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Safety data sheet

BASF Safety data sheet according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended from time to time.
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Product: **Sodium Sulfite anhydrous food grade (E221)**
(ID no. 30042389/SDS_GEN_GB/EN)
Date of print 14.10.2025

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

1.1. Product identifier

Sodium Sulfite anhydrous food grade (E221)

Chemical name: sodium sulphite anhydrous
CAS Number: 7757-83-7

REACH registration number: 01-2119537420-49-0002

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

Relevant identified uses: food additive(s)
Recommended use: inorganic reducing agents, initial product for chemical syntheses, process chemical

1.3. Details of the supplier of the safety data sheet

Company:
BASF SE
67056 Ludwigshafen
GERMANY

Contact address:
BASF plc
4th and 5th Floors, 2 Stockport Exchange
Railway Road, Stockport, SK1 3GG
UNITED KINGDOM

Telephone: +44 161 475 3000
E-mail address: product-safety-uk-and-ireland@basf.com

1.4. Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

No need for classification according to GHS criteria for this product.

2.2. Label elements

According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

The product does not require a hazard warning label in accordance with GHS criteria.

Labeling of special preparations (GHS):
EUH031: Contact with acids liberates toxic gas.

Hazard determining component(s) for labelling: Sodium sulphite

2.3. Other hazards

According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

No specific dangers known, if the regulations/notes for storage and handling are considered.

The product does not contain a substance above legal limits fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Chemical nature

Sodium sulphite
CAS Number: 7757-83-7
EC-Number: 231-821-4

Na2SO3
E 221

3.2. Mixtures

Not applicable

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

Remove contaminated clothing.

If inhaled:
If difficulties occur after dust has been inhaled, remove to fresh air and seek medical attention. After inhalation of decomposition products: Immediately administer a corticosteroid from a controlled/metered dose inhaler. Seek medical attention.

On skin contact:
Wash thoroughly with soap and water

On contact with eyes:
Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:
Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

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

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., Many individuals are sensitive to sulphite additives and may experience a range of symptoms, including dermatitis, urticaria, angio-oedema, abdominal pain, diarrhoea, bronchoconstriction and anaphylaxis.

Hazards: Risk of sulfur dioxide formation by reaction with gastric acid after swallowing.

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

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media

Suitable extinguishing media:
water spray, carbon dioxide, foam, dry powder

Additional information:
Product will not burn.

Use extinguishing measures to suit surroundings.

5.2. Special hazards arising from the substance or mixture

Endangering substances: sulphur dioxide
Advice: The substances/groups of substances mentioned can be released if the product is involved in a fire.

5.3. Advice for fire-fighters

Special protective equipment:

Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:
Product itself is non-combustible; fire extinguishing method of surrounding areas must be considered. Contaminated extinguishing water must be disposed of in accordance with official regulations. In case of fire and/or explosion do not breathe fumes.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
Avoid contact with the skin, eyes and clothing. Use personal protective clothing. Ensure adequate ventilation. Avoid dust formation.

6.2. Environmental precautions
Do not discharge into drains/surface waters/groundwater. Do not discharge into the subsoil/soil. Retain and dispose of contaminated wash water.

6.3. Methods and material for containment and cleaning up
Sweep/shovel up. Dispose of absorbed material in accordance with regulations.

6.4. Reference to other sections
Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling
Use only in well-ventilated areas. Avoid dust formation. Avoid contact with skin and eyes.

Protection against fire and explosion:
The substance/product is non-combustible. No special precautions necessary.

7.2. Conditions for safe storage, including any incompatibilities
Segregate from acids and acid forming substances. Segregate from oxidants.

Suitable materials for containers: Stainless steel 1.4541, Stainless steel 1.4571, High density polyethylene (HDPE), Low density polyethylene (LDPE), Carbon steel (Iron)
Further information on storage conditions: Keep away from heat. Keep container tightly closed in a cool, well-ventilated place. Keep container dry. The product consumes oxygen. Danger of lack of oxygen in containers and tanks.

7.3. Specific end use(s)
For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Components with occupational exposure limits

No occupational exposure limits known.

The nuisance dust limit value is to be kept.

The substance mentioned develops if the regulation/notes for storage and handling are not observed.

7446-09-5: sulphur dioxide
TWA value 1.3 mg/m3 ; 0.5 ppm (WEL/EH 40 (UK))
STEL value 2.7 mg/m3 ; 1 ppm (WEL/EH 40 (UK))
STEL value 2.7 mg/m3 ; 1 ppm (WEL/EH 40 (UK))
Ceiling limit value/factor: 15 min

PNEC
freshwater:
No hazard identified.

marine water:
No hazard identified.

STP:
No hazard identified.

sediment (marine water):
No hazard identified.

sediment (freshwater):
No hazard identified.

air:
No hazard identified.

soil:
No hazard identified.

DNEL
No hazard identified.

8.2. Exposure controls

Personal protective equipment

Respiratory protection:

Breathing protection if dusts are formed. Suitable respiratory protection for lower concentrations or short-term effect: Particle filter with low efficiency for solid particles (e.g. EN 143 or 149, Type P1or FFP1) Breathing protection if gases/vapours are formed. Combination filter for gases/vapours of organic, inorganic, acid inorganic, alkaline compounds and toxic particles (e. g. EN 14387 Type ABEK-P3)

Hand protection:
Chemical resistant protective gloves (EN ISO 374-1)
Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1):
e.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) and other
Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.
Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection:
Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Do not inhale vapours or dust. Hands and/or face should be washed before breaks and at the end of the shift.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form:	powder, crystalline	
Colour:	white to slightly yellow	
Odour:	odourless	
Odour threshold:	Not determined due to potential health hazard by inhalation.	
pH value:	8.5 - 10.5 (5 %(m), 20 °C)	(OECD Guideline 122)
melting point (decomposition):	The substance / product decomposes.	
Boiling point:	(1,013.25 hPa) Study scientifically not justified.	
Flash point:	Study scientifically not justified.	

Evaporation rate:		
	The product is a non-volatile solid.	
Flammability:	Study scientifically not justified.	(other)
Lower explosion limit:		
	For solids not relevant for classification and labelling.	
Upper explosion limit:		
	For solids not relevant for classification and labelling.	
Vapour pressure:		
	Study scientifically not justified.	
Density:	2.633 g/cm3 (20 °C) Literature data.	
Relative density:	2.63 (20 °C) Literature data.	
Solubility in water:	Literature data. 220 g/l (20 °C)	
Partitioning coefficient n-octanol/water (log Kow):	-4 (25 °C)	(OECD Guideline 107)
Thermal decomposition:	500 °C	
Viscosity, dynamic:		
	not applicable	
Explosion hazard:	Based on the chemical structure there is no indication of explosive properties.	
Fire promoting properties:	Based on its structural properties the product is not classified as oxidizing.	

9.2. Other information

Burning rate:		
	Study scientifically not justified.	
Self heating ability:	It is not a substance capable of spontaneous heating.	
Bulk density:	1,400 - 1,600 kg/m3	(other)
pKA:		
	Study scientifically not justified.	
Adsorption/water - soil:		
	Study scientifically not justified.	
Grain size distribution	257 µm	(D50, ISO 13320-1;; particle size by laser diffraction)
	Test substance	other TS

SECTION 10: Stability and Reactivity

10.1. Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

10.2. Chemical stability
The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions
Reacts with nitrites. Reacts with nitrates. Reacts with oxidizing agents. Generation of sulphur dioxide upon exposure to acids. (or conditions.) The product consumes oxygen.

10.4. Conditions to avoid
Avoid humidity. avoid atmospheric oxygen

10.5. Incompatible materials

Substances to avoid:
nitrites, nitrates, oxidizing agents, acids

10.6. Hazardous decomposition products

Hazardous decomposition products:
sulphur dioxide

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
Of low toxicity after single ingestion. Virtually nontoxic by inhalation. Virtually nontoxic after a single skin contact.

Experimental/calculated data:
LD50 rat (oral): approx. 2,610 mg/kg (OECD Guideline 401)

LC50 rat (by inhalation): > 5.5 mg/l 4 h (OECD Guideline 403)
No mortality was observed. Tested as dust aerosol.

LD50 rat (dermal): > 2,000 mg/kg (OECD Guideline 402)
No mortality was observed.

Irritation

Assessment of irritating effects:
Not irritating to eyes and skin.

Experimental/calculated data:
Skin corrosion/irritation
rabbit: non-irritant (Draize test)

Skin corrosion/irritation

rabbit: non-irritant (similar to OECD guideline 404)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Serious eye damage/irritation
rabbit: non-irritant (Draize test)

Respiratory/Skin sensitization

Assessment of sensitization:
Skin sensitizing effects were not observed in animal studies. A sensitizing effect on particularly sensitive individuals cannot be excluded.

Experimental/calculated data:
Mouse Local Lymph Node Assay (LLNA) mouse: Non-sensitizing. (OECD Guideline 429)

Germ cell mutagenicity

Assessment of mutagenicity:
The substance was not mutagenic in bacteria. The substance was not mutagenic in a test with mammals.

Carcinogenicity

Assessment of carcinogenicity:
In long-term studies in rats in which the substance was given by feed, a carcinogenic effect was not observed. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

Reproductive toxicity

Assessment of reproduction toxicity:
The results of animal studies gave no indication of a fertility impairing effect. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. The chemical structure does not suggest a specific alert for such an effect.

Developmental toxicity

Assessment of teratogenicity:
No indications of a developmental toxic / teratogenic effect were seen in animal studies. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Experiences in humans

Experimental/calculated data:

With sensitive persons it can lead to an over sensitive reaction.

Specific target organ toxicity (single exposure)

Remarks: No applicable information available.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
Repeated oral uptake of the substance did not cause substance-related effects. Repeated inhalative uptake of the substance did not cause substance-related effects. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Aspiration hazard

not applicable

Other relevant toxicity information

Contact with acids liberates toxic gases.

SECTION 12: Ecological Information

12.1. Toxicity

Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish:
LC50 (96 h) 316 mg/l, Leuciscus idus (DIN 38412 Part 15, static)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. The details of the toxic effect relate to the nominal concentration.

Aquatic invertebrates:
EC50 (48 h) 59 mg/l, Daphnia magna (Directive 79/831/EEC, static)
The details of the toxic effect relate to the nominal concentration. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

EC50 (48 h) 230 mg/l, Daphnia magna (other, static)
The details of the toxic effect relate to the nominal concentration. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Aquatic plants:
EC50 (72 h) 31.9 mg/l (growth rate), Scenedesmus subspicatus (OECD Guideline 201, static)
The details of the toxic effect relate to the nominal concentration. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

EC50 (72 h) > 100 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201, static)
Nominal concentration. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Microorganisms/Effect on activated sludge:
EC50 (3 h) > 1,000 mg/l, (OECD Guideline 209, static)
The details of the toxic effect relate to the nominal concentration.

EC10 (17 h) 260 mg/l, Pseudomonas putida (DIN 38412 Part 8, aquatic)
Nominal concentration.

Chronic toxicity to fish:
No observed effect concentration (34 d) 316 mg/l, Brachydanio rerio (OECD Guideline 210, Flow through.)
The details of the toxic effect relate to the nominal concentration.

Chronic toxicity to aquatic invertebrates:
No observed effect concentration (21 d) > 10 mg/l, Daphnia magna (OECD Guideline 211, semistatic)
The details of the toxic effect relate to the nominal concentration. The product has not been tested.
The statement has been derived from substances/products of a similar structure or composition.

Assessment of terrestrial toxicity:
No data available.
Study scientifically not justified.

12.2. Persistence and degradability

Assessment biodegradation and elimination (H2O):
Inorganic product which cannot be eliminated from water by biological purification processes.

Elimination information:
Study scientifically not justified.

Assessment of stability in water:
According to structural properties, hydrolysis is not expected/probable.
Information on Stability in Water (Hydrolysis):
Study scientifically not justified.

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:
Significant accumulation in organisms is not to be expected.

Bioaccumulation potential:
Study scientifically not justified.

12.4. Mobility in soil

Assessment transport between environmental compartments:
Adsorption in soil: Adsorption to solid soil phase is not expected.

12.5. Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative). Self classification

12.6. Other adverse effects

The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

12.7. Additional information

Other ecotoxicological advice:
Higher concentrations of the substance may cause a strong chemical oxygen consumption in biological sewage-treatment plants and/or waterways. Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

The UK Environmental Protection (Duty of Care) Regulations (EP) and amendments should be noted (United Kingdom).

Contaminated packaging:
Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

SECTION 14: Transport Information

Land transport

ADR

	Not classified as a dangerous good under transport regulations
UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

RID

	Not classified as a dangerous good under transport regulations
UN number or ID number:	Not applicable

UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

Inland waterway transport

ADN

Not classified as a dangerous good under transport regulations

UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user:	None known

Transport in inland waterway vessel
Not evaluated

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

14.1. UN number or ID number
See corresponding entries for “UN number or ID number” for the respective regulations in the tables above.

14.2. UN proper shipping name
See corresponding entries for “UN proper shipping name” for the respective regulations in the tables above.

14.3. Transport hazard class(es)
See corresponding entries for “Transport hazard class(es)” for the respective regulations in the tables above.

14.4. Packing group
See corresponding entries for “Packing group” for the respective regulations in the tables above.

14.5. Environmental hazards
See corresponding entries for “Environmental hazards” for the respective regulations in the tables above.

14.6. Special precautions for user
See corresponding entries for “Special precautions for user” for the respective regulations in the tables above.

14.7. Maritime transport in bulk according to IMO instruments

Maritime transport in bulk is not intended.

SECTION 15: Regulatory Information

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

The data should be considered when making any assessment under the Control of Substances Hazardous to Health Regulations (COSHH), and related guidance, for example, 'COSHH Essentials' (United Kingdom).

15.2. Chemical Safety Assessment

Chemical Safety Assessment not required

SECTION 16: Other Information

Assessment of the hazard classes according to UN GHS criteria (most recent version)

Acute Tox. 5 (oral)
Aquatic Acute 3

Abbreviations
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road. ADN = The European Agreement concerning the International Carriage of Dangerous Goods by Inland waterways. ATE = Acute Toxicity Estimates. CAO = Cargo Aircraft Only. CAS = Chemical Abstract Service. CLP = Classification, Labelling and Packaging of substances and mixtures. DIN = German national organization for standardization. DNEL = Derived No Effect Level. EC50 = Effective concentration median for 50% of the population. EC = European Community. EN = European Standards. IARC = International Agency for Research on Cancer. IATA = International Air Transport Association. IBC-Code = Intermediate Bulk Container code. IMDG = International Maritime Dangerous Goods Code. ISO = International Organization for Standardization. STEL = Short-Term Exposure Limit. LC50 = Lethal concentration median for 50% of the population. LD50 = Lethal dose median for 50% of the population. TLV = Threshold Limit Value. MARPOL = The International Convention for the Prevention of Pollution from Ships. NEN = Dutch Norm. NOEC = No Observed Effect Concentration. OEL = Occupational Exposure Limit. OECD = Organization for Economic Cooperation and Development. PBT = Persistent, Bioaccumulative and Toxic. PNEC = Predicted No Effect Level. PPM = Parts per million. RID = The European Agreement concerning the International Carriage of Dangerous Goods by Rail. TWA = Time Weight Average. UN-number = UN number at transport. vPvB = very Persistent and very Bioaccumulative.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.