

SAFETY DATA SHEET



according to Regulation (EC) No 1907/2006 (REACH) as amended

Ammonium sulfate

Creation date 01st June 2021
Revision date 30th August 2024 Version 1.3

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

1.1. Product identifier
Substance / mixture Ammonium sulfate
Chemical name substance
CAS number Ammonium sulfate
EC (EINECS) number 7783-20-2
Registration number 231-984-1
01-2119455044-46-0000

1.2. Relevant identified uses of the substance or mixture and uses advised against
Substance's intended use

Food supplement. Special applications.

Substance uses advised against

1.3. Details of the supplier of the safety data sheet

Supplier

Name or trade name Macco Organiques, s.r.o.
Address Zahradní 1938/46c, Bruntál 1, 792 01
Czech Republic
Identification number (CRN) 26819210
VAT Reg No CZ26819210
Phone +420 555 530 300
E-mail macco@macco.cz

Competent person responsible for the safety data sheet

Name Petr Ševčík
E-mail petr.sevcik@macco.cz

1.4. Emergency telephone number
European emergency number: 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification of the substance in accordance with Regulation (EC) No 1272/2008

The substance is not classified as dangerous according to Regulation (EC) No 1272/2008.

Most serious adverse physico-chemical effects

Not specified.

Most serious adverse effects on human health and the environment

Not specified.

2.2. Label elements

Signal word

none

2.3. Other hazards

The substance does not have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605. Substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH) as amended.

SECTION 3: Composition/information on ingredients

3.1. Substances

Chemical characterization

The substance specified below.

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note
CAS: 7783-20-2 EC: 231-984-1 Registration number: 01-2119455044-46-0000	substance main component Ammonium sulfate	100	not classified as dangerous	1

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Notes

1 The use of the substance is restricted by Annex XVII of REACH Regulation

Full text of all classifications and hazard statements is given in the section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Take care of your own safety. In the event of unconsciousness, do not provide food by mouth. If any health problems are manifested or if in doubt, inform a doctor and show him information from this safety data sheet.

If inhaled

Terminate the exposure immediately; move the affected person to fresh air. In life threatening conditions first of all provide resuscitation of the affected person and ensure medical assistance.

If on skin

Remove contaminated clothes. And wash it before reuse. Rinse skin with water or shower. Soap, soap solution or shampoo should be used if there is no skin injury.

If in eyes

Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed); remove contact lenses immediately if worn by the affected person. No neutralization should be performed in any case! Provide medical treatment, specialized if possible.

If swallowed

Rinse out the mouth with clean water. DO NOT INDUCE VOMITING! If the affected person vomits, make sure to prevent inhalation of the vomit (as there is a danger of lung damage after inhalation of these liquids in the airways also in infinitesimal amount). In the event of issues, find medical help.

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

If inhaled

May cause respiratory irritation.

If on skin

Irritation, itching, redness.

If in eyes

Not expected.

If swallowed

Nausea, stomach pain, vomiting, diarrhoea.

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

Symptomatic treatment.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Alcohol-resistant foam, carbon dioxide, powder, water spray jet, water mist. Accommodate extinguishing components to the location of fire.

Unsuitable extinguishing media

Not defined.

5.2. Special hazards arising from the substance or mixture

At high temperatures, decomposition occurs to form gaseous ammonia, nitrous oxides and sulfur dioxide.

5.3. Advice for firefighters

Self-Contained Breathing Apparatus (SCBA) with chemical resistant gloves. Use a self-contained breathing apparatus and full-body protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Follow the instructions in the Sections 7 and 8. Use personal protective equipment for work. Do not inhale dust. Provide sufficient ventilation. Avoid dust formation.

6.2. Environmental precautions

Prevent contamination of the soil and entering surface or ground water. In the event of substantial pollution, contact respective authorities and wastewater treatment plants.

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6.3. Methods and material for containment and cleaning up

Place the product mechanically in an appropriate manner. Dispose of the collected material according to the instructions in the section 13. After removal of the product, wash the contaminated site with plenty of water.

6.4. Reference to other sections

See the Section 7, 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Use personal protective equipment as per Section 8. Prevent contact with skin and eyes. Do not eat, drink or smoke when using this product. Wash hands and exposed parts of the body thoroughly after handling. Observe valid legal regulations on safety and health protection.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose.

7.3. Specific end use(s)

not available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Not specified.

DNEL

Ammonium sulfate			
Workers / consumers	Route of exposure	Value	Effect
Consumers	Dermal	12.8 mg/kg bw/day	Chronic effects systemic
Consumers	Inhalation	1.667 mg/m ³	Chronic effects systemic
Consumers	Oral	6.4 mg/kg bw/day	Chronic effects systemic
Workers	Dermal	42.667 mg/kg bw/day	Chronic effects systemic
Workers	Inhalation	11.167 mg/m ³	Chronic effects systemic

PNEC

Ammonium sulfate	
Route of exposure	Value
Drinking water	312 µg/l
Water (intermittent release)	530 µg/l
Marine water	31.2 µg/l
Microorganisms in sewage treatment	16.18 mg/l
Freshwater sediment	0.063 mg/kg of dry substance of sediment
Soil (agricultural)	62.6 mg/kg of dry substance of soil

8.2. Exposure controls

Do not eat, drink and smoke during work. Follow the usual measures intended for health protection at work and especially for good ventilation. Provide showers and eye wash possibility. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

Eye/face protection

Protective goggles or face shield (based on the nature of the work performed).

Skin protection

When handling in long-term or repeatedly, use protective gloves. EN ISO 374-1. Other protection: protective workwear. Contaminated skin should be washed thoroughly.

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Respiratory protection

Use a mask with anti-dust filter when the exposition limits of the substances are exceeded or at the place with insufficient ventilation. Respirator.

Thermal hazard

Not available.

Environmental exposure controls

Observe usual measures for protection of the environment, see Section 6.2.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	solid
Colour	white
Odour	without fragrance
Melting point/freezing point	cannot be determined - decomposition occurs
Boiling point or initial boiling point and boiling range	cannot be determined - decomposition occurs
Flammability	non-flammable
Lower and upper explosion limit	not applicable
Flash point	not applicable
Auto-ignition temperature	not applicable
Decomposition temperature	280 °C
pH	5-6 (5% solution at 20 °C)
Kinematic viscosity	not applicable
Solubility in water	767g / L 25°C
Partition coefficient n-octanol/water (log value)	-5.1
Vapour pressure	0 hPa at 25 °C
Density and/or relative density	
Density	1.78 g/cm ³ at 20 °C
Relative vapour density	data not available
Particle characteristics	data not available
Form	solid: crystalline

9.2. Other information

Oxidising properties	It is not oxidising.
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SECTION 10: Stability and reactivity

10.1. Reactivity

The substance is non-flammable.

10.2. Chemical stability

The product is stable under normal conditions.

10.3. Possibility of hazardous reactions

Unknown.

10.4. Conditions to avoid

The product is stable and no degradation occurs under normal use. Humid air. Heat.

10.5. Incompatible materials

Alkaline substances and nitrites.

10.6. Hazardous decomposition products

Not developed under normal uses.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

No toxicological data is available for the substance.

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Acute toxicity

Based on available data the classification criteria are not met.

Ammonium sulfate						
Route of exposure	Parameter	Method	Value	Exposure time	Species	Sex
Oral	LD ₅₀	OECD 401	4250 mg/kg bw		Rat (Rattus norvegicus)	F/M
Dermal	LD ₅₀	OECD 434	>2000 mg/kg bw		Rat (Rattus norvegicus)	F/M
Inhalation (aerosols)	LC ₀	OECD 433	3.5 mg/m ³ of air	4 hours	Rat	M

Skin corrosion/irritation

Based on available data the classification criteria are not met.

Ammonium sulfate				
Route of exposure	Result	Method	Exposure time	Species
Dermal	Not irritating	OECD 404	20 hours	Rabbit

Serious eye damage/irritation

Based on available data the classification criteria are not met.

Ammonium sulfate				
Route of exposure	Result	Method	Exposure time	Species
Eye	Not irritating	in vivo	72 hours	Rabbit

Respiratory or skin sensitisation

Based on available data the classification criteria are not met.

Ammonium sulfate					
Route of exposure	Result	Method	Exposure time	Species	Sex
Skin	Not sensitizing	in vivo	48 hours	Guinea-pig (Cavia aperea f. porcellus)	F

Germ cell mutagenicity

Based on available data the classification criteria are not met.

Ammonium sulfate					
Result	Method	Exposure time	Specific target organ	Species	Sex
Negative	in vivo	24 hours	Bone marrow	Mouse	M

Carcinogenicity

Based on available data the classification criteria are not met.

Ammonium sulfate							
Route of exposure	Parameter	Method	Value	Exposure time	Result	Species	Sex
Oral	NOAEL	OECD 453	284 mg/kg bw/day	52 weeks (7 days/week)	Negative	Rat (Rattus norvegicus)	M

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Reproductive toxicity

Based on available data the classification criteria are not met.

Ammonium sulfate							
Effect	Parameter	Method	Value	Exposure time	Result	Species	Sex
Effects on fertility	NOAEL (P/F ₁)	OECD 415	1500 mg/kg bw/day	2 weeks (7 days/week)	No effect	Rat (Rattus norvegicus)	F/M

Toxicity for specific target organ - single exposure

No data available for the substance. Based on available data the classification criteria are not met.

Toxicity for specific target organ - repeated exposure

Based on available data the classification criteria are not met.

Repeated dose toxicity

Ammonium sulfate							
Route of exposure	Parameter	Result	Method	Value	Exposure time	Species	Sex
Oral	NOAEL	No effect	OECD 453	284 mg/kg bw/day	52 weeks (7 days/week)	Rat (Rattus norvegicus)	M
Inhalation (aerosols)	NOAEC	No effect		300 mg/m ³ of air	14 days (7 days/week, 8 hour/day)	Rat (Rattus norvegicus)	M

Aspiration hazard

No data available for the substance. Based on available data the classification criteria are not met.

11.2. Information on other hazards

The substance does not have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

SECTION 12: Ecological information

12.1. Toxicity

Based on available data the classification criteria are not met.

Acute toxicity

Ammonium sulfate						
Parameter	Method	Value	Exposure time	Species	Environment	Value determination
LC ₅₀		53 mg/l	96 hours	Fish (Oncorhynchus mykiss)	Fresh water	
EC ₅₀		169 mg/l	48 hours	Daphnia (Daphnia magna)	Fresh water	
EC ₅₀		1600 mg/l	5 days	Algae and other aquatic plants (Chlorella vulgaris)		Static system
EC ₅₀	OECD 209	201 mg/kg of dry substance of soil		Eisenia fetida		

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Chronic toxicity

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Parameter	Value	Exposure time	Species	Environment
EC ₁₀	5.29 mg/l	30 days	Fish (Lepomis macrochirus)	Fresh water
EC ₁₀	3.12 mg/l	70 days	Aquatic invertebrates (Hyaella azteca)	Fresh water

12.2. Persistence and degradability

No data available for the substance.

12.3. Bioaccumulative potential

No data available for the substance.

12.4. Mobility in soil

No data available for the substance.

12.5. Results of PBT and vPvB assessment

Product does not contain any substance meeting the criteria for PBT or vPvB in accordance with the Annex XIII of Regulation (EC) No 1907/2006 (REACH) as amended.

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms as it does not meet the criteria set out in section B of Regulation (EU) No 2017/2100.

12.7. Other adverse effects

Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Hazard of environmental contamination; dispose of the waste in accordance with the local and/or national regulations. Proceed in accordance with valid regulations on waste disposal. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Empty containers may be used at waste incinerators to produce energy or deposited in a dump with appropriate classification. Perfectly cleaned containers can be submitted for recycling.

Waste management legislation

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste, as amended. Decision 2000/532/EC establishing a list of wastes, as amended.

Waste type code

06 10 99 wastes not otherwise specified

Packaging waste type code

06 10 00 wastes from the MFSU of nitrogen chemicals, nitrogen chemical processes and fertiliser manufacture

SECTION 14: Transport information

14.1. UN number or ID number

not subject to transport regulations

14.2. UN proper shipping name

not relevant

14.3. Transport hazard class(es)

not relevant

14.4. Packing group

not relevant

14.5. Environmental hazards

not relevant

14.6. Special precautions for user

Reference in the Sections 4 to 8.

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14.7. Maritime transport in bulk according to IMO instruments

not relevant

SECTION 15: Regulatory information

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

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Restrictions pursuant to Annex XVII of Regulation (EC) No. 1907/2006 (REACH), as amended

Ammonium sulfate

Restriction	Conditions of restriction
65	<p>1. Shall not be placed on the market, or used, in cellulose insulation mixtures or cellulose insulation articles after 14 July 2018 unless the emission of ammonia from those mixtures or articles results in a concentration of less than 3 ppm by volume (2,12 mg/m³) under the test conditions specified in paragraph 4.</p> <p>A supplier of a cellulose insulation mixture containing inorganic ammonium salts shall inform the recipient or consumer of the maximum permissible loading rate of the cellulose insulation mixture, expressed in thickness and density.</p> <p>A downstream user of a cellulose insulation mixture containing inorganic ammonium salts shall ensure that the maximum permissible loading rate communicated by the supplier is not exceeded.</p> <p>2. By way of derogation, paragraph 1 shall not apply to placing on the market of cellulose insulation mixtures intended to be used solely for the production of cellulose insulation articles, or to the use of those mixtures in the production of cellulose insulation articles.</p> <p>3. In the case of a Member State that, on 14 July 2016, has national provisional measures in place that have been authorised by the Commission pursuant to Article 129(2)(a), the provisions of paragraphs 1 and 2 shall apply from that date.</p> <p>4. Compliance with the emission limit specified in the first subparagraph of paragraph 1 shall be demonstrated in accordance with Technical Specification CEN/TS 16516, adapted as follows:</p> <ul style="list-style-type: none">(a) the duration of the test shall be at least 14 days instead of 28 days;(b) the ammonia gas emission shall be measured at least once per day throughout the test;(c) the emission limit shall not be reached or exceeded in any measurement taken during the test;(d) the relative humidity shall be 90 % instead of 50 %;(e) an appropriate method to measure the ammonia gas emission shall be used;(f) the loading rate, expressed in thickness and density, shall be recorded during the sampling of the cellulose insulation mixtures or articles to be tested.

15.2. Chemical safety assessment

Not available.

SECTION 16: Other information

Other important information about human health protection

The user is responsible for adherence to all related health protection regulations.

Key to abbreviations and acronyms used in the safety data sheet

ADR	European agreement concerning the international carriage of dangerous goods by road
BCF	Bioconcentration Factor
CAS	Chemical Abstracts Service

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CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures
EC	Identification code for each substance listed in EINECS
EC ₁₀	Concentration of a substance when it is affected 10 % of the population
EC ₅₀	Concentration of a substance when it is affected 50 % of the population
EINECS	European Inventory of Existing Commercial Chemical Substances
EmS	Emergency plan
EU	European Union
EuPCS	European Product Categorisation System
IATA	International Air Transport Association
IBC	International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
INCI	International Nomenclature of Cosmetic Ingredients
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LC ₀	Lethal concentration of a substance in which it can be expected death of 0% of the population
LC ₅₀	Lethal concentration of a substance in which it can be expected death of 50% of the population
LD ₅₀	Lethal dose of a substance in which it can be expected death of 50% of the population
log K _{ow}	Octanol-water partition coefficient
NOAEC	No observed adverse effect concentration
NOAEL	No observed adverse effect level
OEL	Occupational Exposure Limits
PBT	Persistent, bioaccumulative and toxic
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Agreement on the transport of dangerous goods by rail
UN	Four-figure identification number of the substance or article taken from the UN Model Regulations
UVCB	Substances of unknown or variable composition, complex reaction products or biological materials
VOC	Volatile organic compounds
vPvB	Very persistent and very bioaccumulative

Training guidelines

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

Recommended restrictions of use

not available

Information about data sources used to compile the Safety Data Sheet

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended.
REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

The changes (which information has been added, deleted or modified)

The version 1.3 replaces the SDS version from Monday, 4 September 2023. Changes were made in sections 1, 11, 12 and 16.

Statement

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.