

# SAFETY DATA SHEET



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

## Magnesal

Creation date 01st June 2021  
Revision date 04th September 2023 Version 1.2

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

- 1.1. Product identifier** Magnesal  
Substance / mixture mixture
- 1.2. Relevant identified uses of the substance or mixture and uses advised against**  
**Mixture's intended use**  
Food additive.  
**Main intended use**  
F Mixtures for further formulation  
**Mixture uses advised against**  
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- 1.3. Details of the supplier of the safety data sheet**  
**Manufacturer**  
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 mixture in accordance with Regulation (EC) No 1272/2008**  
The mixture is not classified as dangerous according to Regulation (EC) No 1272/2008.  
Full text of all classifications and hazard statements is given in the section 16.
- 2.2. Label elements**  
none
- 2.3. Other hazards**  
The mixture does not contain substances with endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605. Mixture does not contain any substance 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

- 3.2. Mixtures**  
**Chemical characterization**  
Mixture of substances and additives specified below.  
**Mixture contains these hazardous substances and substances with the highest permissible concentration in the working environment**

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note
CAS: 7791-18-6 EC: 232-094-6 Registration number: 01-2119485597-19-0001	Magnesium chloride hexahydrate	75-85	not classified as dangerous	

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Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note
CAS: 7447-40-7 EC: 231-211-8	Potassium chloride	5-22	not classified as dangerous	
Index: 017-014-00-8 CAS: 12125-02-9 EC: 235-186-4	ammonium chloride	3-17	Acute Tox. 4, H302 Eye Irrit. 2, H319	1

### 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. 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.

#### If on skin

Remove contaminated clothes. Wash the affected area with plenty of water, lukewarm if possible. Soap, soap solution or shampoo should be used if there is no skin injury. Provide medical treatment if skin irritation persists.

#### 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. Rinsing should continue at least for 10 minutes. Provide medical treatment, specialized if possible.

#### If swallowed

Rinse out the mouth with water and provide 2-5 dL of water. Provide medical treatment if the person has any health problems.

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

#### If inhaled

Not expected.

#### If on skin

Not expected.

#### If in eyes

Causes serious eye irritation.

#### If swallowed

Irritation, nausea.

### 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.

#### Unsuitable extinguishing media

Water - full jet.

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

In the event of fire, carbon monoxide, carbon dioxide and other toxic gases may arise. Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

### 5.3. Advice for firefighters

Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely. Use a self-contained breathing apparatus and full-body protective clothing. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

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### SECTION 6: Accidental release measures

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

Use personal protective equipment for work. Follow the instructions in the Sections 7 and 8. Prevent contact with skin and eyes.

#### 6.2. Environmental precautions

Prevent contamination of the soil and entering surface or ground water.

#### 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.

#### 6.4. Reference to other sections

See the Section 7, 8 and 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Prevent formation of dust in concentrations exceeding the occupational exposure limits. Prevent contact with skin and eyes. Wash hands and exposed parts of the body thoroughly after handling. Use personal protective equipment as per Section 8. 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

The mixture contains no substances for which occupational exposure limits are set.

##### DNEL

Potassium chloride					
Workers / consumers	Route of exposure	Value	Effect	Value determination	Source
Workers	Inhalation	1064 mg/m <sup>3</sup>	Chronic effects systemic		
Workers	Inhalation	5325 mg/m <sup>3</sup>	Acute effects systemic		
Workers	Dermal	303 mg/kg bw/day	Chronic effects systemic		
Workers	Dermal	910 mg/kg bw/day	Acute effects systemic		
Consumers	Inhalation	273 mg/m <sup>3</sup>	Chronic effects systemic		
Consumers	Inhalation	1365 mg/m <sup>3</sup>	Acute effects systemic		
Consumers	Oral	91 mg/kg bw/day	Chronic effects systemic		
Consumers	Oral	455 mg/kg bw/day	Acute effects systemic		

##### PNEC

Potassium chloride			
Route of exposure	Value	Value determination	Source
Freshwater environment	100 µg/l		
Water (intermittent release)	1 mg/l		
Marine water	100 µg/l		
Microorganisms in sewage treatment	10 mg/l		

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### 8.2. Exposure controls

Do not eat, drink and smoke during work. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

#### Eye/face protection

Protective goggles.

#### Skin protection

Hand protection: Protective gloves resistant to the product. Contaminated skin should be washed thoroughly.

#### Respiratory protection

It is not needed.

#### 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	data not available
Odour	data not available
Melting point/freezing point	117 °C
Boiling point or initial boiling point and boiling range	cannot be determined - decomposition occurs
Flammability	non-flammable
Lower and upper explosion limit	data not available
Flash point	data not available
Auto-ignition temperature	data not available
Decomposition temperature	120 °C
pH	5.5-7 (5% solution at 20 °C)
Kinematic viscosity	data not available
Solubility in water	data not available
Partition coefficient n-octanol/water (log value)	not applicable
Vapour pressure	data not available
Density and/or relative density	data not available
Relative vapour density	data not available
Particle characteristics	data not available

### 9.2. Other information

not available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

not available

### 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. Protect against flames, sparks, overheating and against frost.

### 10.5. Incompatible materials

Protect against strong acids, bases and oxidizing agents.

### 10.6. Hazardous decomposition products

Not developed under normal uses. Dangerous outcomes such as carbon monoxide and carbon dioxide are formed at high temperature and in fire.

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### 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 mixture. Inhalation of dust above values exceeding exposure limits for working environment may result in acute inhalation poisoning, depending on the level of concentration and exposure time.

#### Acute toxicity

Based on the available data, the criteria for classification of the mixture are not met.

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Route of exposure	Parameter	Method	Value	Exposure time	Species	Sex	Value determination	Source
Oral	ATE		14390 mg/kg				Calculation of value	

ammonium chloride								
Route of exposure	Parameter	Method	Value	Exposure time	Species	Sex	Value determination	Source
Oral	LD <sub>50</sub>	OECD 401	1410 mg/kg bw		Rat (Rattus norvegicus)	F/M		
Dermal	LD <sub>50</sub>	EU B.3	>2000 mg/kg bw		Rat	F/M		

Magnesium chloride hexahydrate								
Route of exposure	Parameter	Method	Value	Exposure time	Species	Sex	Value determination	Source
Oral	LD <sub>50</sub>	OECD 423	>5000 mg/kg bw		Rat	F/M	Experimentally	CSR
Dermal	LD <sub>50</sub>	OECD 402	>2000 mg/kg bw		Rat	F/M	Experimentally	CSR

Potassium chloride								
Route of exposure	Parameter	Method	Value	Exposure time	Species	Sex	Value determination	Source
Oral	LD <sub>50</sub>		3020 mg/kg		Rat	F		

#### Skin corrosion/irritation

No data are available for either the mixture or the components. Based on the available data, the criteria for classification of the mixture are not met.

#### Serious eye damage/irritation

No data are available for either the mixture or the components. Based on the available data, the criteria for classification of the mixture are not met.

#### Respiratory or skin sensitisation

No data are available for either the mixture or the components. Based on the available data, the criteria for classification of the mixture are not met.

#### Germ cell mutagenicity

No data are available for either the mixture or the components. Based on the available data, the criteria for classification of the mixture are not met.

#### Carcinogenicity

No data are available for either the mixture or the components. Based on the available data, the criteria for classification of the mixture are not met.

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### Reproductive toxicity

No data are available for either the mixture or the components. Based on the available data, the criteria for classification of the mixture are not met.

### Toxicity for specific target organ - single exposure

No data are available for either the mixture or the components. Based on the available data, the criteria for classification of the mixture are not met.

### Toxicity for specific target organ - repeated exposure

No data are available for either the mixture or the components. Based on the available data, the criteria for classification of the mixture are not met.

### Aspiration hazard

No data are available for either the mixture or the components. Based on the available data, the criteria for classification of the mixture are not met.

## 11.2. Information on other hazards

The mixture does not contain substances with 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

Data for the mixture are not available. Based on the available data, the criteria for classification of the mixture are not met.

#### Acute toxicity

ammonium chloride							
Parameter	Method	Value	Exposure time	Species	Environment	Value determination	Source
LC <sub>50</sub>		42.91 mg/l	96 hours	Fish (Oncorhynchus mykiss)	Fresh water		
EC <sub>50</sub>		136.6 mg/l	48 hours	Invertebrates (Daphnia magna)	Fresh water		
EC <sub>50</sub>		1.3 g/l	5 days	Algae (Chlorella vulgaris)	Fresh water		
EC <sub>50</sub>	OECD 209	1.31 g/l	30 minutes	Bacteria			
LC <sub>50</sub>		163 mg/kg of dry substance of soil	14 days	Microorganisms (Eisenia fetida)			

Magnesium chloride hexahydrate							
Parameter	Method	Value	Exposure time	Species	Environment	Value determination	Source
LC <sub>50</sub>		4526 mg/l	96 hours	Fish (Pimephales promelas)	Fresh water	Experimentally	CSR
LC <sub>50</sub>	EPA OPPTS 850.1075	23420 mg/l	48 hours	Fish	Salt water	Experimentally	CSR
LC <sub>50</sub>		548.4 mg/l	48 hours	Daphnia (Daphnia magna)	Fresh water	Experimentally	CSR
LC <sub>50</sub>		6959 mg/l	48 hours	Invertebrates (Americamysis bahia)	Salt water	Experimentally	CSR

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Potassium chloride							
Parameter	Method	Value	Exposure time	Species	Environment	Value determination	Source
LC <sub>50</sub>	OECD 203	880 mg/l	96 hours	Fish (Pimephales promelas)	Fresh water		
EC <sub>50</sub>	OECD 202	660 mg/l	48 hours	Daphnia (Daphnia magna)	Fresh water		
EC <sub>50</sub>	OECD 201	100 mg/l	72 hours	Algae (Scenedesmus subspicatus)			
EC <sub>50</sub>	OECD 209	1 g/l	3 hours	Microorganisms	Activated sludge		

### Chronic toxicity

ammonium chloride							
Parameter	Method	Value	Exposure time	Species	Environment	Value determination	Source
NOEC		11.8 mg/l	28 days	Fish			
NOEC		14.6 mg/l	21 days	Invertebrates			

Magnesium chloride hexahydrate							
Parameter	Method	Value	Exposure time	Species	Environment	Value determination	Source
NOEC		321 mg/l	21 days	Daphnia (Daphnia magna)	Fresh water	Experimentally	CSR
NOEC	OECD 201	213.5 mg/l	72 hours	Algae (Desmodesmus subspicatus)	Fresh water	Experimentally	CSR

### 12.2. Persistence and degradability

No data are available for either the mixture or the components.

### 12.3. Bioaccumulative potential

No data are available for either the mixture or the components.

### 12.4. Mobility in soil

No data are available for either the mixture or the components.

### 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

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

### 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.

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### 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 03 14 solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13

### Packaging waste type code

06 03 00 wastes from the MFSU of salts and their solutions and metallic oxides

## 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.

### 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).



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

ammonium chloride

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/m<sup>3</sup>) 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> <p>(a) the duration of the test shall be at least 14 days instead of 28 days;</p> <p>(b) the ammonia gas emission shall be measured at least once per day throughout the test;</p> <p>(c) the emission limit shall not be reached or exceeded in any measurement taken during the test;</p> <p>(d) the relative humidity shall be 90 % instead of 50 %;</p> <p>(e) an appropriate method to measure the ammonia gas emission shall be used;</p> <p>(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.</p>

### 15.2. Chemical safety assessment

Not available.

## SECTION 16: Other information

### A list of standard risk phrases used in the safety data sheet

H302 Harmful if swallowed.  
H319 Causes serious eye irritation.

### 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  
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<sub>50</sub> 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

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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 <sub>50</sub>	Lethal concentration of a substance in which it can be expected death of 50% of the population
LD <sub>50</sub>	Lethal dose of a substance in which it can be expected death of 50% of the population
log K <sub>ow</sub>	Octanol-water partition coefficient
NOEC	No observed effect concentration
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

Acute Tox.	Acute toxicity
Eye Irrit.	Eye irritation

### 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 1.2 replaces the SDS version from 14.07.2022. Changes were made in the sections 2 and 15.

### More information

Classification procedure - calculation method.

### 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.