Ammonium sulfate crystalline

Safety Data Sheet

according to Regulation (EC) No. 453/2010

Revision date: 03/05/2011 Supersedes: Version: 1.0

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

1.1. Product identifier

Chemical type	:	Substance
Substance name	:	Ammonium sulphate
Trade name	:	Ammonium sulfate crystalline
EC no	:	231-984-1
CAS No.	:	7783-20-2
REACH registration No.	:	01-2119455044-46
IUPAC name	:	diammonium sulfate
Formula	:	H3N.1/2H2O4S

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

1.2.1. Relevant identified uses

Use of the substance/preparation : Fertilizers
Intermediate
Laboratory chemicals
Flame retardants and fire preventing agents
pH-regulating agents
Pharmaceuticals
Cosmetics
Herbicide.
Insecticide.
Fungicide

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Manufacturer:
Joint-stock company "Kuibyshev Azot"
6, Novozavodskaya, Toliatti, Samara Region
445007 - Russia
T +7 (8482) 561101, 561301 - F +7 (8482) 561301
E-mail: office@kuazot.ru
http://www.kuazot.ru/

Only representative:

ITS Testing Services (UK) Ltd
Caleb Brett House
734 London Road
RM20 3NL - West Thurrock, Grays
Essex, United Kingdom
T +44(0)161 228 0111 - F +44(0)161 933 4001
E-mail: ies14.reach@intertek.com

1.4. Emergency telephone number

Emergency number : +7 (8482) 561101

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Not classified

Classification according to Directive 67/548/EEC or 1999/45/EC

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

Name	Product identifier	%	Classification according to Directive 67/548/EEC
Ammonium sulphate	(CAS No.) 7783-20-2 (EC no) 231-984-1 (REACH-no) 01-2119455044-46	100	Not classified

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Ammonium sulphate	(CAS No.) 7783-20-2 (EC no) 231-984-1 (REACH-no) 01-2119455044-46	100	Not classified

Full text of R-, H- and EUH-phrases: see section 16.

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Remove contaminated clothing immediately.

First-aid measures after inhalation : Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.

First-aid measures after skin contact : Rinse immediately with plenty of water (for at least 15 minutes). Wash with water and soap. Remove contaminated clothing and shoes. Seek medical advice. Wash clothing before re-using. Thoroughly clean shoes before re-using.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Retract eyelids often. Seek immediate medical advice.

First-aid measures after ingestion : If swallowed, rinse mouth with water (only if the person is conscious). Never give anything by mouth to an unconscious person. Consult a doctor/medical service if you feel unwell.

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

Symptoms/injuries : Irritating to eyes and respiratory system. May cause skin irritation.

Symptoms/injuries after inhalation : Inhalation of dust may cause irritation of the respiratory system. Inhalation may cause: irritation, cough, short breathing.

Symptoms/injuries after skin contact : May cause skin irritation. irritation (itching, redness, blistering). Prolonged or repeated contacts with the skin may cause dermatitis.

Symptoms/injuries after eye contact : May cause irritation to the eyes. redness, pain, mild eye irritation.

Symptoms/injuries after ingestion : May cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Chronic symptoms : Permanent eye damage. May cause lung damage if swallowed.

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

Risk of : Pulmonary edema. Symptoms may be delayed. Specific treatment is necessary. Pulmonary edema prophylaxis.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: : For small fire : Carbon dioxide. Powder. Water spray. For large fire : Water spray. Alcohol resistant foam.

Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Not expected to be a fire/explosion hazard under normal conditions of use. In case of fire it can release. Gaseous ammonia.

Explosion hazard : Explosive when mixed with oxidizing substances.

Reactivity : No data available.

5.3. Advice for firefighters

Precautionary measures fire : Use extinguishing media appropriate for surrounding fire.

Protective equipment for firefighters : Use self-contained breathing apparatus and chemically protective clothing.

Other information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Mechanically ventilate the spillage area. For further information refer to section 8 : Exposure-controls/personal protection"".

6.1.1. For non-emergency personnel

Protective equipment : Refer to section 8.

6.1.2. For emergency responders

Protective equipment : Refer to section 8.

6.2. Environmental precautions

Avoid discharge to the environment. Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Provide adequate ventilation. Sweep or shovel spills into appropriate container for disposal. Dilute residue with water.

6.4. Reference to other sections

Refer to sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Provide adequate ventilation. Avoid creating or spreading dust. Avoid contact with skin and eyes. Avoid inhalation of product. Refer to section 8.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Always wash hands and face immediately after handling this product, and once again before leaving the workplace. Remove all contaminated clothing and footwear. Wash contaminated clothing prior to re-use. Avoid contact with skin and eyes.

7.2. Conditions for safe storage, including any incompatibilities

Storage condition(s) : Keep container tightly closed in a cool, well-ventilated place. Protect containers against damage. Store separately from oxidising agents and strongly alkaline and strongly acidic materials. keep away from incompatible materials. Refer to Section 10 on Incompatible Materials.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ammonium sulfate crystalline (7783-20-2)		
Germany	TRGS 900 Occupational exposure limit value (mg/m³)	10 mg/m³
The Netherlands	MAC TGG 8H (mg/m³)	10 mg/m³
United Kingdom	WEL TWA (mg/m³)	10 mg/m³

DNEL/PNEC

DNEL/DMEL			**Exposure routs**	**Exposure frequency**	**Critical component**	**Remark**
Worker		**Consumer**				
Industry	**Professional**					
N/A	N/A	N/A	Oral	Short term (acute)	N/A	None
N/A	N/A	6.4 mg/kg bw/day		Long term (repeated)		
N/A	N/A	N/A	Dermal	Short term (acute)		
42.67 mg/kg bw/day	N/A	12.8 mg/kg bw/day		Long term (repeated)		
N/A	N/A	N/A	Inhalation	Short term (acute)		
11.17 mg/m³	N/A	1.67 mg/m³		Long term (repeated)		

PNEC aqua (freshwater): 0.312 mg/L
PNEC aqua (marine water): 0.0312 mg/L
PNEC aqua (intermittent releases): 0.53 mg/L
PNEC for sewage treatment plant: 16.18 mg/L
PNEC sediment: 0.063 mg/L
PNEC soil: 62.6 mg/kg soil dw
PNEC oral (secondary poisoning): No potential for bioaccumulation

8.2. Exposure controls

Appropriate engineering controls : Ensure adequate ventilation.

Hand protection : protective gloves.

Eye protection	:	tightly fitting safety goggles.
Skin and body protection	:	Wear suitable protective clothing.
Respiratory protection	:	suitable respiratory equipment (breathing apparatus with filter).

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Appearance	:	Crystalline solid.
Molecular mass	:	132.14 g/mol
Colour	:	white. light yellow. pink.
Odour	:	Odourless.
Odour threshold	:	No data available
pH	:	No data available
Melting point	:	> 280 °C
Solidification point	:	Not applicable
Boiling point	:	Not applicable
Flash point	:	Not applicable
Relat. evapor. rate comp. to butylacetate	:	No data available
Flammability (solid, gas)	:	Not flammable.
Explosive limits	:	No data available
Vapour pressure	:	No data available
Relative vapour density at 20 °C	:	No data availabl e
Relative density	:	1.769 g/cm³ at 20 °C
Solubility	:	Soluble in water. Insoluble in oils/fats. Water: 767 g/l Approximate (@ 25ºC)
Log Pow	:	No data available
Self ignition temperature	:	Not applicable
Decomposition temperature	:	> 280 °C
Viscosity, kinematic	:	Not applicable
Viscosity, dynamic	:	Not applicable
Explosive properties	:	not explosive.
Oxidising properties	:	Non oxidizing.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions of use.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

No data available.

10.5. Incompatible materials

organic materials. acids. alkalis.

10.6. Hazardous decomposition products

At temperatures of 235 °C can be emitted: ammonia.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Ammonium sulfate crystalline (7783-20-2)	
LD50 oral rat	2000-4250 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 1000 mg/m³ (8h/day)
LC50 inhalation guinea pigs	> 900 mg/m³ (8h/day)

Skin corrosion/irritation	:	Not irritating
Serious eye damage/irritation	:	Not irritating
Respiratory or skin sensitisation	:	Not sensitizing
Germ cell mutagenicity	:	Negative
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified
Specific target organ toxicity (single exposure)	:	Not classified
Specific target organ toxicity (repeated exposure)	:	Not classified

Ammonium sulfate crystalline (7783-20-2)	
NOAEL (oral,rat,90 days)	256 mg/kg bodyweight/day
NOAEC (inhalation,rat,dust/mist/fume,2 weeks)	300 mg/l/6h/day mg/m³ (8h/day)
NOAEL (Effects on fertility, oral, rat)	1500 mg/kg bw/day
NOAEL (Developmental toxicity, oral, rat)	1500 mg/kg bw/day

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ammonium sulfate crystalline (7783-20-2)	
LC50 fish	> 53 mg/l (96 hours)
EC50 Daphnia	> 121.7 mg/l (48 hours)
ErC50 (algae)	2700 mg/l (18 days)
EC10 (Lepomis macrochirus)	5.29 mg/L (30 days)
EC10 (Hyalella azteca)	3.12 mg/L (10 weeks)

12.2. Persistence and degradability

Ammonium sulfate crystalline (7783-20-2)	
Persistence and degradability	Not applicable. The substance is inorganic.
Hydrolysis	In aqueous solution, ammonium sulfate is completely dissociated into the ammonium ion (NH4+) and the sulfate anion (SO4 2-). Hydrolysis of ammonium sulfate does not occur.

12.3. Bioaccumulative potential

Ammonium sulfate crystalline (7783-20-2)	
Log Kow	- 5.1
	Based on the high water solubility and the ionic nature, ammonium sulfate is not expected to adsorb or bioaccumulate to a significant extent. In addition, due to thelog Kow of –5.1 bioaccumulation is not expected.

12.4. Mobility in soil

Ammonium sulfate crystalline (7783-20-2)	
Ecology - soil	In soil, ammonium sulfate is mineralized fairly rapidly, and subsequently nitrified
	Ammonia from ammonium sulfate decomposition can be released from soils, especially if applied fertiliser is not covered by soil. Ammonium remaining in soil is largely adsorbed onto negatively charged clayparticles, and will undergo nitrification and denitrification as part ofthe nitrogen cycle and be taken up by plants via nitrogen fixation (WHO,1986). Sulfate can also be retained in soil, both by incorporation into organic matter (e. g. as sulfate esters of humic acids) and adsorbed tosoil particles such as hydrous iron and aluminum sesquioxides (EPA, 2002).
	Based on the high water solubility a low geoaccumulation potential and high mobility in soil is to be expected.

12.5. Results of PBT and vPvB assessment

Ammonium sulfate crystalline (7783-20-2)	
Results of PBT assessment	The PBT and vPvB criteria do not apply to inorganic substances

12.6. Other adverse effects

Other adverse effects : Avoid undiluted product to come into sewer or superficial water.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations : Prevent entry to sewers and public waters.

Waste disposal recommendations : Do not remove as household garbage. Recycle product or dispose properly. Comply with applicable local, national and international regulation.

SECTION 14: Transport information

Not a dangerous good in sense of transport regulations.

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No additional information available

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

CSA has not been carried out

SECTION 16: Other information

Sources of Key data	:	MSDS.
Abbreviations and acronyms	:	ACGIH (American Conference of Governement Industrial Hygienists). ASTM - American Society for Testing and Materials . CAS - Chemical Abstracts Service. CAS (Chemical Abstracts Service) number. CLP - Classification, Labelling and Packaging. CSR - Chemical Safety Report. DIN - Deutsches Institut für Normung eV (German Institute for Standardization). EC - European Community. EEC - European Economic Community. FRP: fiberglass-reinforced plastics. GESTIS: Gefahrstoffdaten banken (Database on hazardous substances). GHS - Globally Harmonised System. GPPS: general purpose polystyrenes. HCS - Hazard Communication Standard. HIPS: high impact polystyrenes. HMIS - Hazardous Materials Identification System. IARC (International Agency for Research on Cancer). MSDS - Material Safety Data Sheet. OSHA - Occupational Safety and Health Administration. Overland transport (ADR). PVA (Polyvinyl alcohol). PVC (Polyvinyl chloride). REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals. SDS - Safety Data Sheet . UP: Unsaturated polyester. VCI - volatile corrosion inhibitor. VE: epoxy vinyl ester.

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.