

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 31.07.2018

Version 9.3

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

1.1 Product identifier

Catalogue No.	101217
Product name	Ammonium sulfate for analysis EMSURE® ACS,ISO,Reag. Ph Eur
REACH Registration Number	01-2119455044-46-XXXX
CAS-No.	7783-20-2

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

Identified uses	Reagent for analysis For additional information on uses please refer to the Merck Chemicals portal (www.merckgroup.com).
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1.3 Details of the supplier of the safety data sheet

Company	Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department	LS-QHC * e-mail: prodsafe@merckgroup.com

1.4 Emergency telephone number	Please contact the regional company representation in your country.
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SECTION 2. Hazards identification

2.1 Classification of the substance or mixture

This substance is not classified as dangerous according to European Union legislation.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.3 Other hazards

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101217
Product name Ammonium sulfate for analysis EMSURE® ACS,ISO,Reag. Ph Eur

None known.

SECTION 3. Composition/information on ingredients

3.1 Substance

Formula	(NH ₄) ₂ SO ₄	H ₈ N ₂ O ₄ S (Hill)
EC-No.	231-984-1	
Molar mass	132,14 g/mol	

Remarks	No disclosure requirement according to Regulation (EC) No. 1907/2006.
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3.2 Mixture

Not applicable

SECTION 4. First aid measures

4.1 Description of first aid measures

After inhalation: fresh air.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

After eye contact: rinse out with plenty of water. Remove contact lenses.

After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

4.2 Most important symptoms and effects, both acute and delayed

The following applies to ammonium salts in general: after swallowing: local irritation symptoms, nausea, vomiting, diarrhoea. Systemic effect: after the uptake of very large quantities: drop in blood pressure, collapse, CNS disorders, spasms, narcotic conditions, respiratory paralysis, haemolysis.

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101217

Product name Ammonium sulfate for analysis EMSURE® ACS,ISO,Reag. Ph Eur

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Not combustible.

Ambient fire may liberate hazardous vapours.

Fire may cause evolution of:

nitrogen oxides, Sulphur oxides

5.3 Advice for firefighters

Special protective equipment for firefighters

In the event of fire, wear self-contained breathing apparatus.

Further information

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

6.2 Environmental precautions

Do not empty into drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101217

Product name Ammonium sulfate for analysis EMSURE® ACS,ISO,Reag. Ph Eur

6.4 Reference to other sections

Indications about waste treatment see section 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Observe label precautions.

Hygiene measures

Change contaminated clothing. Wash hands after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed. Dry.

Recommended storage temperature see product label.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101217

Product name Ammonium sulfate for analysis EMSURE® ACS,ISO,Reag. Ph Eur

Derived No Effect Level (DNEL)

Worker DNEL, longterm	Systemic effects	inhalation	11,17 mg/m ³
Worker DNEL, longterm	Systemic effects	dermal	42,67 mg/kg Body weight
Consumer DNEL, longterm	Systemic effects	inhalation	1,67 mg/m ³
Consumer DNEL, longterm	Systemic effects	dermal	12,8 mg/kg Body weight
Consumer DNEL, longterm	Systemic effects	oral	6,4 mg/kg Body weight

Predicted No Effect Concentration (PNEC)

PNEC Fresh water	0,312 mg/l
PNEC Fresh water sediment	0,063 mg/kg
PNEC Marine water	0,0312 mg/l
PNEC Aquatic intermittent release	0,53 mg/l
PNEC Sewage treatment plant	16,18 mg/l
PNEC Soil	62,6 mg/kg

8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Safety glasses

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101217

Product name Ammonium sulfate for analysis EMSURE® ACS,ISO,Reag. Ph Eur

Hand protection

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Respiratory protection

required when dusts are generated.

Recommended Filter type: Filter P 1 (acc. to DIN 3181) for solid particles of inert substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls

Do not empty into drains.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form solid

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101217
Product name Ammonium sulfate for analysis EMSURE® ACS,ISO,Reag. Ph Eur

Colour	colourless
Odour	odourless
Odour Threshold	Not applicable
pH	No information available.
Melting point	(decomposition), Not applicable
Boiling point/boiling range	Not applicable
Flash point	does not flash
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapour pressure	< 1 Pa at 25 °C
Relative vapour density	Not applicable
Density	1,77 g/cm ³ at 20 °C
Relative density	No information available.
Water solubility	754 - 764 g/l at 20 °C

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101217
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Partition coefficient: n-octanol/water Not applicable for inorganic substances

Auto-ignition temperature No information available.

Decomposition temperature > 235 °C

Viscosity, dynamic No information available.

Explosive properties Not classified as explosive.

Oxidizing properties none

9.2 Other data

Ignition temperature Not applicable

Bulk density ca.850 kg/m³

SECTION 10. Stability and reactivity

10.1 Reactivity

See section 10.3

10.2 Chemical stability

hygroscopic

10.3 Possibility of hazardous reactions

Exothermic reaction with:

chlorates, with, heat

nitrates, with, Heat

Risk of explosion with:

chlorates, with, Acids

nitrates, with, Potassium

nitrates, with, Acids

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101217

Product name Ammonium sulfate for analysis EMSURE® ACS,ISO,Reag. Ph Eur

nitrites, sodium hypochlorite

Generates dangerous gases or fumes in contact with:

alkalines, Possible formation of: Ammonia

10.4 Conditions to avoid

Strong heating (decomposition).

10.5 Incompatible materials

no information available

10.6 Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

LD50 Rat: 4.250 mg/kg

OECD Test Guideline 401

Acute inhalation toxicity

This information is not available.

Acute dermal toxicity

LD50 Rat: > 2.000 mg/kg

OECD Test Guideline 434

Skin irritation

Rabbit

Result: No irritation

(IUCLID)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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Eye irritation

Rabbit

Result: No eye irritation

(IUCLID)

Sensitisation

This information is not available.

Germ cell mutagenicity

Genotoxicity in vitro

Ames test

Result: negative

Method: OECD Test Guideline 471

Mutagenicity (mammal cell test): chromosome aberration.

Result: negative

(IUCLID)

Carcinogenicity

This information is not available.

Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

Specific target organ toxicity - single exposure

This information is not available.

Specific target organ toxicity - repeated exposure

This information is not available.

Aspiration hazard

This information is not available.

11.2 Further information

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101217

Product name Ammonium sulfate for analysis EMSURE® ACS,ISO,Reag. Ph Eur

The following applies to ammonium salts in general: after swallowing: local irritation symptoms, nausea, vomiting, diarrhoea. Systemic effect: after the uptake of very large quantities: drop in blood pressure, collapse, CNS disorders, spasms, narcotic conditions, respiratory paralysis, haemolysis.

However, when the product is handled appropriately, hazardous effects are unlikely to occur.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

12.1 Toxicity

Toxicity to fish

LC50 *Oncorhynchus mykiss* (rainbow trout): 53 mg/l; 96 h

Analytical monitoring: yes

(ECHA)

Toxicity to daphnia and other aquatic invertebrates

static test EC50 *Ceriodaphnia* (water flea): 121,7 mg/l; 48 h

Toxicity to algae

Growth rate ErC50 *Chlorella vulgaris* (Fresh water algae): 2.700 mg/l; 18 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

semi-static test EC10 *Daphnia* (water flea): 3,12 mg/l; 70 d

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water

Not applicable for inorganic substances

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

12.6 Other adverse effects

Additional ecological information

Biological effects:

Fertilising effect possible.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101217
Product name Ammonium sulfate for analysis EMSURE® ACS,ISO,Reag. Ph Eur

Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

Waste treatment methods

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14. Transport information

Land transport (ADR/RID)

14.1 - 14.6 Not classified as dangerous in the meaning of transport regulations.

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

14.1 - 14.6 Not classified as dangerous in the meaning of transport regulations.

Sea transport (IMDG)

14.1 - 14.6 Not classified as dangerous in the meaning of transport regulations.

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

Not relevant

SECTION 15. Regulatory information

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

EU regulations

Major Accident Hazard SEVESO III
Legislation Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer not regulated

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 101217
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Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC not regulated

Substances of very high concern (SVHC) This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of $\geq 0.1\%$ (w/w).

National legislation

Storage class 10 - 13

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Regional representation

This information is given on the authorised Safety Data Sheet for your country.

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.