

# Ammonium sulfate

## Safety Data Sheet

according to Regulation (EU) 2015/830

Date of issue: 05/04/2017

Doc No: SDS-903.056/0



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

#### 1.1. Product identifier

|                    |   |
|--------------------|---|
| Product form       | : Substance   |
| Substance name     | : Ammonium sulfate  |
| EC-No.             | : 231-984-1   |
| CAS-No.            | : 7783-20-2   |
| Type of product    | : Pure substance, Hygroscopic substance. Preventive measures apply to the substance in dry state only   |
| Formula            | : (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>   |
| Chemical structure | :   |
| Synonyms           | : actamaster / ammonium sulfate(2:1) / ammonium sulphate / diammonium sulfate / dolamin / mascagnine / mascagnite / mascagnite, natural / sulfuric acid diammonium salt |

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

##### 1.2.1. Relevant identified uses

|                              |  |
|------------------------------|--|
| Use of the substance/mixture | : Dyestuff/pigment: production<br>Fire extinguishing medium<br>Fertilizer<br>Laboratory chemical |
|------------------------------|--|

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

ISOLAB GmbH  
Bahnhofstrasse 10, D-97877  
Wertheim - Germany  
T +49 93 42 912 355 - F +49 93 42 912 357  
[prodsafe@isolab.de](mailto:prodsafe@isolab.de)

#### 1.4. Emergency telephone number

| Country | Organisation/Company  | Address                           | Emergency number | Comment |
|---------|---|-----------------------------------|------------------|---------|
| Germany | Giftnotruf der Charité<br>CBF, Haus VIII (Wirtschaftsgebäude), UG | Hindenburgdamm 30<br>12203 Berlin | +49 30 19240     |         |

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

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

Not classified

#### Adverse physicochemical, human health and environmental effects

No additional information available

#### 2.2. Label elements

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

No labelling applicable

#### 2.3. Other hazards

No additional information available

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

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| Name             | Product identifier                        | %   |
|------------------|---|-----|
| Ammonium sulfate | (CAS-No.) 7783-20-2<br>(EC-No.) 231-984-1 | 100 |

Full text of H-statements: see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

|                                       |  |
|---------------------------------------|--|
| First-aid measures general            | : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. Never give alcohol to drink. |
| First-aid measures after inhalation   | : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.  |
| First-aid measures after skin contact | : Rinse with water. Soap may be used. Take victim to a doctor if irritation persists.  |
| First-aid measures after eye contact  | : Rinse with water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.  |
| First-aid measures after ingestion    | : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Call Poison Information Centre ( <a href="http://www.big.be/antigif.htm">www.big.be/antigif.htm</a> ). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital.  |

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

|                                     |   |
|-------------------------------------|---|
| Symptoms/effects after inhalation   | : AFTER INHALATION OF DUST: Dry/sore throat. Coughing. ON CONTINUOUS EXPOSURE/CONTACT: Irritation of the respiratory tract. |
| Symptoms/effects after skin contact | : Red skin. Slight irritation.  |
| Symptoms/effects after eye contact  | : Slight irritation.  |
| Symptoms/effects after ingestion    | : Vomiting. Nausea. Diarrhoea.  |

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

No additional information available

## SECTION 5: Fire-fighting measures

### 5.1. Extinguishing media

|                                |   |
|--------------------------------|---|
| Suitable extinguishing media   | : Adapt extinguishing media to the environment. |
| Unsuitable extinguishing media | : No unsuitable extinguishing media known.      |

### 5.2. Special hazards arising from the substance or mixture

|                  |  |
|------------------|--|
| Fire hazard      | : DIRECT FIRE HAZARD. Non combustible. INDIRECT FIRE HAZARD. Reactions involving a fire hazard: see "Reactivity Hazard". |
| Explosion hazard | : INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".                                  |

### 5.3. Advice for firefighters

|                                |  |
|--------------------------------|--|
| Precautionary measures fire    | : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows. |
| Firefighting instructions      | : Cool tanks/drums with water spray/remove them into safety. Dilute toxic gases with water spray.  |
| Protection during firefighting | : Heat/fire exposure: compressed air/oxygen apparatus.   |

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

|                                  |  |
|----------------------------------|--|
| Protective equipment             | : Gloves. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. Reactivity hazard: compressed air/oxygen apparatus. Reactivity hazard: gas-tight suit. See "Material-Handling" to select protective clothing. |
| Emergency procedures             | : Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Wash contaminated clothes. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation.                   |
| Measures in case of dust release | : In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.  |

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### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

No additional information available

### 6.3. Methods and material for containment and cleaning up

- For containment : Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray. If reacting: dilute toxic gas/vapour with water spray.
- Methods for cleaning up : Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. See "Material-handling" for suitable container materials. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

### 6.4. Reference to other sections

No additional information available

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Precautions for safe handling : Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Avoid raising dust. Keep away from naked flames/heat. Observe normal hygiene standards. Keep container tightly closed. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

### 7.2. Conditions for safe storage, including any incompatibilities

- Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources.
- Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. (strong) bases. metals. water/moisture.
- Storage area : Store in a dry area. Meet the legal requirements.
- Special rules on packaging : SPECIAL REQUIREMENTS: closing. watertight. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
- Packaging materials : SUITABLE MATERIAL: paper. wood. textile. MATERIAL TO AVOID: copper. zinc. bronze.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

| Ammonium sulfate (7783-20-2) |                                  |   |
|------------------------------|----------------------------------|---|
| Bulgaria                     | Local name                       | Амониев сулфат                            |
| Bulgaria                     | OEL TWA (mg/m <sup>3</sup> )     | 10 mg/m <sup>3</sup>                      |
| Latvia                       | Local name                       | Hroma-amonija sulfāts                     |
| Latvia                       | OEL TWA (mg/m <sup>3</sup> )     | 0.02 mg/m <sup>3</sup>                    |
| Russian Federation           | Local name                       | диАммоний сульфат                         |
| Russian Federation           | OEL Ceiling (mg/m <sup>3</sup> ) | 10 mg/m <sup>3</sup>                      |
| Russian Federation           | Remark (RU)                      | 3 класс опасности - опасное; а (аэрозоль) |

### 8.2. Exposure controls

#### Materials for protective clothing:

GIVE GOOD RESISTANCE: butyl rubber. neoprene. PVC. GIVE LESS RESISTANCE: polyethylene. styrene-butadiene rubber. nitrile rubber/PVC

#### Hand protection:

Gloves

#### Eye protection:

Safety glasses. In case of dust production: protective goggles

#### Skin and body protection:

Protective clothing

#### Respiratory protection:

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Dust production: dust mask with filter type P1

### SECTION 9: Physical and chemical properties

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

|  |   |
|--|---|
| Physical state                             | : Solid                                     |
| Appearance                                 | : Crystalline solid. Powder.                |
| Molecular mass                             | : 132.14 g/mol                              |
| Colour                                     | : Colourless-white. Unpurified: grey-brown. |
| Odour                                      | : Odourless.                                |
| Odour threshold                            | : No data available                         |
| pH   | : 5 (10 %)                                  |
| pH solution                                | : 10 %                                      |
| Relative evaporation rate (butylacetate=1) | : No data available                         |
| Melting point                              | : 280 °C                                    |
| Freezing point                             | : No data available                         |
| Boiling point                              | : Not applicable                            |
| Flash point                                | : Not applicable                            |
| Auto-ignition temperature                  | : Not applicable                            |
| Decomposition temperature                  | : > 280 °C                                  |
| Flammability (solid, gas)                  | : No data available                         |
| Vapour pressure                            | : No data available                         |
| Relative vapour density at 20 °C           | : No data available                         |
| Relative density                           | : 1.8                                       |
| Density                                    | : 1770 kg/m <sup>3</sup>                    |
| Solubility                                 | : Soluble in water.<br>Water: 75.4 g/100ml  |
| Log Pow                                    | : -5.1                                      |
| Viscosity, kinematic                       | : No data available                         |
| Viscosity, dynamic                         | : No data available                         |
| Explosive properties                       | : No data available                         |
| Oxidising properties                       | : No data available                         |
| Explosive limits                           | : No data available                         |

#### 9.2. Other information

|                         |   |
|-------------------------|---|
| Minimum ignition energy | : Not applicable                            |
| SADT                    | : Not applicable                            |
| VOC content             | : 0 %                                       |
| Other properties        | : Hygroscopic. Substance has acid reaction. |

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Decomposes on exposure to temperature rise: release of toxic and corrosive gases/vapours (ammonia, nitrous vapours, sulphur oxides). Reacts with (strong) oxidizers: (increased) risk of fire/explosion. Violent exothermic reaction with (some) bases: release of toxic and corrosive gases/vapours (ammonia, sulphur oxides).

#### 10.2. Chemical stability

Hygroscopic.

#### 10.3. Possibility of hazardous reactions

No additional information available

#### 10.4. Conditions to avoid

No additional information available

#### 10.5. Incompatible materials

No additional information available

#### 10.6. Hazardous decomposition products

No additional information available

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### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity : Not classified

| Ammonium sulfate (7783-20-2) |                  |
|------------------------------|------------------|
| LD50 oral rat                | 2840 mg/kg (Rat) |

Skin corrosion/irritation : Not classified  
pH: 5.5 (1.3 %)

Serious eye damage/irritation : Not classified  
pH: 5.5 (1.3 %)

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).

Ecology - water : Mild water pollutant (surface water). Maximum concentration in drinking water: 0.50 mg/l (ammonium) (Directive 98/83/EC); 250 mg/l (sulfate) (Directive 98/83/EC). Slightly harmful to fishes (LC50(96h) 100-1000 mg/l). Slightly harmful to invertebrates (EC50: 100 - 1000 mg/l). May cause eutrophication. Insufficient data available on ecotoxicity.

| Ammonium sulfate (7783-20-2) |  |
|------------------------------|--|
| LC50 fish 2                  | 250 - 480 mg/l (LC50; 96 h; Brachydanio rerio) |
| EC50 Daphnia 1               | 202 mg/l (EC50; 96 h)                          |

#### 12.2. Persistence and degradability

| Ammonium sulfate (7783-20-2)  |   |
|-------------------------------|---|
| Persistence and degradability | Biodegradability in water: no data available. |

#### 12.3. Bioaccumulative potential

| Ammonium sulfate (7783-20-2) |                                  |
|------------------------------|----------------------------------|
| Log Pow                      | -5.1                             |
| Bioaccumulative potential    | Bioaccumulation: not applicable. |

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Results of PBT and vPvB assessment

No additional information available

#### 12.6. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Product/Packaging disposal recommendations : Precipitate/make insoluble. Remove to an authorized dump. Do not discharge into surface water.

Additional information : LWCA (the Netherlands): KGA category 05. Can be considered as non hazardous waste according to Directive 2008/98/EC.

European List of Waste (LoW) code : 06 03 14 - solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13

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### SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

| ADR                                     | IMDG           | IATA           | ADN            | RID            |
|---|----------------|----------------|----------------|----------------|
| <b>14.1. UN number</b>                  |                |                |                |                |
| Not applicable                          | Not applicable | Not applicable | Not applicable | Not applicable |
| <b>14.2. UN proper shipping name</b>    |                |                |                |                |
| Not applicable                          | Not applicable | Not applicable | Not applicable | Not applicable |
| Not applicable                          | Not applicable | Not applicable | Not applicable | Not applicable |
| <b>14.3. Transport hazard class(es)</b> |                |                |                |                |
| Not applicable                          | Not applicable | Not applicable | Not applicable | Not applicable |
| Not applicable                          | Not applicable | Not applicable | Not applicable | Not applicable |
| <b>14.4. Packing group</b>              |                |                |                |                |
| Not applicable                          | Not applicable | Not applicable | Not applicable | Not applicable |
| <b>14.5. Environmental hazards</b>      |                |                |                |                |
| Not applicable                          | Not applicable | Not applicable | Not applicable | Not applicable |
| No supplementary information available  |                |                |                |                |

### 14.6. Special precautions for user

**- Overland transport**

Not applicable

**- Transport by sea**

Not applicable

**- Air transport**

Not applicable

**- Inland waterway transport**

Not applicable

**- Rail transport**

Not applicable

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

### SECTION 15: Regulatory information

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

##### 15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Ammonium sulfate is not on the REACH Candidate List

Ammonium sulfate is not on the REACH Annex XIV List

VOC content : 0 %

##### 15.1.2. National regulations

###### Germany

VwVwS Annex reference : Water hazard class (WGK) 1, low hazard to waters (Classification according to VwVwS, Annex 1 or 2; ID No. 296)

WGK remark : Classification water polluting in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 2)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

###### Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

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NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

### 15.2. Chemical safety assessment

No additional information available

## SECTION 16: Other information

Abbreviations and acronyms:

|       |   |
|-------|---|
| ADN   | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways   |
| ADR   | European Agreement concerning the International Carriage of Dangerous Goods by Road               |
| ATE   | Acute Toxicity Estimate   |
| BCF   | Bioconcentration factor   |
| CLP   | Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008                       |
| EC50  | Median effective concentration  |
| IARC  | International Agency for Research on Cancer   |
| IATA  | International Air Transport Association   |
| IMDG  | International Maritime Dangerous Goods  |
| LC50  | Median lethal concentration   |
| LD50  | Median lethal dose  |
| PBT   | Persistent Bioaccumulative Toxic  |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 |
| RID   | Regulations concerning the International Carriage of Dangerous Goods by Rail                      |
| SDS   | Safety Data Sheet   |
| vPvB  | Very Persistent and Very Bioaccumulative  |

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

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*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*