

Safety data sheet

Page: 1/15

BASF Safety data sheet according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended from time to time.

Date / Revised: 09.12.2022

Version: 11.0

Date previous version: 18.02.2021

Previous version: 10.0

Date / First version: 07.02.2003

Product: **Ammonium sulfate special grade**

(ID no. 30042199/SDS_GEN_GB/EN)

Date of print 16.10.2025

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

1.1. Product identifier

Ammonium sulfate special grade

Chemical name: Ammonium sulphate

CAS Number: 7783-20-2

REACH registration number: 01-2119455044-46-0000, 01-2119455044-46-0001

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

Relevant identified uses: Chemical

Recommended use: fertilizers, Chemical, Intermediate, process chemical, Fire extinguishing compounds, Laboratory chemicals

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

BASF Safety data sheet according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended from time to time.

Date / Revised: 09.12.2022

Version: 11.0

Date previous version: 18.02.2021

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Date of print 16.10.2025

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.

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

Ammonium sulphate

CAS Number: 7783-20-2

EC-Number: 231-984-1

| ε-caprolactam (Content (W/W): < 0.5 %)

CAS Number: 105-60-2

EC-Number: 203-313-2

INDEX-Number: 613-069-00-2

3.2. Mixtures

Not applicable

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

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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Remove contaminated clothing.

If inhaled:

After inhalation of dust. Fresh air. If difficulties occur: Seek medical attention. After inhalation of decomposition products: Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:

Wash thoroughly with soap and water

On contact with eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open. Seek medical attention.

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: (Further) symptoms and / or effects are not known so far

Hazards: After inhalation of decomposition products: Risk of pulmonary edema. Symptoms can appear later.

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

Treatment: After inhalation of decomposition products: Pulmonary odema prophylaxis.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media

Suitable extinguishing media:
water spray, foam, dry powder

5.2. Special hazards arising from the substance or mixture

Advice: See SDS section 7 - Handling and storage.

Temperature limit: 235 °C

Endangering substances: ammonia, anhydrous

Endangering substances: nitrogen oxides, sulfur oxides

Advice: The substances/groups of substances mentioned can be released in case of fire.

5.3. Advice for fire-fighters

Further information:

Product itself is non-combustible; fire extinguishing method of surrounding areas must be considered. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

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SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Handle in accordance with good industrial hygiene and safety practice. Information regarding personal protective measures, see section 8.

6.2. Environmental precautions

Do not discharge into drains/surface waters/groundwater. Retain and dispose of contaminated wash water.

6.3. Methods and material for containment and cleaning up

For large amounts: Sweep/shovel up.

For residues: Sweep/shovel up. Rinse away with water.

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

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Segregate from alkalies and alkalizing substances. Segregate from nitrites and alkaline substances.

Suitable materials for containers: Stainless steel 1.4401, Stainless steel 1.4301 (V2), Aluminium, Polyester resin, glass reinforced (Palatal A410), High density polyethylene (HDPE), glass, Low density polyethylene (LDPE)

Further information on storage conditions: Protect against moisture. The substance/product may cake under the influence of moisture.

Storage stability:

Storage temperature: 20 °C

Storage duration: 24 Months

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 substance specific occupational exposure limits known.

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PNEC

freshwater: 0.312 mg/l

marine water: 0.0312 mg/l

intermittent release: 0.53 mg/l

STP: 16.18 mg/l

sediment (freshwater): 0.063 mg/kg

soil: 62.6 mg/kg

DNEL

worker:

Long-term exposure- systemic effects, dermal: 42.67 mg/kg bw/day

worker:

Long-term exposure- systemic effects, Inhalation: 11.17 mg/m³

consumer:

Long-term exposure- systemic effects, oral: 6.4 mg/kg bw/day

consumer:

Long-term exposure- systemic effects, Inhalation: 1.67 mg/m³

consumer:

Long-term exposure- systemic effects, dermal: 12.8 mg/kg bw/day

8.2. Exposure controls

Personal protective equipment

Respiratory protection:

Breathing protection if breathable aerosols/dust are formed. Particle filter with low efficiency for solid particles (e.g. EN 143 or 149, Type P1 or FFP1)

Hand protection:

Chemical resistant protective gloves (EN ISO 374-1)

e.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) and other

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 based on level of activity and exposure.

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Date / Revised: 09.12.2022

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Date of print 16.10.2025

General safety and hygiene measures

Handle in accordance with good industrial hygiene and safety practice. At the end of the shift the skin should be cleaned and skin-care agents applied.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form:	crystalline	
Colour:	white	
Odour:	odourless	
Odour threshold:	No data available.	
pH value:	approx. 5 (100 g/l, 20 °C)	(pH Meter)
melting point (decomposition):	approx. 350 °C The substance / product decomposes.	(other)
onset of boiling:	The substance / product decomposes therefore not determined.	(other)
Flash point:	The substance/product is non-combustible.	(other)
Evaporation rate:	not applicable, The product is a non-volatile solid.	
Flammability:	not flammable	(other)
Lower explosion limit:	not applicable	
Upper explosion limit:	not applicable	
Ignition temperature:	not applicable	
Vapour pressure:	0.0000001 hPa (25 °C) Literature data.	(measured)
Density:	1.766 g/cm ³ (20 °C)	(OECD Guideline 109)
Relative density:	1.77 (25 °C, 1,013 hPa) Literature data.	(other)
Relative vapour density (air):	not applicable, The product is a non-volatile solid.	

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(ID no. 30042199/SDS_GEN_GB/EN)

Date of print 16.10.2025

Solubility in water:		(internal method)
	764 g/l (20 °C)	
		(internal method)
	843 g/l (50 °C)	
Partitioning coefficient n-octanol/water (log Kow):	not applicable	
Self ignition:	not self-igniting	Test type: Spontaneous self-ignition at room-temperature. (Method: other)
	The value has not be determined because of the low risk of self-ignition in consequence of the high flash-point.	Test type: Self-ignition at high temperatures. (Method: other)
Thermal decomposition:	> 235 °C To avoid thermal decomposition, do not overheat.	
Viscosity, dynamic:	not applicable	
Viscosity, kinematic:	not applicable, the product is a solid	
Explosion hazard:	Based on the chemical structure there is no indication of explosive properties.	(other)
Fire promoting properties:	Based on its structural properties the product is not classified as oxidizing.	(other)

9.2. Other information

Self heating ability:	It is not a substance capable of spontaneous heating.	
Bulk density:	1,000 kg/m3 (20 °C)	(other)
Adsorption:	Study scientifically not justified.	
Surface tension:		(other)
	Based on chemical structure, surface activity is not to be expected.	
Grain size distribution	560 µm	(D50, other (calculated))

SECTION 10: Stability and Reactivity

10.1. Reactivity

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

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Date / Revised: 09.12.2022

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Date of print 16.10.2025

Formation of
flammable gases:

Remarks:

Forms no flammable gases in the
presence of water.

10.2. Chemical stability

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

10.3. Possibility of hazardous reactions

Evolution of ammonia under influence of alkalies. Reacts with alkalis and nitrites.

10.4. Conditions to avoid

See SDS section 7 - Handling and storage.

10.5. Incompatible materials

Substances to avoid:

alkaline reactive substances, nitrites

10.6. Hazardous decomposition products

Hazardous decomposition products:

ammonia, anhydrous

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:

Of low toxicity after single ingestion. Of low toxicity after short-term skin contact.

Experimental/calculated data:

LD50 rat (oral): 4,250 mg/kg (BASF-Test)

(by inhalation): Study does not need to be conducted.

LD50 rat (dermal): > 2,000 mg/kg

Literature data.

Information on: Ammonium sulphate

Assessment of acute toxicity:

Of low toxicity after single ingestion. Of low toxicity after short-term skin contact.

Irritation

Assessment of irritating effects:

Not irritating to the skin. Not irritating to the eyes.

Experimental/calculated data:

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Date / Revised: 09.12.2022

Version: 11.0

Date previous version: 18.02.2021

Previous version: 10.0

Date / First version: 07.02.2003

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(ID no. 30042199/SDS_GEN_GB/EN)

Date of print 16.10.2025

Skin corrosion/irritation

rabbit: non-irritant (BASF-Test)

Serious eye damage/irritation

rabbit: non-irritant (BASF-Test)

Respiratory/Skin sensitization

Assessment of sensitization:

Skin sensitizing effects were not observed in animal studies.

Experimental/calculated data:

Guinea pig maximization test guinea pig: Non-sensitizing. (other)

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Germ cell mutagenicity

Assessment of mutagenicity:

The substance was not mutagenic in bacteria. The substance was not mutagenic in mammalian cell culture. The substance was not mutagenic in studies with mammals.

Experimental/calculated data:

Ames-test

negative (OECD Guideline 471)

Cytogenetic assay

negative (OECD Guideline 473)

Literature data.

HGPRT assay

CHO cells: negative (OECD Guideline 476)

Carcinogenicity

Assessment of carcinogenicity:

In long-term animal studies in which the substance was given in high concentrations by feed, a carcinogenic effect was not observed.

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.

Developmental toxicity

BASF Safety data sheet according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended from time to time.

Date / Revised: 09.12.2022

Version: 11.0

Date previous version: 18.02.2021

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Product: **Ammonium sulfate special grade**

(ID no. 30042199/SDS_GEN_GB/EN)

Date of print 16.10.2025

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.

Specific target organ toxicity (single exposure)

Assessment of STOT single:

The available information is not sufficient for the evaluation of specific target organ toxicity.

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

Assessment of repeated dose toxicity:

No substance-specific organotoxicity was observed after repeated administration to animals.

Aspiration hazard

not applicable

Other relevant toxicity information

The product has not been tested. The statement has been derived from the properties of the individual components.

SECTION 12: Ecological Information

12.1. Toxicity

Assessment of aquatic toxicity:

The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations. Acutely harmful for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations. Acutely harmful for aquatic organisms.

Toxicity to fish:

LC50 (96 h) 53 mg/l, *Oncorhynchus mykiss* (Fish test acute)

Aquatic invertebrates:

EC50 (48 h) 121.7 mg/l, *Ceriodaphnia* sp. (Daphnia test acute, static)

Aquatic plants:

EC50 (18 d) 2,700 mg/l (growth rate), *Chlorella vulgaris* (other)

The details of the toxic effect relate to the nominal concentration.

Microorganisms/Effect on activated sludge:

EC20 (0.5 h) approx. 1,050 mg/l, activated sludge (OECD Guideline 209, aquatic)

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Date / Revised: 09.12.2022

Version: 11.0

Date previous version: 18.02.2021

Previous version: 10.0

Date / First version: 07.02.2003

Product: **Ammonium sulfate special grade**

(ID no. 30042199/SDS_GEN_GB/EN)

Date of print 16.10.2025

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Chronic toxicity to aquatic invertebrates:
EC10 (70 d) 3.12 mg/l (semistatic)

Soil living organisms:

LC50 (14 d) 201 mg/kg, *Eisenia foetida* (artificial soil)

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Other terrestrial non-mammals:
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. Can be oxidized to nitrate, or be reduced to nitrogen, by microorganisms.

Elimination information:
Study scientifically not justified.

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:

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).

12.6. Other adverse effects

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

SECTION 13: Disposal Considerations

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Date / Revised: 09.12.2022

Version: 11.0

Date previous version: 18.02.2021

Previous version: 10.0

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(ID no. 30042199/SDS_GEN_GB/EN)

Date of print 16.10.2025

13.1. Waste treatment methods

Test for use in agriculture.

Contact manufacturer.

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

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Date / Revised: 09.12.2022

Version: 11.0

Date previous version: 18.02.2021

Previous version: 10.0

Date / First version: 07.02.2003

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(ID no. 30042199/SDS_GEN_GB/EN)

Date of print 16.10.2025

Special precautions for user: None known

Transport in inland waterway vessel

	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

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.

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Date / Revised: 09.12.2022

Version: 11.0

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(ID no. 30042199/SDS_GEN_GB/EN)

Date of print 16.10.2025

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

Prohibitions, Restrictions and Authorizations

Annex XVII of Regulation (EC) No 1907/2006: Number on List: 75

Directive 2012/18/EU - Control of Major Accident Hazards involving dangerous substances (EU):
Listed in above regulation: no

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).

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

15.2. Chemical Safety Assessment

Chemical Safety Assessment performed

SECTION 16: Other Information

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

Aquatic Acute 3

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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Previous version: 10.0

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Date of print 16.10.2025

Acute Tox. 5 (oral)

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.

Vertical lines in the left hand margin indicate an amendment from the previous version.