SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product Name: Ammonium sulfate

CAS-No: 7783-20-2
EC-No: 231-984-1
REACH Registration Number: 01-2119455044-46

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

Recommended Use: Flame retardant, Fertilizers, Laboratory Chemicals
Uses advised against: No information available

1.3 Details of the supplier of the safety data sheet

OCI Nitrogen BV
Mijnweg 1
P.O. Box 601
6160 AP Geleen, The Netherlands
Tel: +31 (0) 46 7020111
www.ocinitrogen.com
info.agro@ocinitrogen.com

1.4 Emergency telephone number

National Poisons Information Service (London Centre)
+44 20 7771 5307

Manufacturer: Alert & Care Centre Chemelot (Geleen, The Netherlands)
+31 46 4765555 (24/7)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (1272/2008/EC)
Not classified.

Classification according to EU Directives 67/548/EEC or 1999/45/EC
Not classified.

2.2 Label elements

None.

2.3 Other hazards

Ensure adequate ventilation, especially in confined areas.
SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>EC-No</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>Classification (67/548/EEC)</th>
<th>Classification (1272/2008/EC)</th>
<th>REACH Registration Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium sulfate</td>
<td>231-984-1</td>
<td>7783-20-2</td>
<td>100</td>
<td>-</td>
<td>-</td>
<td>01-2119455044-4</td>
</tr>
</tbody>
</table>

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

**General advice**
No hazards which require special first aid measures.

**Eye contact**
Rinse thoroughly with plenty of water, also under the eyelids. Get medical attention immediately if symptoms occur.

**Skin contact**
Wash off immediately with plenty of water. Remove contaminated clothing and shoes. Get medical attention immediately if symptoms occur.

**Ingestion**
Clean mouth with water, Drink 1 or 2 glasses of water. Do not induce vomiting without medical advice. Get medical attention immediately if symptoms occur.

**Inhalation**
Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately if symptoms occur. Symptoms may be delayed.

**Protection of first-aiders**
Use personal protective equipment. Avoid contact with skin, eyes and clothing.

4.2 Most important symptoms and effects, both acute and delayed

**Main symptoms**
Effects of contact or inhalation may be delayed. Burning feeling and temporary redness, Coughing and/or wheezing.

4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician**
Treat symptomatically. Effects of contact or inhalation may be delayed.
SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media  The product itself does not burn. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Extinguishing media which must not be used for safety reasons  None known.

5.2 Special hazards arising from the substance or mixture

Special hazard  Hazardous decomposition products formed under fire conditions: Sulphur oxides, Nitrogen oxides (NOₓ), ammonia, amines.

5.3 Advice for firefighters

Special protective equipment for fire-fighters  Wear self-contained breathing apparatus and protective suit.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate non-essential personnel. Ensure adequate ventilation. Avoid airborne dust generation, wear personal protective equipment in compliance with national legislation. Avoid contact with skin, eyes and clothing.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.

6.3 Methods and material for containment and cleaning up

Take up mechanically and collect in suitable container for disposal. Avoid dust formation.

6.4 Reference to other sections

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice. Do not enter areas where used or stored until adequately ventilated. Wear personal protective equipment. Do not breathe dust. Do not eat, drink or smoke when using this product.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Keep containers tightly closed in a dry, cool and well-ventilated place. Do not enter areas where used or stored until adequately ventilated. Keep away from direct sunlight, heat, flames and sparks. Incompatible with oxidising agents, alkali metals.

7.3 Specific end use(s)

Exposure Scenario  Not available.

Other information  Not available.
SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure limits

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL)

For: Workers.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Long-term exposure - Systemic effects - Inhalation</th>
<th>Long-term exposure - Systemic effects - Dermal</th>
<th>Acute / short-term exposure - Systemic effects - Inhalation</th>
<th>Acute / short-term exposure - Systemic effects - Dermal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium sulfate</td>
<td>11.167 mg/m³</td>
<td>42.667 mg/kg bw/d</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Predicted No Effect Concentration (PNEC)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Freshwater</th>
<th>Marine water</th>
<th>Intermittent release</th>
<th>Sewage treatment plant</th>
<th>Freshwater sediment</th>
<th>Marine sediment</th>
<th>Soil</th>
<th>Oral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium sulfate</td>
<td>0.312 mg/L</td>
<td>0.0312 mg/L</td>
<td>0.53 mg/L</td>
<td>16.18 mg/L</td>
<td>0.063 mg/kg dw</td>
<td></td>
<td>62.6 mg/kg dw</td>
<td></td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Eye protection

Tightly fitting safety goggles

Hand protection

Protective gloves: Butyl rubber, PVC, Break through time: 4 - 8 hours. Glove thickness: 5 mil.

Skin and body protection

Long sleeved clothing

Respiratory protection

In case of insufficient ventilation wear suitable respiratory equipment: Effective dust mask.

Recommended filter type

P2

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

Environmental Exposure Controls

The product should not be allowed to enter drains, water courses or the soil.
SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state @20°C</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>No information available</td>
</tr>
<tr>
<td>Colour</td>
<td>Off-white / Yellow-brownish</td>
</tr>
<tr>
<td>Odour</td>
<td>Odourless</td>
</tr>
<tr>
<td>pH</td>
<td>5-6 (5% w/w)</td>
</tr>
<tr>
<td>Melting/freezing point</td>
<td>Decomposes @ &gt;235 °C</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>Decomposes @ &gt;235 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability Limits in Air</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>No information available</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.78 (water=1)</td>
</tr>
<tr>
<td>Solubility</td>
<td>7.6 g/l</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>-5.1</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>&gt; 235 °C</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Oxidising Properties</td>
<td>No information available</td>
</tr>
</tbody>
</table>

9.2 Other information

Bulk density: Granulated: 1000 - 1060 kg/m³

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No information available.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Heat, flames and sparks.

10.5 Incompatible materials

Nitrites, alkalis.

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions: Sulphur oxides, nitrogen oxides (NOₓ), ammonia, amines.
**SECTION 11: TOXICOLOGICAL INFORMATION**

### 11.1 Information on toxicological effects

**Acute toxicity**
- **Ingestion**: No known effect.
- **Skin contact**: No known effect.
- **Inhalation**: No known effect.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium sulfate</td>
<td>4250 mg/kg (Rat, OECD 401)</td>
<td>&gt;2000 mg/kg (Rat, OECD 434)</td>
<td>&gt; 900 mg/m^3 (Guinea pig, 8h)</td>
</tr>
</tbody>
</table>

**Skin corrosion/irritation**: Non-irritating (rabbit, OECD 404).

**Serious eye damage/irritation**: Non-irritating. Dust contact with the eyes can lead to mechanical irritation.

**Respiratory or skin sensitisation**: Did not cause sensitisation on laboratory animals (guinea pig).

**Germ cell mutagenicity**: Not known to cause heritable genetic damage (OECD 471, OECD 476, OECD 473).

**Carcinogenicity**: Contains no ingredient listed as a carcinogen, OECD 453: Negative.

**Reproductive toxicity**: Not known to adversely affect reproductive functions and organs. Not known to cause birth defects or have a deleterious effect on a developing fetus.

**STOT-single exposure**: No known effect.

**STOT-repeated exposure**: No known effect.

**Aspiration hazard**: No known effect.
12.1 Toxicity

Contains no substances known to be hazardous for the environment.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Toxicity to algae</th>
<th>Toxicity to fish</th>
<th>Toxicity to microorganisms</th>
<th>Toxicity to daphnia and other aquatic invertebrates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium sulfate</td>
<td>LC50: 460 - 1000 mg/L</td>
<td>Leuciscus idus, 96 h static</td>
<td></td>
<td>EC50: 423 mg/L Daphnia magna, 24 h</td>
</tr>
<tr>
<td></td>
<td>LC50: 250 mg/L</td>
<td>Brachydanio rerio, 96 h flow-through</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LC50: 480 mg/L</td>
<td>Brachydanio rerio, 96 h semi-static</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LC50: 420 mg/L</td>
<td>Brachydanio rerio, 96 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LC50: 18 mg/L Cyprinus carpio, 96 h</td>
<td>Pimephales promelas, 96 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LC50: 100 mg/L</td>
<td>Oncorhynchus mykiss, 96 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LC50: 32.2 - 41.9 mg/L</td>
<td>Oncorhynchus mykiss, 96 h semi-static</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LC50: 5.2 - 8.2 mg/L</td>
<td>Oncorhynchus mykiss, 96 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LC50: 123 - 128 mg/L</td>
<td>Poecilia reticulata, 96 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LC50: 126 mg/L</td>
<td>Poecilia reticulata, 96 h</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

Bioaccumulation is unlikely.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>log Pow</th>
<th>Bioconcentration factor (BCF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium sulfate</td>
<td>-5.1</td>
<td></td>
</tr>
</tbody>
</table>

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB).

12.6 Other adverse effects

No information available.
**SECTION 13: DISPOSAL CONSIDERATIONS**

13.1 Waste treatment methods

Waste from residues / unused products: Dispose of in accordance with local regulations. Should not be released into the environment. Where possible recycling is preferred to disposal or incineration.

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

---

**SECTION 14: TRANSPORT INFORMATION**

According to: ADR, RID, ADN, IMDG, ICAO.

14.1 UN number
Not regulated.

14.2 UN proper shipping name
Not regulated.

14.3 Transport hazard class(es)
Not regulated.

14.4 Packing group
Not applicable.

14.5 Environmental hazards
Not applicable.

14.6 Special precautions for user
Not applicable.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable (Non-hazardous substance).

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**SECTION 15: REGULATORY INFORMATION**

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

Restrictions on use: None.

Other regulations: None.

15.2 Chemical safety assessment
A Chemical Safety Assessment has been carried out for this substance.
SECTION 16: OTHER INFORMATION

Full text of R-phrases referred to under sections 2 and 3
Not applicable

Full text of H-Statements referred to under sections 2 and 3
Not applicable

Abbreviations/acronyms

(E)EC: European Commission
REACH: Registration, Evaluation, Authorisation and Restriction of Chemical substances
STOT: Specific Target Organ Toxicity
PBT: Persistent, Bioaccumulating, Toxic
vPvB: very Persistent and very Bioaccumulating
ADR: Accord européen relatif au transport international des marchandises Dangereuses par Route
RID: Regulations for the International Transport of Dangerous Goods by Rail
ADN: Accord européen relatif au transport international des marchandises Dangereuses par voies de Navigation intérieures
IMDG: International Maritime Dangerous Goods Code
ICAO: International Civil Aviation Organization

Revision Note
Emergency telephone, Predicted No Effect Concentration (PNEC), Toxicological information, Ecotoxicity.

Training Advice
Workers must be trained in the proper use and handling of this product as required under applicable regulations.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer
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