1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Ammonium sulphate technical

Substance name: Ammonium sulphate

CAS-No.: 7783-20-2

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

Recommended use(s): fertilizer

Non-recommended use(s): None known.

1.3. Details of the supplier of the safety data sheet

Evonik Industries AG

1.4. Emergency telephone number

+49 6151 18 43 42

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

This substance is not classified according to GHS

GHS-Classification *As per UN-GHS*

Not applicable.

2.2. Label elements *As per UN-GHS*

Not applicable.

2.3. Other hazards

None known

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Hazardous Ingredients As per UN-GHS

'Component	CAS-No.	Content	Hazard class / Hazard category / Hazard statement
ammonium sulphate	7783-20-2	>= 95.0 %	Not applicable.

3.2. Mixtures

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4. FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation	Move subject to fresh air and keep him calm. In case of discomfort: Supply with medical care.
Skin contact	Wash off immediately with soap and water. If skin irritation occurs consult a physician.
Eye contact	Flush eyes thoroughly with a large amount of water and consult a physician.
Ingestion	Rinse out mouth and give plenty of water to drink. See a physician.

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

None known

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

no

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media: none required

5.2. Special hazards arising from the substance or mixture

Product itself is non-combustible; Fire extinguishing method of surrounding areas must be discussed. Products or compounds possibly released in case of fire: nitrogen oxides sulphurous oxides

5.3. Advice for firefighters

Wear self-contained breathing apparatus.

Precipitate exiting gases / vapors with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Use personal protective clothing. Use breathing apparatus if exposed to vapours/dust/mist/aerosol.

6.2. Environmental precautions

Prevent product from getting into drains/surface water/groundwater.

6.3. Methods and material for containment and cleaning up

Take up mechanically. Dispose of in accordance with regulations.

6.4. Reference to other sections

For personal protection see section 8.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Safe handling advice	Keep container tightly closed. Avoid dust formation.
Advice on protection against fire and explosion	No special precautions required.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	Storage: dry.
Advice on common storage	Do not store together with alkalies.

7.3. Specific end use(s)

no

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

see section 8.2.

8.2. Exposure controls

For monitoring procedures refer for instance to "Empfohlene Analysenverfahren für Arbeitsplatzmessungen", Schriftenreihe der Bundesanstalt für Arbeitsschutz and "NIOSH Manual of Analytical Methods", National Institute for Occupational Safety and Health

Protective measures	Do not inhale dust.
Hygiene measures	Store work clothing separately. Follow the usual good standards of occupational hygiene. Take off all contaminated clothing immediately. Clean skin thoroughly after work; apply skin cream.
Respiratory protection	respiratory protection in case of dust formation
Hand protection	protective gloves against mechanical risks according to EN 388
General information	Gloves should be replaced regularly, especially after extended contact with the product. For each work-place a suitable glove type has to be selected.
Eye protection	tightly fitting goggles

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Form	crystalline
Colour	white to yellowish
Odour	odourless
Melting Point	>300 °C
Boiling Temperature	not applicable(decomposition)
Flash point	not applicable
Ignition temperature	not applicable
Autoinflammability	not applicable
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Vapour pressure	not applicable
Bulk density	ca. 1,100 kg/m3 (20 °C)
Solubility in water	754 g/l (20 °C)
pH	ca. 5 (100 g/l) (20 °C)
n-Octanol/water partition coefficient	log Pow -5.1, (measured) source: literature
Viscosity (dynamic)	not applicable

9.2. Other information

none

10. STABILITY AND REACTIVITY

10.1. Reactivity

see section 10.2.

10.2. Chemical stability

>235 °C initial temperature of decomposition

10.3. Possibility of hazardous reactions

Evolution of ammonia under influence of alkalies.
Reactions with nitrites.

10.4. Conditions to avoid

This material is considered stable.

10.5. Incompatible materials

alkali nitrite

10.6. Hazardous decomposition products

ammonia

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

toxicokinetics, metabolism and distribution	no evidence for hazardous properties	
Acute Oral Toxicity	LD50 rat	> 2,000 mg/kg
Acute Inhalational Toxicity	LC50 rat	> 1 mg/l
Acute Dermal Toxicity	LD50 rat	> 2,000 mg/kg
Caustic burning / irritation of skin	rabbit,	not irritating
Serious eye damage/eye irritation	rabbit,	not irritating
Respiratory/skin sensitization	guinea pig, GPMT, (analogy)	not sensitizing
Aspiration hazard	not applicable	
Mutagenicity assessment	not mutagenic in bacteria and mammalian cells *in vitro*	
Carcinogenicity	non-carcinogenic	
Reprotoxicity / teratogenicity	No indications of toxic effects were observed in reproduction studies in animals.	
Human health hazard assessment	CMR: no	
Specific Target Organ Toxicity - Single exposure	no evidence for hazardous properties	
Specific Target Organ Toxicity - Repeated exposure	no evidence for hazardous properties	
Toxicity on Repeated Administration	rat, in diet, 52 Weeks	**NOAEL** 256 mg/kg

General information	Avoid skin and eye contact and inhalation of product dust/aerosols.

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Hazardous to the aquatic environment	Acute aquatic toxicity category 3 (UN-GHS)	
Aquatoxicity, fish	LC50 Oncorhynchus mykiss, rainbow trout, EPA Methode, 96 h	53 mg/l
Aquatoxicity, invertebrates	EC50 Daphnia magna, USA EPA, 48 h	169 mg/l
Aquatoxicity, algae / aquatic plants	EC50 Chlorella vulgaris, statis, 18 d	2,700 mg/l

12.2. Persistence and degradability

Biodegradability	The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Bioaccumulation	Does not bioaccumulate.

12.4. Mobility in soil

Mobility	no evidence for hazardous properties

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment	PBT: no vPvB: no

12.6. Other adverse effects

General Information	Prevent substance from entering soil, natural bodies of water and sewer systems.

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Product	Waste is non-hazardous. It should be disposed of in accordance with the regulations after consultation of the competent local authorities and the disposal company in a suitable and licensed facility.
Uncleaned packaging	Contaminated packaging should ideally be emptied; it can then be recycled after having been decontaminated. Packaging which cannot be decontaminated should be disposed of like the material. Packaging that cannot be cleaned should be disposed of professionally. Uncontaminated packaging may be taken for recycling.

14. TRANSPORT INFORMATION

14.1. UN number

see section 14.2.

14.2. UN proper shipping name

Land transport ADR/GGVSEB
Not dangerous according to transport regulations.

Land transport RID/GGVSEB
Not dangerous according to transport regulations.

Inland waterway transport ADN/GGVSEB (Germany)
Not dangerous according to transport regulations.

Shipment by sea IMDG/GGVSee
Not dangerous according to transport regulations.

Air transport ICAO/IATA
Not dangerous according to transport regulations.

14.3. Transport hazard class(es)

see section 14.2.

14.4. Packing group

see section 14.2.

14.5. Environmental hazards

if not mentioned in Point 14.2 then it does not apply

14.6. Special precautions for user

see section 14.2.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

for transportapproval see regulatory information

15. REGULATORY INFORMATION

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

Classification as per Directive 67/548/EC or Directive 1999/45/EC

Labelling in accordance with EC directives	Not applicable.

National legislation

Status of Registration

REACH (EU)	registered
TSCA (USA)	listed or exempted
DSL (CDN)	listed or exempted
AICS (AUS)	listed or exempted
METI (J)	listed or exempted
ECL (KOR)	listed or exempted
PICCS (RP)	listed or exempted
IECSC (CN)	listed or exempted

16. OTHER INFORMATION

Other information	none
References	relevant manuals and publications own examinations own toxicological and ecotoxicological studies toxicological and ecotoxicological studies of other manufacturers SIAR OECD-SIDS RTK public files

Places marked by || have been amended from the last version.

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