociates in artificial sunlight (DT50 = 3-4 Std.)
Biodegradation:
Oxidation to sulfate which occurs naturally in soils and ground water (DT50 = 28 d)

12.3 Bio accumulative potential (elemental sulfur)

Octanol water partition coefficient of sulfur: Log P_{ow} 5.68 (20°C)

12.4 Mobility in soil (elemental sulfur)
Sulfur is not water-soluble and for this reason has low mobility in soils.

12.5 Results of PBT and vPvB assessment
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Endocrine disrupting properties

This mixture does not have endocrine disrupting properties with respect to non-target organisms as it does not meet the criteria set out in section B of Regulation (EU) No 2017/2100."

12.7 Other adverse effects
No known significant effects or critical hazards. Do not discharge into surface water or sanitary sewer system.

Section 13 Disposal considerations

13.1 Waste treatment methods
To be disposed of in accordance with local regulations. Waste should not be disposed of by release to sewers. Combustion possible in suitable incineration plants (flue gas desulfurisation).
European Waste Catalogue: EWC-Number 06 06 99
Waste description: wastes from the manufacture, formulation, supply and use of sulfur chemicals, sulfur chemical processes and desulfurisation processes, otherwise not specified.

Section 14 Transport information

Not classified as dangerous goods according to national and international regulations.

14.1	**UN number**	none
14.2	**UN proper shipping name**	not applicable
14.3	**Transport hazard class(es)**	none
14.4	**Packing group**	not applicable
14.5	**Environmental hazards**	none
14.6	**Special precautions for user**	avoid aerosol development
14.7	**Maritime transport in bulk according to IMO instruments**	Transport in bulk is not intended

Section 15 Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
EU Regulations:
Classification and labeling:
Regulation 1272/2008/EC (CLP) and 1907/2006 (REACH) in the current consolidated version

National regulations (Germany):
Chemikaliengesetz (ChemG)
Gefahrstoffverordnung (GefStoffV)
Düngemittelverordnung (DüMV of 5. Dezember 2012, BGBl. I S. 2482)
Chemikalien-Verbotsverordnung (ChemVerbotsV)
Water hazard class: Class 1, slightly hazardous to waters (Self classification according AwSV of 18.04.2017)

15.2 Chemical Safety Assessment:
No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier

Section 16 Other information

Indication of changes:
This Safety data sheet has been amended fundamentally according to Annex II of the REACH regulation (1907/2006/EC) and regulation 2015/830 of 28 May 2015, and Commission Regulation (EU) 2020/878.

Abbreviations and Acronyms

ATE	=Actute Toxicity estimate
AwSV	= Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (German regulation for protection of waterbodies)
CAS	= Chemical Abstacts Service
CLP	= Classification. Labelling and Packaging
d	= days
DT50	= dissipation time (half life)
EINECS	= European Inventory of Existing Commercial Chemical Substances
EC	= Effect Concentration
EU	= European Union
g/l	= grams per litre
h	= hours
IMO	= International Maritime Organization
LD	= Lethal Dose
LC	= Lethal Concentration
MMAD	= Mass Median Aerodynamic Diameter
OECD	= Organisation for Economic Co-operation and Development
PBT	= Persistent, Bioaccumulative, Toxic
REACH	= Registration, Evaluation, and Authorisation of Chemicals
SCL	= Specific Concentration Limit
STOT	= Specific Target Organ Toxicity
UN	= United Nations
vPvB	= very Persistent and very Bioaccumulative
w/w	= Weight/weight

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008: none
Classification procedure: not applicable, as toxicological data on the mixture are available.

Relevant R-phrases and/or H-statements:

For the mixture: no classification
For the Ingredient Sulfur*:*
According to Regulation (EC) No. 1272/2008 (CLP):
H 315: Causes skin irritation

Further information:
The information contained in this document relates solely to the safety requirements of this product and is accurate to the best of our knowledge and belief at the date of publication. Nothing herein is to be construed as a warranty with the meaning of liability or guarantee provisions.

Data sheet compiled: agrostulln GmbH