



Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Ammoniumsulfat

Version number: 5.0
Replaces version of: 2016-02-26 (4)

Revision: 2018-06-01
First version: 20.03.2006

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

1.1 Product identifier

| | |
|-----------------------------|-----------------------|
| Trade name | <u>Ammoniumsulfat</u> |
| Registration number (REACH) | 01-2119455044-46-XXXX |
| EC number | 231-984-1 |
| CAS number | 7783-20-2 |

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

| | |
|--------------------------|-------------------|
| Relevant identified uses | Process agent use |
|--------------------------|-------------------|

1.3 Details of the supplier of the safety data sheet

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Please do not use this e-mail adress to ask for the latest safety data sheet. For this purpose contact BERGCHEMIE J.C.Bröcking & Co. GmbH.

1.4 Emergency telephone number

As above or next toxicological information centre.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

This substance does not meet the criteria for classification in accordance with Regulation No 1272/2008/EC.

2.2 Label elements

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

not required

2.3 Other hazards

There is no additional information.

Results of PBT and vPvB assessment

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According to the results of its assessment, this substance is not a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

| | |
|--------------------------|-------------------|
| Name of substance | ammonium sulphate |
| Identifiers | |
| CAS No | 7783-20-2 |
| EC No | 231-984-1 |
| Molar mass | 132.1 g/mol |

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

In all cases of doubt, or when symptoms persist, seek medical advice.

Following inhalation

Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

Following ingestion

Rinse mouth. Do not induce vomiting.

Get medical advice/attention if you feel unwell.

Notes for the doctor

none

4.2 Most important symptoms and effects, both acute and delayed

These information are not available.

4.3 Indication of any immediate medical attention and special treatment needed

none

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SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

water, foam, fire extinguishing powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products: Section 10.

Hazardous combustion products

ammonia (NH₃), nitrogen oxides (NO_x), sulphur oxides (SO_x)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes.

Co-ordinate firefighting measures to the fire surroundings.

Do not allow firefighting water to enter drains or water courses.

Collect contaminated firefighting water separately.

Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

use suitable breathing apparatus

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Ventilate affected area.

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water.

Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advices on how to contain a spill

take up mechanically

Advices on how to clean up a spill

Take up mechanically.

Collect spillage.

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Other information relating to spills and releases

Place in appropriate containers for disposal.
Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5.
Personal protective equipment: see section 8.
Incompatible materials: see section 10.
Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation.

Specific notes/details

Dust deposits may accumulate on all deposition surfaces in a technical room.

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

Do not eat, drink and smoke in work areas.
Wash hands after use.
Preventive skin protection (barrier creams/ointments) is recommended.
Remove contaminated clothing and protective equipment before entering eating areas.
Do not breathe dust.
Avoid contact with skin and eyes.

7.2 Conditions for safe storage, including any incompatibilities

Flammability hazards

None.

Incompatible substances or mixtures

Incompatible materials: see section 10.

Protect against external exposure, such as

heat, humidity

Consideration of other advice

Keep away from food, drink and animal feedingstuffs.

Ventilation requirements

Provision of sufficient ventilation.

Specific designs for storage rooms or vessels

Storage temperature

recommended storage temperature: <25 °C

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Packaging compatibilities

Keep only in original container.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

| Occupational exposure limit values (Workplace Exposure Limits) | | | | | | | | | |
|--|---------------|--------|----------|------------|-----------|--------------------------|------------|---------------------------|-----------|
| Country | Name of agent | CAS No | Notation | Identifier | TWA [ppm] | TWA [mg/m ³] | STEL [ppm] | STEL [mg/m ³] | Source |
| GB | dust | | i | WEL | | 10 | | | EH40/2005 |
| GB | dust | | r | WEL | | 4 | | | EH40/2005 |

Notation

i inhalable fraction

r respirable fraction

STEL short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Human health values

| Relevant DNELs and other threshold levels | | | | |
|---|-------------------------|------------------------------------|-------------------------------|----------------------------|
| Endpoint | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
| DNEL | 42.67 mg/kg | human, dermal | worker (industry) | chronic - systemic effects |
| DNEL | 11.17 mg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| DNEL | 6.4 mg/kg | human, oral | consumer (private households) | chronic - systemic effects |
| DNEL | 12.8 mg/kg | human, dermal | consumer (private households) | chronic - systemic effects |
| DNEL | 1.667 mg/m ³ | human, inhalatory | consumer (private households) | chronic - systemic effects |

Environmental values

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| Relevant PNECs and other threshold levels | | |
|---|-----------------|------------------------------|
| Endpoint | Threshold level | Environmental compartment |
| PNEC | 0.312 mg/l | freshwater |
| PNEC | 0.0312 mg/l | marine water |
| PNEC | 16.18 mg/l | sewage treatment plant (STP) |
| PNEC | 0.063 mg/kg | freshwater sediment |
| PNEC | 62.6 mg/kg | soil |
| PNEC | 0.53 mg/l | water |

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Hand protection

| Material | Material thickness | Breakthrough times of the glove material |
|--|--------------------|--|
| NR: natural rubber, latex | ≥ 0,5 mm | >480 minutes (permeation: level 6) |
| IIR: isobutene-isoprene (butyl) rubber | ≥ 0,5 mm | >480 minutes (permeation: level 6) |
| CR: chloroprene (chlorobutadiene) rubber | ≥ 0,5 mm | >480 minutes (permeation: level 6) |
| PVC: polyvinyl chloride | ≥ 0,5 mm | >480 minutes (permeation: level 6) |
| FKM: fluoro-elastomer | ≥ 0,4 mm | >480 minutes (permeation: level 6) |

Wear suitable gloves.

Chemical protection gloves are suitable, which are tested according to EN 374.

Check leak-tightness/impermeability prior to use.

In the case of wanting to use the gloves again, clean them before taking off and air them well.

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.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Particulate filter device (EN 143).

Environmental exposure controls

Use appropriate container to avoid environmental contamination.

Keep away from drains, surface and ground water.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

| | |
|-----------------|-------------------------------------|
| Physical state | solid |
| Form | crystalline |
| Colour | white |
| Odour | odourless |
| Odour threshold | these information are not available |

Other safety parameters

| | |
|---|-------------------------------------|
| pH (value) | 5 – 6 (50 g/l, 20 °C) |
| Melting point/freezing point | 235 °C |
| Initial boiling point and boiling range | these information are not available |
| Flash point | not applicable |
| Evaporation rate | these information are not available |
| Flammability (solid, gas) | non-combustible |
| Explosion limits of dust clouds | not determined |
| Vapour pressure | 0.0000001 hPa at 25 °C |
| Density | 1.77 g/cm ³ at 20 °C |
| Vapour density | these information are not available |
| Bulk density | 1 – 1.2 g/cm ³ |
| Relative density | these information are not available |

Solubility(ies)

Water solubility 760 g/l at 20 °C

Partition coefficient

| | |
|---|-------------------------------------|
| n-octanol/water (log KOW) | these information are not available |
| Auto-ignition temperature | not relevant (Solid matter) |
| Relative self-ignition temperature for solids | these information are not available |
| Decomposition temperature | 235 °C |

Viscosity

Kinematic viscosity not relevant
(solid matter)

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| | |
|--------------------------|--------------------------------------|
| Dynamic viscosity | not relevant (solid matter) |
| Explosive properties | not explosive |
| Oxidising properties | shall not be classified as oxidising |

9.2 Other information

None

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Dangerous/dangerous reactions with.
Alkalis.

10.4 Conditions to avoid

Protect from moisture.

10.5 Incompatible materials

bases, oxidisers, alkaline earth metal

Release of toxic materials with:

bases

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known.

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

If not otherwise specified the classification is based on:

Animal studies; Evidence from any other toxicity tests; Expert judgement (weight of evidence determination).

Classification according to GHS (1272/2008/EC, CLP)

This substance does not meet the criteria for classification in accordance with Regulation No 1272/2008/EC.

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Acute toxicity

Shall not be classified as acutely toxic (oral).

Shall not be classified as acutely toxic (dermal).

| Acute toxicity | | | | | |
|----------------|----------|--------------|---------|--------------------|--------|
| Exposure route | Endpoint | Value | Species | Method | Source |
| oral | LD50 | 4,250 mg/kg | rat | OECD Guideline 401 | ECHA |
| dermal | LD50 | >2,000 mg/kg | rat | | ECHA |

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

Skin sensitisation

Shall not be classified as a skin sensitizer.

Respiratory sensitisation

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - single exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - repeated exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

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SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity (acute)

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

| Aquatic toxicity (acute) | | | | | |
|--------------------------|------------|--|--------|--------|---------------|
| Endpoint | Value | Species | Method | Source | Exposure time |
| LC50 | 53 mg/l | rainbow trout (<i>Oncorhynchus mykiss</i>) | | ECHA | 96 h |
| EC50 | 121.7 mg/l | aquatic invertebrates | | ECHA | 48 h |

Aquatic toxicity (chronic)

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

| Aquatic toxicity (chronic) | | | | | |
|----------------------------|------------|---|--------|--------|---------------|
| Endpoint | Value | Species | Method | Source | Exposure time |
| EC50 | 2,700 mg/l | algae (<i>Chlorella vulgaris</i>) | | ECHA | 18 d |
| ErC50 | 1,605 mg/l | algae (<i>Chlorella vulgaris</i>) | | ECHA | 5 d |
| growth (Eb-Cx) 10% | 5.29 mg/l | bluegill (<i>Lepomis macrochirus</i>) | | ECHA | 30 d |
| reproductive output 10% | 3.12 mg/l | aquatic invertebrates | | ECHA | 70 d |

12.2 Persistence and degradability

Biodegradation

Not readily biodegradable.

The study does not need to be conducted because the substance is inorganic.

Persistence

The study does not need to be conducted because the substance is inorganic.

12.3 Bioaccumulative potential

Data are not available.

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

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12.6 Other adverse effects

Data are not available.

Endocrine disrupting potential

Not listed.

Remarks

Wassergefährdungsklasse, WGK (water hazard class): 1

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions.

SECTION 14: Transport information

- | | | |
|------|---|---|
| 14.1 | UN number | not subject to transport regulations |
| 14.2 | UN proper shipping name | - |
| 14.3 | Transport hazard class(es) | |
| | Class | - |
| 14.4 | Packing group | - |
| 14.5 | Environmental hazards | non-environmentally hazardous acc. to the dangerous goods regulations |
| 14.6 | Special precautions for user | |
| | | There is no additional information. |
| 14.7 | Transport in bulk according to Annex II of MARPOL and the IBC Code | |
| | | The cargo is not intended to be carried in bulk. |
| 14.8 | <u>Information for each of the UN Model Regulations</u> | |
| | Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) | |
| | | Not subject to ADR, RID and ADN. |
| | International Maritime Dangerous Goods Code (IMDG) | |
| | | Not subject to IMDG. |

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International Civil Aviation Organization (ICAO-IATA/DGR)

Not subject to ICAO-IATA.

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Restrictions according to REACH, Annex XVII

| Dangerous substances with restrictions (REACH, Annex XVII) | | | |
|--|--------------------------|--------|-------------|
| Name of substance | Name acc. to inventory | CAS No | Restriction |
| ammonium sulphate | inorganic ammonium salts | | R65 |

Legend

- R65
1. Shall not be placed on the market, or used, in cellulose insulation mixtures or cellulose insulation articles after 14 July 2018 unless the emission of ammonia from those mixtures or articles results in a concentration of less than 3 ppm by volume (2,12 mg/m³) under the test conditions specified in paragraph 4.
A supplier of a cellulose insulation mixture containing inorganic ammonium salts shall inform the recipient or consumer of the maximum permissible loading rate of the cellulose insulation mixture, expressed in thickness and density.
A downstream user of a cellulose insulation mixture containing inorganic ammonium salts shall ensure that the maximum permissible loading rate communicated by the supplier is not exceeded.
 2. By way of derogation, paragraph 1 shall not apply to placing on the market of cellulose insulation mixtures intended to be used solely for the production of cellulose insulation articles, or to the use of those mixtures in the production of cellulose insulation articles.
 3. In the case of a Member State that, on 14 July 2016, has national provisional measures in place that have been authorised by the Commission pursuant to Article 129(2)(a), the provisions of paragraphs 1 and 2 shall apply from that date.
 4. Compliance with the emission limit specified in the first subparagraph of paragraph 1 shall be demonstrated in accordance with Technical Specification CEN/TS 16516, adapted as follows:
 - (a) the duration of the test shall be at least 14 days instead of 28 days;
 - (b) the ammonia gas emission shall be measured at least once per day throughout the test;
 - (c) the emission limit shall not be reached or exceeded in any measurement taken during the test;
 - (d) the relative humidity shall be 90 % instead of 50 %;
 - (e) an appropriate method to measure the ammonia gas emission shall be used;
 - (f) the loading rate, expressed in thickness and density, shall be recorded during the sampling of the cellulose insulation mixtures or articles to be tested.

List of substances subject to authorisation (REACH, Annex XIV) / SVHC - candidate list

not listed

Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II

not listed

Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

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Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)

not listed

Regulation 98/2013/EU on the marketing and use of explosives precursors

not listed

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance by the supplier.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Indication of changes: Section 2, 8, 9, 15

Abbreviations and acronyms

| Abbreviations and acronyms | |
|----------------------------|---|
| Abbr. | Descriptions of used abbreviations |
| ADN | Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways) |
| ADR | Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road) |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| CLP | Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| DNEL | Derived No-Effect Level |
| EC No | The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union) |
| EH40/2005 | EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/) |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| IATA | International Air Transport Association |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |
| ICAO | International Civil Aviation Organization |
| IMDG | International Maritime Dangerous Goods Code |
| MARPOL | International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant") |

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| Abbreviations and acronyms | |
|-----------------------------------|---|
| Abbr. | Descriptions of used abbreviations |
| NLP | No-Longer Polymer |
| PBT | Persistent, Bioaccumulative and Toxic |
| PNEC | Predicted No-Effect Concentration |
| ppm | Parts per million |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) |
| STEL | Short-term exposure limit |
| SVHC | Substance of Very High Concern |
| TWA | Time-weighted average |
| vPvB | Very Persistent and very Bioaccumulative |
| WEL | Workplace exposure limit |

Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.
Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN).

International Maritime Dangerous Goods Code (IMDG).

Dangerous Goods Regulations (DGR) for the air transport (IATA).

Responsible for the safety data sheet

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This SDS has been compiled and is solely intended for this product.