

MATERIAL SAFETY DATA SHEET

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

1.1 Product identifier: **ZINC SULPHATE HEPTAHYDRATE**

Synonyms: Zinc sulphate (REACH);
zinc sulfate (IUPAC)

Index number: 030-006-00-9

EC number: 231-793-3

REACH registration number: 01-2119474684-27-XXXX

CAS number: 7446-20-0

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

1.2.1 Identified uses:

Zinc Sulphate production.
Component for production of inorganic zinc compounds.
Electro galvanizing.
Electroplating.
Zinc production by electrowinning.
Laboratory reagent.
Ore dressing (mining metallurgy).
Zinc production by pyrometallurgy.
Component for production of organic zinc compounds.
Component for production of Inorganic pigments, i.e. Lithopones.
Component for production of Coatings/paints, inks, enamels, varnishes.
Component for production of surface treatment preparations.
Component for Paper coating.
Use of ZnSO₄-containing paper coatings.
Component for Textile & leather coating/treatment.
Use of ZnSO₄-containing textile & leather coatings.
Additive for the production of Lubricants/Grease/Metal working fluids.
Use of ZnSO₄-containing Lubricants/Grease/Metal working fluids.
Use of ZnSO₄-containing catalysts.
Additive for the formulation of animal feedstuffs.
Additive for the formulation of biocidal products.
Additive for the formulation of cleaning products.
Use of ZnSO₄-containing cleaning products.
Additive for the formulation of fertilizers.
Use of ZnSO₄-containing fertilizer's formulations.
Additive in the formulation of cosmetics.
Use of cosmetics.
Additive in the formulation of pharma/veterinary products.
Use of Pharma/veterinary products.

1.2.2 Uses advised against: Not specified.

1.3 Details of the supplier of the safety data sheet:

Centro-chem sp. z o.o. sp.k.
Turka 141b, 20-258 Lublin 62,
Tel. +48 81 756 55 20

Fax: +48 81 756 55 10

E-mail address for a competent person responsible for the safety data sheet:

bartosz@centro-chem.pl

1.4 Emergency telephone number:

1.5 Update info:

Date of the update: 23. 08. 2022

Revision: 3

SECTION 2: Hazards identification.

2.1 Classification of the substance or mixture:

Acute toxicity (oral), Hazard Category 4

H302: Harmful if swallowed.

Serious eye damage/eye irritation, Hazard Category 1

H318: Causes serious eye damage.

H400: Very toxic to aquatic life.

Hazardous to the aquatic environment — Acute Hazard, Category 1

H410: Very toxic to aquatic life with long lasting effects.

Hazardous to the aquatic environment — Chronic Hazard, Category 1

M-Factor acute: 1

M-Factor chronic: 1

2.2 Label elements:

Hazard pictogram(s):



Signal word:

Danger

Hazard statement(s):

H302: Harmful if swallowed

H318: Causes serious eyes damage

H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statement(s):

P280: Wear protective gloves/protective clothing/eye protection/face protection/hearing 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/...

P273: Avoid release to the environment.

P391: Collect spillage.

P501: Dispose of contents/container to approved waste collector.

2.3 Other hazards:

PBT/vPvB: Not applicable (inorganic).

Endocrine disrupting properties: No data available.

SECTION 3: Composition/information on ingredients.

3.1 Substances:

Substance: zinc sulphate heptahydrate
Mass fraction: min. 98 %
CAS number: 7446-20-0
EC number: 231-793-3
Index number: 030-006-00-9
REACH registration number: 01-2119474684-27-XXXX
Chemical formula: $ZnSO_4 \cdot 7H_2O$
Molar mass: 287.54 g/mol
Classification:

Acute toxicity (oral), Hazard Category 4	H302: Harmful if swallowed.
Serious eye damage/eye irritation, Hazard Category 1	H318: Causes serious eye damage.
	H400: Very toxic to aquatic life.
Hazardous to the aquatic environment — Acute Hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.
Hazardous to the aquatic environment — Chronic Hazard, Category 1	
M-Factor acute: 1	
M-Factor chronic: 1	

3.2 Mixtures: Not applicable.

SECTION 4: First aid measures.

4.1 Description of first aid measures:

General: Move victim out of danger zone. Position and transport victim on their side. In case of respiratory distress, bring into semi-upright, seated position. Remove contaminated clothing immediately and dispose off safely. Put victim at rest, cover with a blanket and keep warm. Do not leave victim unattended. In case of accident or if you feel unwell, seek medical advice immediately (show safety data sheet if possible).
Seek medical advice.

a) Inhalation: Fresh air, consult doctor if feeling unwell.
b) Contact with eyes: Rinse out with plenty of water, contact the doctor immediately.
c) Contact with skin: Wash off with water, consult doctor if irritancy persists.
d) Ingestion: Give plenty of water to drink, induce vomits, contact the doctor.

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

Eyes - Redness, pain, temporary loss of vision.
Skin - Redness, irritation.
Inhalation - Cough, sore throat, shortness of breath.
Ingestion - Abdominal pain, diarrhoea, nausea, vomiting.

4.3 *Indication of any immediate medical attention and special treatment needed:* Contact with the doctor in case victim feeling unwell after material inhalation or ingestion. Use first aid measures before doctor's arrival.

SECTION 5: Firefighting measures.

5.1 Extinguishing media:

Suitable extinguishing media: Use extinguishing measures appropriate to other materials stored, appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media: Water jet.

5.2 Special hazards arising from the substance or mixture:

Non-flammable substance.

Ambient fire may liberate hazardous vapors – sulphuric oxides., carbon oxides.

Prevent fire extinguishing water from contaminating surface water or the ground water system.

5.3 Advice for firefighters: wear gas-tight protective clothing and respiratory protection equipment.

Extinguish gases/vapors/mists with sprayed stream of water. 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:

6.1.1 For non-emergency personnel:

a) Wear suitable protective equipment (including personal protective equipment referred to under section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing;

b) Remove of ignition sources, provide sufficient ventilation, control of dust

c) Evacuate the danger area and consult an expert.

Avoid contact with skin and eyes, avoid contact with substance.

Remove contaminated clothing and wash before reuse.

6.1.2 For emergency responders:

Wear suitable protective equipment (including personal protective equipment referred to under section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing;

6.2 Environmental precautions: Do not empty into drains.

6.3 Methods and material for containment and cleaning up: Pick up dry substance mechanically.

Avoid dust generation. Clean up contaminated area. Forward to disposal.

Prevent access to water, sewers and soil.

6.4 Reference to other sections: For personal protection, see section 8.

In the case of waste management, see section 13.

SECTION 7: Handling and storage.

7.1 Precautions for safe handling: Ensure sufficient air exchange (ventilation) Act according to good manufacturing practice and general rules of safety & hygiene handling the chemical substances. Use protective equipment mentioned in paragraph 8. Do not empty into drains. Observe label precautions.

7.2 Conditions for safe storage, including any incompatibilities:

Tightly closed containers in dry place, up to 10 layers.

Storage temperature: Storage temperature : 10 - 30 °C.

Incompatible materials: Lead, calcium, strontium salts, borax, alkali carbonates and hydroxides.

7.3 *Specific end use(s)*: No data available

SECTION 8: Exposure controls/personal protection.

8.1 Control parameters:

Ingredients with limit values that require monitoring at the workplace:

No data available.

DNELs (Workers)

Long-term - systemic effects, dermal: 8.3 mg/kg bodyweight/day.

Long-term - systemic effects, inhalation: 1 mg/m³.

DNELs (General population)

Long-term - systemic effects, oral: 0.83 mg/kg bodyweight/day.

Long-term - systemic effects, inhalation: 1.25 mg/m³.

Long-term - systemic effects, dermal: 8.3 mg/kg bodyweight/day.

PNECs

PNEC aqua (freshwater): 0.0206 mg/l.

PNEC aqua (marine water): 0.0061 mg/l.

PNEC sediment (freshwater): 117.8 mg/kg dwt.

PNEC sediment (marine water): 56.5 mg/kg dwt.

PNEC soil: 35.6 mg/kg dwt.

PNEC sewage treatment plant: 0.1 mg/l.

8.2 Exposure controls:

8.2.1 Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Individual protection measures, such as personal protective equipment:

a) Eyes protection: Tight safety glasses.

b) Hands and skin protection:

Hands protection: Use protective gloves. The glove material must be sufficiently impermeable and resistant to the substance. Check the tightness before wear. Gloves should be well cleaned before being removed, then stored in a well ventilated location. Pay attention to skin care. Textile or leather gloves are completely unsuitable.

The following information is valid for aqueous, saturated solutions of the substance.

Suitable materials for gloves are (breakthrough time ≥ 8 hours):

NR (Natural rubber (Caoutchouc), Natural latex) - NR (0,5 mm); CR (polychloroprenes, Chloroprene rubber) - CR (0,5 mm); NBR (Nitrile rubber)- NBR (0,35 mm); Butyl rubber - Butyl (0,5 mm); FKM (fluororubber) - FKM (0,4 mm); PVC (Polyvinyl chloride)- PVC (0,5 mm);

Skin protection: Chemical resistant work shoes. Chemical resistant clothing.

c) Respiratory protection: Respiratory protection required in case of: Handling larger quantities. In the case of the formation of dust. Suitable respiratory protective equipment: Particle filter device (DIN EN 143).

Type of mask: Half-face mask (DIN EN 140).

Filtering device: P2 or P3.

d) Thermal hazards: No data available.

8.2.3. *Environmental exposure controls*: Avoid release to the environment.

SECTION 9: Physical and chemical properties.

9.1 *Information on basic physical and chemical properties:*

- a) Physical state: Solid – powder.
- b) Colour: White to beige.
- c) Odour: Odourless.
- d) Melting point/freezing point: Not applicable (decomposition).
- e) Boiling point or initial boiling point and boiling range: Not applicable (decomposition).
- f) Flammability: Not flammable.
- g) Lower and upper explosion limit:
 - Upper: Do not apply to solids.
 - Lower: Do not apply to solids.
- h) Flash point: Do not apply to solids.
- i) Auto-ignition temperature: Only applies to gases and liquids.
- j) Decomposition temperature: No data available.
- k) pH: No data available.
- l) Kinematic viscosity: Only applies to liquids.
- m) Solubility: Water: 208 g/l (20 °C).
- n) Partition coefficient n-octanol/water (log value): Not applicable (inorganic).
- o) Vapour pressure: No data available.
- p) Density and/or relative density: 1.98 g/cm³.
- q) Relative vapour density: Only applies to gases and liquids.
- r) Particle characteristics: No data available.

9.2 *Other information:*

9.2.1 *Information with regard to physical hazard classes:* -

9.2.2 *Other safety characteristics:* -

- a) Explosive properties: Not applicable.
- b) Oxidizing properties: Not applicable.

SECTION 10: Stability and reactivity.

10.1 *Reactivity:* The product is non-reactive under normal conditions of use, storage and transport.

10.2 *Chemical stability:* Stable in normal circumstances. Thermal decomposition in 240°C – elimination of crystalline water, ca 600°C anhydrous substance.

10.3 *Possibility of hazardous reactions:* May violently react with hydrogen peroxide and magnesium.

10.4 *Conditions to avoid:* The high temperature.

10.5 *Incompatible materials:* Lead, calcium, strontium salts, borax, alkali carbonates and hydroxides.

10.6 *Hazardous decomposition products:*

Ambient fire may liberate hazardous vapors – sulphuric oxides., carbon oxides.

SECTION 11: Toxicological information.

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

a) *Acute toxicity:*

- Oral Acute toxicity (oral), Hazard Category 4: H302: Harmful if swallowed.
LD50, rat: 574 mg/kg b.w. (anhydrous substance).
- Inhalation Based on available data, the classification criteria are not met.

- Dermal Based on available data, the classification criteria are not met.
LD50, rat: > 2000 mg/kg (OECD 402)
- b) *Skin corrosion/irritation*: Based on available data, the classification criteria are not met.
Skin irritation test (rabbit) - slight irritation (anhydrous substance).
- c) *Serious eye damage/irritation*: Serious eye damage/eye irritation, Hazard Category 1: H318:
Causes serious eye damage.
- d) *Respiratory or skin sensitisation*:
Respiratory sensitization: Based on available data, the classification criteria are not met.
Local lymphatic test, mouse-negative.
Skin sensitization: Based on available data, the classification criteria are not met.
- e) *Germ cell mutagenicity*: Based on available data, the classification criteria are not met.
Genetic toxicity, "In Vitro", Ames test, *Salmonella typhimurium* - negative.
Genetic toxicity, "In Vivo", cytogenetic test, rat - negative chromosome aberration.
- f) *Carcinogenicity*: Based on available data, the classification criteria are not met.
The mouse test showed no carcinogenic properties.
- g) *Reproductive toxicity*: Based on available data, the classification criteria are not met.
- h) *STOT-single exposure*: Based on available data, the classification criteria are not met.
- i) *STOT-repeated exposure*: Based on available data, the classification criteria are not met.
- j) *Aspiration hazard*: Based on available data, the classification criteria are not met.

11.2 Information on other hazards

11.2.1 *Endocrine disrupting properties*: No data available.

11.2.2 *Other information*:

- Eyes - Redness, pain, temporary loss of vision.
Skin - Redness, irritation.
Inhalation - Cough, sore throat, shortness of breath.
Ingestion - Abdominal pain, diarrhoea, nausea, vomiting.

SECTION 12: Ecological information.

12.1 Toxicity:

Hazardous to the aquatic environment (acute / short-term): Hazardous to the aquatic environment
— Acute Hazard, Category 1: H400: Very toxic to aquatic life.

Hazardous to the aquatic environment (long-term): Hazardous to the aquatic environment —
Chronic Hazard, Category 1: H410: Very toxic to aquatic life with long
lasting effects.

Hazardous to the ozone layer: Reason for no classification: data lacking.

M-Factor acute: 1

M-Factor chronic: 1

- Fish: LC50: 0.169 mg/l (pH 7.1 - 8.0, mg Zn/l, *Oncorhynchus mykiss*).
NOEC: 0.146 mg/l (pH 8, *O. Mykiss*).
- Aquatic invertebrates : EC50: 0.413 mg/l (pH <7, mg Zn/l, *Ceriodaphnia dubia*).
NOEC: 0.082 mg/l (pH 6, *Daphnia magna*).
- Algae/aquatic plants: EC50: 0.136 mg/l/72 h (pH >7, mg Zn/l, *Selenastrum capricornutum*).
NOEC: 0.019 mg/l (pH 8, *Pseudokirchneriella subcapitata*).
- Microorganisms: No data available.

12.2 *Persistence and degradability*: Methods for determination of biodegradability are not
applicable to inorganic substances.

12.3 Bioaccumulative potential:

Bioconcentration factor (BCF REACH): Not relevant

Log Pow: Not applicable.

12.4 *Mobility in soil*: No (test) data on mobility of the substance available. Soil contaminant.

12.5 *Results of PBT and vPvB assessment*: Not applicable (inorganic).

12.6 *Endocrine disrupting properties*: No data available.

12.7 *Other adverse effects*: No additional information available.

SECTION 13: Disposal considerations.

13.1 Waste treatment methods:

Substance: The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or channels with the product nor used packaging.
Send to a licensed waste disposal plant.

Used packaging: Empty the remaining residues.
Consider reuse.
Dispose of as unused product.
Send to a licensed waste disposal plant.

Waste code product/packaging: To be specified at the place of use.

DIRECTIVE 2008/98/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 19 November 2008 on waste and repealing certain Directives.

SECTION 14: Transport information.

14.1. *UN number or ID number*: 3077

14.2. *UN proper shipping name*: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

14.3. *Transport hazard class(es)*: 9

14.4. *Packing group*: III

14.5. *Environmental hazards*: Yes

14.6. *Special precautions for user*:

ADR

Classification code: M7

Special provisions: 274, 335, 375, 601

Limited quantities: 5 kg

Excepted quantities: E1

Packing instructions: P002, IBC08, LP02, R001

Mixed packing provisions: MP10

Portable tank and bulk container instructions: T1, BK1, BK2, BK3

Portable tank and bulk container special provisions: TP33

Tank code: SGAV, LGBV

Tank special provisions: -

Vehicle for tank carriage: AT

Transport category: 3(-)

Special provisions for carriage - Packages: V13

Special provisions for carriage - Loading, unloading and handling: CV13

Hazard identification number (Kemler No.) : 90

14.7. *Maritime transport in bulk according to IMO instruments*: -

SECTION 15: Regulatory information.

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

a) *Annex XIV - List of substances subject to authorisation*

Substances of very high concern: None of the components are in the list.

b) *Annex XVII Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles: No. 75*

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a 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

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

REGULATION (EC) No 767/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 July 2009 on the placing on the market and use of feed, amending European Parliament and Council Regulation (EC) No 1831/2003 and repealing Council Directive 79/373/EEC, Commission Directive 80/511/EEC, Council Directives 82/471/EEC, 83/228/EEC, 93/74/EEC, 93/113/EC and 96/25/EC and Commission Decision 2004/217/EC

Regulation (EC) No 2003/2003 of the European Parliament and of the Council of 13 October 2003 relating to fertilisers.

Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety.

15.2 Chemical safety assessment: Was carried out.

SECTION 16: Other information.

a) *Indication of changes:* Review.

b) *Key abbreviations and acronyms used in the safety data sheet:*

ACGIH: American Conference of Governmental Industrial Hygienist

ADN: Accord européen relative au transport international des marchandises Dangereuses par voies de Navigation intérieures.

ADR: the european Agreement concerning the international carriage og Dangerous goods by Road.

B: Bioaccumulative

CSR: Chemical Safety Report

CSA: Chemical Safety Assessment

DNEL: Derived No Effect Level

IATA: International Air Transport Association

IBC: International Bulk Chemical code

ICAO: International Civil Aviation Organization
IMGD: International Maritime Dangerous Goods code
LC50: Lethal Concentration 50
LD50: Lethal Dose 50
LLNA: Local LymphNode Assay
MARPOL: international convention for the prevention of MARine POLLution
P: Persistent
PBT: Persistent, Bioaccumulative and Toxic
PNEC: Predicted No Effect Concentration
RID: Regulations concerning the International carriage of Dangerous goods by rail
SDS: Safety Data Sheet
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value
TWA: Time Weighted Average
vPvB: very Persistent very Bioaccumulative

c) *Key literature references and sources for data:*

Manufacturers safety data sheet.

<https://echa.europa.eu/pl/registration-dossier/-/registered-dossier/15488/1/1>

c) *Indication of which of the methods of evaluating information referred to in Article 9 of Regulation (EC) No 1272/2008 was used for the purpose of mixture classification:* Not applicable

d) *List of relevant hazard statements and/or precautionary statements:* Written out in full under section 2.

e) *Advice on any training appropriate for workers to ensure protection of human health and the environment:* It is recommended to train workers to ensure the protection of human health and the environment. It is necessary for the people working with the product to read and understand this SDS. We recommend storing the SDS in a place with easy access to it for everyone who works with the product, and (if needed) for emergency services.

Disclaimer: The information contained in the SDS is to describe the product only from the point of safety requirements. Users of the product are responsible for creating the conditions for the safe use of the product and take responsibility for consequences resulting from improper use of this product.
It is recommended to conduct training for health and safety, to ensure protection of human health and the environment.