



## Safety Data Sheet

### Zinc sulfate heptahydrate

#### Section 1: Chemical Product and Company Identification

**Product Name:** Zinc sulfate heptahydrate

**Catalog Codes:** 485

**CAS#:** 7446-20-0

**RTECS:** ZH5300000

**Synonym:** Zinc vitriol

**Chemical Name:** Zinc sulfate heptahydrate

**Chemical Formula:**  $\text{ZnSO}_4 \cdot 7 \text{H}_2\text{O}$

**Contact Information:**

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#### Section 2: Composition and Information on Ingredients

**Composition:**

Name	CAS #	% by Weight
Zinc sulfate heptahydrate	7446-20-0	100

**Toxicological Data on Ingredients:** LD50 Oral - Mouse - male - 926 mg/kg.

#### Section 3: Hazards Identification

**Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008**

Acute toxicity, Oral (Category 4), H302

Serious eye damage (Category 1), H318

Short-term (acute) aquatic hazard (Category 1), H400

Long-term (chronic) aquatic hazard (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

**Label elements**

**Labelling according Regulation (EC) No 1272/2008**

#### Pictogram



Signal Word                      Danger

#### Hazard statement(s)

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

#### Precautionary statement(s)

P264                      Wash skin thoroughly after handling.  
P270                      Do not eat, drink or smoke when using this product.  
P273                      Avoid release to the environment.  
P280                      Wear eye protection/ face protection.  
P301 + P312              IF SWALLOWED: Call a POISON CENTER/ doctor if you feel  
unwell.  
P305 + P351 + P338      IF IN EYES: Rinse cautiously with water for several minutes.  
Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard      none  
Statements

#### Reduced Labeling (<= 125 ml)

#### Pictogram



Signal Word                      Danger

#### Hazard statement(s)

H318                      Causes serious eye damage.  
Precautionary statement(s)  
P280                      Wear eye protection/ face 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.

Supplemental Hazard      none  
Statements

#### Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## Section 4: First Aid Measures

### Description of first-aid measures

**General advice**

Show this material safety data sheet to the doctor in attendance.

**If inhaled**

After inhalation: fresh air.

**In case of skin contact**

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

**In case of eye contact**

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.  
Remove contact lenses.

**If swallowed**

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

**Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 3) and/or in section 11

**Indication of any immediate medical attention and special treatment needed**

No data available

## Section 5: Fire and Explosion Data

**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.

**Special hazards arising from the substance or mixture**

Sulfur oxides

Zinc/zinc oxides

Not combustible.

Fire may cause evolution of:

Sulfur oxides

Ambient fire may liberate hazardous vapours.

**Advice for firefighters**

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

**Further information**

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

**Section 6: Accidental Release Measures****Personal precautions, protective equipment and emergency procedures**

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

For personal protection see section 8.

**Environmental precautions**

Do not let product enter drains.

**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.

**Reference to other sections**

For disposal see section 13.

**Section 7: Handling and Storage****Precautions for safe handling**

For precautions see section 3.

**Conditions for safe storage, including any incompatibilities****Storage conditions**

Tightly closed. Dry.

Hygroscopic.

**Section 8: Exposure Controls/Personal Protection****Control parameters****Ingredients with workplace control parameters****Exposure controls****Personal protective equipment****Eye/face protection**

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

**Skin protection**

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](http://www.kcl.de)).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested: KCL 741 Dermatril® L

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](http://www.kcl.de)).

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested: KCL 741 Dermatril® L

**Body Protection**

protective clothing

**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a fullface particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**

Do not let product enter drains.

**Section 9: Physical and Chemical Properties****Information on basic physical and chemical properties**

- |                   |                                           |
|-------------------|-------------------------------------------|
| a) Appearance     | Form: powder, crystalline<br>Color: white |
| b) Odor           | No data available                         |
| c) Odor Threshold | No data available                         |

d) pH	4 - 6 ( 20 °C)
e) Melting point/freezing point	Melting point: 100 °C
f) Initial boiling point and boiling range	No data available
g) Flash point	Not applicable
h) Evaporation rate	No data available
i) Flammability (solid, gas)	The product is not flammable.
j) Upper/lower flammability or explosive limits	No data available
k) Vapor pressure	No data available
l) Vapor density	No data available
m) Relative density	No data available
n) Water solubility	No data available
o) Partition coefficient: n-octanol/water	Not applicable for inorganic substances
p) Autoignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available
<b>Other safety information</b>	
Bulk density	800 - 1000 kg/m <sup>3</sup>

## Section 10: Stability and Reactivity Data

**Reactivity**

No data available

**Chemical stability**

The product is chemically stable under standard ambient conditions (room temperature).

**Possibility of hazardous reactions**

Violent reactions possible with:

Strong oxidizing agents

**Conditions to avoid**

no information available

**Incompatible materials**

Metals

**Hazardous decomposition products**

In the event of fire: see section 5

**Section 11: Toxicological Information****Information on toxicological effects****Acute toxicity**

LD50 Oral - Mouse - male - 926 mg/kg

(OECD Test Guideline 401)

LD50 Dermal - Rat - male and female - > 2.000 mg/kg

(OECD Test Guideline 402)

**Skin corrosion/irritation**

Skin - Rabbit

Result: No skin irritation - 4 h

(OECD Test Guideline 404)

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Causes serious eye damage.

(OECD Test Guideline 405)

**Respiratory or skin sensitization**

Local lymph node assay (LLNA) - Mouse

Result: negative

Remarks:

(ECHA)

**Germ cell mutagenicity**

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Result: negative

Remarks: (ECHA)

Test Type: In vivo micronucleus test

Species: Mouse

Cell type: Red blood cells (erythrocytes)

Application Route: Intraperitoneal injection

Result: negative

Remarks: (ECHA)

#### **Carcinogenicity**

No data available

#### **Reproductive toxicity**

No data available

#### **Specific target organ toxicity - single exposure**

No data available

#### **Specific target organ toxicity - repeated exposure**

No data available

#### **Aspiration hazard**

No data available

#### **Additional Information**

RTECS: ZH5300000

Zinc oxide dust or fume can irritate the respiratory tract. Prolonged skin contact can produce a severe dermatitis called oxide pox. Exposure to high levels of dust or fume can cause metallic taste, marked thirst, coughing, fatigue, weakness, muscular pain, and nausea followed by fever and chills. Severe overexposure may result in bronchitis or pneumonia with a bluish tint to the skin., burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, airway resistance, Cardiovascular effects., pulmonary edema, congestive heart failure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

## **Section 12: Ecological Information**

#### **Toxicity**

Toxicity to fish static test LC50 - Pimephales promelas (fathead minnow) - 0,330 mg/l - 96 h

Remarks: (ECHA)

Toxicity to daphnia  
and other aquatic  
invertebrates

static test EC50 - Daphnia magna (Water flea) - 1,4 mg/l - 48 h



(OECD Test Guideline 202)

Toxicity to algae EC50 - *Chlorella vulgaris* (Fresh water algae) - 64,8 mg/l - 72 h

Remarks: (IUCLID)

Toxicity to bacteria static test EC50 - activated sludge - 5,2 mg/l - 3 h

(OECD Test Guideline 209)

#### **Persistence and degradability**

The methods for determining the biological degradability are not applicable to inorganic substances.

#### **Bioaccumulative potential**

Bioaccumulation *Channa punctata* - 45 d

at 27 °C (Zinc(II) sulfate heptahydrate)

Bioconcentration factor (BCF): 0,4

#### **Mobility in soil**

No data available

#### **Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

#### **Other adverse effects**

No data available

### **Section 13: Disposal Considerations**

#### **Waste treatment methods**

#### **Product**

Waste material must be disposed of in accordance with the national and local regulations.

Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself

### **Section 14: Transport Information**

#### **UN number**

ADR/RID: 3077

IMDG: 3077

IATA: 3077

#### **UN proper shipping name**

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc(II) sulfate heptahydrate)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc(II) sulfate heptahydrate)

IATA: Environmentally hazardous substance, solid, n.o.s. (Zinc(II) sulfate heptahydrate)

**Transport hazard class(es)**

ADR/RID: 9

IMDG: 9

IATA: 9

**Packaging group**

ADR/RID: III

IMDG: III

IATA: III

**Environmental hazards**

ADR/RID: yes

IMDG Marine pollutant: yes

IATA: yes

**Special precautions for user****Further information**

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

**Section 15: Other Regulatory Information****health and environmental regulations/legislation specific for the substance or mixture**

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

**National legislation**

Seveso III: Directive 2012/18/EU of the : ENVIRONMENTAL HAZARDS  
European Parliament and of the Council on the  
control of major-accident hazards involving dangerous substances.

**Other regulations**

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.  
Take note of Dir 94/33/EC on the protection of young people at work.

**Chemical Safety Assessment**

For this product a chemical safety assessment was not carried out

## Section 16: Other Information

**References:** Not available

**Other Special Considerations:** Not available

**Created:** 01/01/2023

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