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

1.1 Product identifier

<table>
<thead>
<tr>
<th>Trade name</th>
<th>Ammoniumsulfat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration number (REACH)</td>
<td>01-2119455044-46-XXXX</td>
</tr>
<tr>
<td>EC number</td>
<td>231-984-1</td>
</tr>
<tr>
<td>CAS number</td>
<td>7783-20-2</td>
</tr>
</tbody>
</table>

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

- Relevant identified uses: Chemicals for various applications, Process agent use

1.3 Details of the supplier of the safety data sheet

BERGCHEMIE J.C.Bröcking & Co. GmbH
Rudolfstrasse 14
42285 Wuppertal
Germany

Telephone: ++49 (0) 202 - 45 60 60
Telefax: ++49 (0) 202 / 44 79 32

E-mail address of competent person responsible for the SDS: sdb@csb-online.de

Please do not use this e-mail address 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.

Additional information

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

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
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
Molecular formula  H3N.1/2H2O4S
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
Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed
none

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 (NOx), sulphur oxides (SOx)

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
self-contained breathing apparatus (EN 133)

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 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.

**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 to 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**

**Explosive atmospheres**
Removal of dust deposits.
Ammoniumsulfat

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
<25 °C

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
No data available.

<table>
<thead>
<tr>
<th>Country</th>
<th>Name of agent</th>
<th>CAS No</th>
<th>Notation</th>
<th>Identifier</th>
<th>TWA [ppm]</th>
<th>TWA [mg/m³]</th>
<th>STEL [ppm]</th>
<th>STEL [mg/m³]</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>GB</td>
<td>dust</td>
<td></td>
<td>i</td>
<td>WEL</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td>EH40/2005</td>
</tr>
<tr>
<td>GB</td>
<td>dust</td>
<td></td>
<td>r</td>
<td>WEL</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>EH40/2005</td>
</tr>
</tbody>
</table>

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

Human health values
Relevant DNELs and other threshold levels

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Protection goal, route of exposure</th>
<th>Used in</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNEL</td>
<td>42.67 mg/kg</td>
<td>human, dermal</td>
<td>worker (industry)</td>
<td>chronic - systemic effects</td>
</tr>
<tr>
<td>DNEL</td>
<td>11.17 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>chronic - systemic effects</td>
</tr>
<tr>
<td>DNEL</td>
<td>6.4 mg/kg</td>
<td>human, oral</td>
<td>consumer (private households)</td>
<td>chronic - systemic effects</td>
</tr>
<tr>
<td>DNEL</td>
<td>12.8 mg/kg</td>
<td>human, dermal</td>
<td>consumer (private households)</td>
<td>chronic - systemic effects</td>
</tr>
<tr>
<td>DNEL</td>
<td>1.667 mg/m³</td>
<td>human, inhalatory</td>
<td>consumer (private households)</td>
<td>chronic - systemic effects</td>
</tr>
</tbody>
</table>

Environmental values

Relevant PNECs and other threshold levels

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Environmental compartment</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNEC</td>
<td>0.312 mg/l</td>
<td>freshwater</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>0.0312 mg/l</td>
<td>marine water</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>16.18 mg/l</td>
<td>sewage treatment plant (STP)</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>0.063 mg/kg</td>
<td>freshwater sediment</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>62.6 mg/kg</td>
<td>soil</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>PNEC</td>
<td>0.53 mg/l</td>
<td>water</td>
<td>continuous</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Appropriate engineering controls
General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection
Wear eye/face protection.

Hand protection

<table>
<thead>
<tr>
<th>Material</th>
<th>Material thickness</th>
<th>Breakthrough times of the glove material</th>
</tr>
</thead>
<tbody>
<tr>
<td>NR: natural rubber, latex</td>
<td>these information are not available</td>
<td>these information are not available</td>
</tr>
<tr>
<td>IIR: isobutene-isoprene (butyl) rubber</td>
<td>these information are not available</td>
<td>these information are not available</td>
</tr>
</tbody>
</table>
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.

### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

**Appearance**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>solid</td>
</tr>
<tr>
<td>Form</td>
<td>crystalline</td>
</tr>
<tr>
<td>Colour</td>
<td>white</td>
</tr>
<tr>
<td>Odour</td>
<td>odourless</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>these information are not available</td>
</tr>
</tbody>
</table>

**Other safety parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH (value)</td>
<td>5 - 6 (water: 50 g/l, 20 °C)</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>350 °C</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Flash point</td>
<td>not applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>non-flammable</td>
</tr>
<tr>
<td>Explosion limits of dust clouds</td>
<td>not determined</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Density</td>
<td>1.77 g/cm³ at 20 °C</td>
</tr>
<tr>
<td>Vapour density</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Bulk density</td>
<td>1 - 1.2 g/cm³</td>
</tr>
<tr>
<td>Relative density</td>
<td>these information are not available</td>
</tr>
</tbody>
</table>
### Solubility(ies)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water solubility</td>
<td>766 g/l at 25 °C</td>
</tr>
</tbody>
</table>

### Partition coefficient

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-octanol/water (log KOW)</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>235 °C</td>
</tr>
</tbody>
</table>

### Viscosity

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscosity</td>
<td>not relevant</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td>these information are not available</td>
</tr>
</tbody>
</table>

### Explosive properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosive properties</td>
<td>not explosive</td>
</tr>
</tbody>
</table>

### Oxidising properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxidising properties</td>
<td>shall not be classified as oxidising</td>
</tr>
</tbody>
</table>

### 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:
bas

#### 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

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.

Acute toxicity

Shall not be classified as acutely toxic.

<table>
<thead>
<tr>
<th>Exposure route</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Method</th>
<th>Source</th>
</tr>
</thead>
</table>

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

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.
Based on available data, the classification criteria are not met.

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Method</th>
<th>Source</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>rhynchus mykiss)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Method</th>
<th>Source</th>
<th>Exposure time</th>
</tr>
</thead>
</table>

12.2 Persistence and degradability

Biodegradation
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.
12.6 Other adverse effects
Data are not available.

Endocrine disrupting potential
Not listed.

Remarks
Water hazard class - WHC (Wassergefährdungsklasse): 1 (Slightly hazardous to water)

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
-

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.
 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
not listed

List of substances subject to authorisation (REACH, Annex XIV)
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

Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)
not listed

Explosives precursors which are subject to restrictions
not listed

 SECTION 16: Other information

Indication of changes (revised safety data sheet)

Indication of changes: Section -

Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADN</td>
<td>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)</td>
</tr>
<tr>
<td>ADR</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
<tr>
<td>CLP</td>
<td>Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures</td>
</tr>
<tr>
<td>DGR</td>
<td>danger</td>
</tr>
<tr>
<td>DNEL</td>
<td>Derived No-Effect Level</td>
</tr>
<tr>
<td>EC No</td>
<td>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)</td>
</tr>
</tbody>
</table>
Ammoniumsulfat

Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ce/)</td>
</tr>
</tbody>
</table>
| GHS     | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Na-
|          | tions                                                                                             |
| IATA    | International Air Transport Association                                                          |
| IMDG    | International Maritime Dangerous Goods Code                                                       |
| MARPOL  | International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant") |
| 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 Dangerouses (Regula-
|          | tions concerning the International carriage of Dangerous goods by Rail)                           |
| STEL    | short-term exposure limit                                                                         |
| TWA     | time-weighted average                                                                             |
| vPvB    | very Persistent and very Bioaccumulative                                                          |
| WEL     | workplace exposure limit                                                                          |

Key literature references and sources for data

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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47809 Krefeld
Telephone: ++49 (0) 2151 - 652086 - 0
Telefax: ++49 (0) 2151 - 652086 - 9
E-mail: info@csb-online.de
Website: www.csb-online.de

Disclaimer

This information is based upon the present state of our knowledge.
This SDS has been compiled and is solely intended for this product.