

SAFETY DATA SHEET

according to 2012 OSHA Hazard Communication Standard (29CFR 1910.1200) as amended



Zinc Sulfate Monohydrate

Creation date 01st February 2024

Revision date

Version

1

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

Product identifier

Chemical name	Zinc Sulfate Monohydrate
CAS number	zinc sulfate (hydrous) (mono-, hexa-and hepta hydrate) 7446-19-7
Index number	030-006-00-9
EC (EINECS) number	231-793-3
Registration number	01-2119474684-27-0026

Recommended use

Active pharmaceutical substance. Food additive.

Substance uses advised against

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

Emergency telephone number

CHEMTREC®, Inside the USA: 800-424-9300

CHEMTREC®, Outside the USA: 001-703-527-3887

SECTION 2: Hazards identification

Classification of the substance or mixture

The substance **is classified as dangerous** by the 2012 OSHA Hazard Communication Standard (29CFR 1910.1200).

Acute Tox. 4, H302

Eye Dam. 1, H318

Aquatic Acute 1, H400

Aquatic Chronic 1, H410

Most serious adverse effects on human health and the environment

Causes serious eye damage. Harmful if swallowed. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Label elements

Hazard pictogram



Signal word

Danger

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Dangerous substance

zinc sulfate (hydrous) (mono-, hexa- and hepta hydrate)

(Index: 030-006-00-9; CAS: 7446-19-7)

Hazard statements

- H302 Harmful if swallowed.
H318 Causes serious eye damage.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

- P264 Wash face, hands and exposed parts of the body thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P391 Collect spillage.
P501 Dispose of contents/container to according to applicable regulations.

Hazards not otherwise classified (HNOC)

None identified

SECTION 3: Composition/information on ingredients

Identification numbers	Substance name	Content in % weight	Classification according to 29CFR 1910.1200	Note
Index: 030-006-00-9 CAS: 7446-19-7 EC: 231-793-3 Registration number: 01-2119474684-27-0026	substance main component zinc sulfate (hydrous) (mono-, hexa- and hepta hydrate)	98-100	Acute Tox. 4, H302 Eye Dam. 1, H318 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)	

SECTION 4: 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 unconscious, put the person in the stabilized (recovery) position on his side with his head slightly bent backwards and make sure that airways are free; never induce vomiting. If the person vomits by himself, make sure that the vomit is not inhaled. In life threatening conditions first of all provide resuscitation of the affected person and ensure medical assistance. Respiratory arrest - provide artificial respiration immediately. Cardiac arrest - provide indirect cardiac massage immediately.

Inhalation

Terminate the exposure immediately; move the affected person to fresh air. Protect the person against growing cold. Provide medical treatment if irritation, dyspnoea or other symptoms persist.

Skin contact

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.

Eye contact

Do not rub your eyes - it could lead to mechanical damage of the cornea. 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! Rinsing should be continued for 10-30 minutes from the inner to the outer eye corner to make sure that the other eye is not involved. Depending on the situation, call medical rescue service or ensure medical treatment as promptly as possible. Everyone must be referred for treatment even if affected only a little.

Ingestion

Rinse out the mouth with water and provide 2-5 dL of water. Provide medical treatment.

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Most important symptoms and effects, both acute and delayed

Inhalation

Inhaling dust can cause corrosion of the breathing system.

Skin contact

Not expected. Irritation, itching, redness.

Eye contact

Causes serious eye damage. Temporary feeling of burning and redness.

Ingestion

Corrosion of the digestion system can occur. Nausea, stomach pain, vomiting, diarrhoea.

Notes to Physician

Symptomatic treatment.

SECTION 5: Firefighting measures

Suitable extinguishing media

Alcohol-resistant foam, carbon dioxide, powder, water spray jet, water mist.

Unsuitable extinguishing media

Water - full jet.

Special hazards arising from the substance or mixture

Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage. At high temperatures, decomposition occurs to form sulfur dioxide.

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.

SECTION 6: Accidental release measures

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.

Environmental precautions

Do not allow to enter drains. Prevent contamination of the soil and entering surface or ground water. In the event of substantial pollution, contact respective authorities and wastewater treatment plants.

Methods and material for containment and cleaning up

Place the spilled product mechanically in the properly closed containers and dispose of it according to the section 13.

Reference to other sections

See the Section 7, 8 and 13.

SECTION 7: Handling and storage

Precautions for safe handling

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. Use personal protective equipment as per Section 8. Observe valid legal regulations on safety and health protection. Avoid release to the environment.

Conditions for safe storage, including any incompatibilities

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

Specific end use(s)

not available

SECTION 8: Exposure controls/personal protection

Control parameters

This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

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zinc sulfate (hydrous) (mono-, hexa-and hepta hydrate)		PNEC	
Route of exposure	Value	Value determination	Source
Freshwater environment	39.6 µg/l		
Marine water	19.8 µg/l		
Microorganisms in sewage treatment	274.4 µg/l		
Freshwater sediment	403.2 mg/kg of dry substance of sediment		
Sea sediments	445.2 mg/kg of dry substance of sediment		
Soil (agricultural)	228.1 mg/kg of dry substance of soil		

Appropriate engineering controls

Good ventilation, showers, eyewash station

Personal protective equipment

Follow the usual measures intended for health protection at work and especially for good ventilation. This can be achieved only by local suction or efficient general ventilation. 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 or face shield (based on the nature of the work performed).

Skin protection

Hand protection: Protective gloves resistant to the product. When choosing appropriate thickness, material and permeability of the gloves, observe recommendations of their particular manufacturer. Observe other recommendations of the manufacturer. Other protection: protective workwear. Contaminated skin should be washed thoroughly.

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.

Thermal hazard

Not available.

Environmental exposure controls

Observe usual measures for protection of the environment, see Section 6. Collect spillage.

SECTION 9: Physical and chemical properties

Appearance

Physical state

solid, crystalline, powder

Colour

white

Odour

without fragrance

pH

4-6 (5% solution at 20 °C)

Melting point/freezing point

cannot be determined - decomposition occurs

Boiling point or initial boiling point and boiling range

cannot be determined - decomposition occurs

Flash point

not applicable

Evaporation rate

not applicable

Flammability

non-flammable

Upper and lower explosion limit

not applicable

Vapour pressure

not applicable

Vapour density

not applicable

Relative density

3.195

Solubility in water

91.6g / 100g 50°C

Partition coefficient n-octanol/water (log value)

not determined

Auto-ignition temperature

not determined

Decomposition temperature

280 °C

Kinematic viscosity

not applicable

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SECTION 10: Stability and reactivity

Reactivity

The substance is non-flammable.

Chemical stability

The product is stable under normal conditions.

Possibility of hazardous reactions

Unknown.

Conditions to avoid

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

Incompatible materials

Protect against strong acids, bases and oxidizing agents.

Hazardous decomposition products

Not developed under normal uses. At high temperatures, irritating or toxic gases may be formed. Sulphur oxides.

SECTION 11: Toxicological information

Acute toxicity

Harmful if swallowed.

zinc sulfate (hydrous) (mono-, hexa-and hepta hydrate)						
Route of exposure	Parameter	Method	Value	Exposure time	Species	Sex
Oral	LD ₅₀	OECD 401	574 mg/kg bw		Rat	M
Dermal	LD ₅₀	OECD 402	>2223 mg/kg bw	24 hours	Rat	F/M

Skin corrosion/irritation

Based on available data the classification criteria are not met.

zinc sulfate (hydrous) (mono-, hexa-and hepta hydrate)				
Route of exposure	Result	Method	Exposure time	Species
Skin	Not irritating	OECD 404	4 hours	Rabbit

Serious eye damage/irritation

Causes serious eye damage.

zinc sulfate (hydrous) (mono-, hexa-and hepta hydrate)				
Route of exposure	Result	Method	Exposure time	Species
Eye	Highly irritating	OECD 405	72 hours	Rabbit

Respiratory or skin sensitisation

Based on available data the classification criteria are not met.

zinc sulfate (hydrous) (mono-, hexa-and hepta hydrate)					
Route of exposure	Result	Method	Exposure time	Species	Sex
Skin	Not sensitizing	OECD 406	48 hours	Pig	F

Germ cell mutagenicity

Based on available data the classification criteria are not met.

zinc sulfate (hydrous) (mono-, hexa-and hepta hydrate)					
Result	Method	Exposure time	Specific target organ	Species	Sex
Negative	OECD 471			Bacteria (Salmonella typhimurium)	

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Carcinogenicity

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

IARC - not listed; NTP - not listed; ACGIH - not listed; OSHA - not listed; Mexico - not listed

Reproductive toxicity

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

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

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

Aspiration hazard

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

Endocrine disruptor information

The substance does not have endocrine disrupting properties.

SECTION 12: Ecological information

Ecotoxicity

Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Acute toxicity

zinc sulfate (hydrous) (mono-, hexa-and hepta hydrate)				
Parameter	Value	Exposure time	Species	Environment
LC ₅₀	589 µg/l		Fish (Pimephales promelas)	
NOEC	422.6 µg/l		Daphnia (Daphnia magna)	Fresh water
NOEC	160.2 mg/kg	4 hours	Microorganisms (Photobacterium phosphoreum)	Activated sludge

Chronic toxicity

zinc sulfate (hydrous) (mono-, hexa-and hepta hydrate)				
Parameter	Value	Exposure time	Species	Environment
NOEC	272 µg/l		Algae (Pseudokirchneriella subcapitata)	Fresh water

Persistence and degradability

No data available for the substance.

Bioaccumulative potential

No data available for the substance.

Mobility in soil

The following data are available.

zinc sulfate (hydrous) (mono-, hexa-and hepta hydrate)				
Parameter	Method	Value	Environment	Temperature
Log Kp	OECD 106	3.24 l/kg		20°C

Other adverse effects

Not available.

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SECTION 13: Disposal considerations

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.

SECTION 14: Transport information

UN number or ID number

UN 3077

UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Sulfate Monohydrate)

Transport hazard class(es)

9 Miscellaneous dangerous substances and articles

Packing group

III - substances presenting low danger

Environmental hazards

not relevant

Special precautions for user

Reference in the Sections 4 to 8.

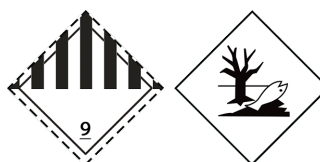
Maritime transport in bulk according to IMO instruments

not relevant

Additional information

Safety signs and label

9 + hazardous for the environment



Marine transport - IMDG

EmS (emergency plan): F-A, S-F

SECTION 15: Regulatory information

United States of America Inventory

TSCA

not listed (Zinc sulfate, CAS nr. 7733-02-0: listed)

TSCA Inventory notification - Active-Inactive

not listed (Zinc sulfate, CAS nr. 7733-02-0: active)

TSCA - EPA Regulatory Flags

not listed (Zinc sulfate, CAS nr. 7733-02-0: not listed)

TSCA 12(b) - Notices of export

Not applicable

U.S. Federal Regulations

SARA Title III (Superfund Amendments and Reauthorization Act)

SARA 302 Extremely Hazardous Substances, 40CFR355, Appendix A: Not Listed

SARA 311/312 Hazard Categories:

See section 2 for more information

SARA 313 Reportable Ingredients:

This product **contains** 100% of chemical that is subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Threshold Values: 1,0%

CWA (Clean Water Act)

CWA - Hazardous Substances

not listed (Zinc sulfate, CAS nr. 7733-02-0: listed)

CWA - Reportable Quantities

not listed (Zinc sulfate, CAS nr. 7733-02-0: 1000lb)

CWA - Toxic Pollutants

listed (Zinc sulfate, CAS nr. 7733-02-0: listed)

CWA - Priority Pollutants

not listed (Zinc sulfate, CAS nr. 7733-02-0: not listed)

CAA (clean air act)

OSHA - Occupational Safety and Health Administration

Not applicable

CERCLA

Hazardous Substances RQs

1000lb

CERCLA EHS RQs

not listed

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Massachusetts:

not listed (Zinc sulfate, CAS nr. 7733-02-0: listed)

New Jersey:

listed (Zinc sulfate, CAS nr. 7733-02-0: listed)

Pennsylvania:

listed (Zinc sulfate, CAS nr. 7733-02-0: listed)

Illinois:

not listed (Zinc sulfate, CAS nr. 7733-02-0: not listed)

Rhode Island:

not listed (Zinc sulfate, CAS nr. 7733-02-0: not listed)

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U.S. Department of Transportation

Reportable Quantity (RQ): DOT Marine

Pollutant

DOT Severe Marine Pollutant

N

N

N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade

No information available

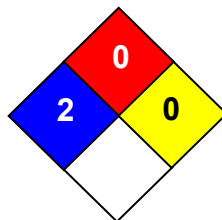
Chemical safety assessment

Chemical safety Report (CSR) has been carried out for the substance.

SECTION 16: Other information

NFPA (National Fire Protection Association)

Health	2
Flammability	0
Reactivity	0
Special Hazard	None



4: Extreme, 3: High, 2: Moderate, 1: Slight, 0: Insignificant; OX: Oxidiser, W: Water Reactives, SA: Simple Asphyxiants

Competent person responsible for the safety data sheet

Name

Petr Ševčík

E-mail

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Creation Date

01-Feb-2024

Revision Date

Revision Summary

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.

End of SDS

