

SECTION 1: Identification

1.1. Identification

Product form : Substance
Substance name : Zinc Sulfate, Heptahydrate, ACS
CAS-No. : 7446-20-0
Product code : LC27220
Formula : $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$
Synonyms : white vitriol / zinc sulphate, heptahydrate / zincvitriol, heptahydrate

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Chemical raw material
Fungicide
Preservative
Restrictions on use : Not for food, drug or household use

1.3. Supplier

LabChem, Inc.
1010 Jackson's Pointe Ct.
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 or +1-703-741-5970

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Acute toxicity (oral) Category 4 H302 Harmful if swallowed
Hazardous to the aquatic environment - Acute Hazard Category 1 H400 Very toxic to aquatic life
Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Warning

Hazard statements (GHS US) : H302 - Harmful if swallowed
H400 - Very toxic to aquatic life

Precautionary statements (GHS US) : P264 - Wash exposed skin thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P273 - Avoid release to the environment.
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330 - If swallowed, rinse mouth
P391 - Collect spillage.
P501 - Dispose of contents/container to comply with local, state and federal regulations.

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : None.

2.4. Unknown acute toxicity (GHS US)

Not applicable

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SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%	GHS US classification
Zinc Sulfate, Heptahydrate, ACS (Main constituent)	(CAS-No.) 7446-20-0	100	Acute Tox. 4 (Oral), H302 Aquatic Acute 1, H400

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with labored breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.
First-aid measures after inhalation	: Remove the victim into fresh air. Doctor: administration of corticoid spray. Respiratory problems: consult a doctor/medical service.
First-aid measures after skin contact	: Rinse with water. Soap may be used. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.
First-aid measures after eye contact	: Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Take victim to an ophthalmologist. Do not apply neutralizing agents.
First-aid measures after ingestion	: Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Doctor: gastric lavage.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms	: Harmful if swallowed. Slightly harmful by inhalation. Causes serious eye damage.
Symptoms/effects after inhalation	: AFTER INHALATION OF DUST: Coughing.
Symptoms/effects after skin contact	: Slight irritation.
Symptoms/effects after eye contact	: Corrosion of the eye tissue. Visual disturbances. Inflammation/damage of the eye tissue.
Symptoms/effects after ingestion	: AFTER ABSORPTION OF LARGE QUANTITIES: Gastrointestinal complaints. Nausea. Vomiting. Abdominal pain. Blood in stool. Decreased renal function. Change in the blood composition. Weakening of the immune system.
Chronic symptoms	: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation. Gastrointestinal complaints. Inflammation/damage of the eye tissue.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Adapt extinguishing media to the environment for surrounding fires.

5.2. Specific hazards arising from the chemical

Fire hazard	: DIRECT FIRE HAZARD. Non combustible.
Explosion hazard	: DIRECT EXPLOSION HAZARD. No direct explosion hazard.
Hazardous decomposition products in case of fire	: On burning: release of toxic and corrosive gases/vapours (sulphur oxides, zinc oxide) and formation of metallic fumes.

5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire	: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.
Firefighting instructions	: Dilute toxic gases with water spray. Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.
Protection during firefighting	: Heat/fire exposure: compressed air/oxygen apparatus.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Gloves. Safety glasses. Protective clothing. Dust cloud production: compressed air/oxygen apparatus.
- Emergency procedures : Mark the danger area. Prevent dust cloud formation. No naked flames. Wash contaminated clothes.
- Measures in case of dust release : In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection. Do not breathe dust.
- Emergency procedures : Stop release. Ventilate area.

6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

- For containment : Contain released substance, pump into suitable containers. Plug the leak, cut off the supply. Dam up the solid spill. Knock down/dilute dust cloud with water spray.
- Methods for cleaning up : Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Avoid raising dust. Keep away from naked flames/heat. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Keep container tightly closed.
- Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

- Incompatible products : Strong bases.
- Incompatible materials : Heat sources.
- Heat-ignition : KEEP SUBSTANCE AWAY FROM: heat sources.
- Prohibitions on mixed storage : KEEP SUBSTANCE AWAY FROM: (strong) bases.
- Storage area : Store at ambient temperature. Keep out of direct sunlight. Store in a dry area. Keep container in a well-ventilated place. Meet the legal requirements.
- Special rules on packaging : SPECIAL REQUIREMENTS: closing. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
- Packaging materials : SUITABLE MATERIAL: wood. glass. plastics. cardboard.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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No additional information available

8.2. Appropriate engineering controls

- Appropriate engineering controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide adequate general and local exhaust ventilation.

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8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Dust production: dust mask with filter type P3. Gloves. Protective clothing.

Materials for protective clothing:

GIVE GOOD RESISTANCE: nitrile rubber. PVC. neoprene

Hand protection:

Gloves

Eye protection:

Safety glasses. In case of dust production: protective goggles

Skin and body protection:

Protective clothing

Respiratory protection:

Dust production: dust mask with filter type P3

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Crystalline solid. Powder. Grains.
Color	: Colourless or white
Odor	: Odorless
Odor threshold	: No data available
pH	: 4.5
Melting point	: 100 °C
Freezing point	: No data available
Boiling point	: Not applicable
Flash point	: Not applicable
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: Not applicable
Relative density	: 2
Specific gravity / density	: 1970 kg/m ³
Molecular mass	: 287.56 g/mol
Solubility	: Soluble in water. Soluble in methanol. Soluble in glycerol. Water: 170 g/100ml
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: > 500 °C
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

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9.2. Other information

VOC content : 0 %
Other properties : Substance has acid reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

Violent exothermic reaction with (strong) bases.

10.2. Chemical stability

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

High temperature. Incompatible materials. Moisture.

10.5. Incompatible materials

Strong bases.

10.6. Hazardous decomposition products

Sulfur compounds.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Harmful if swallowed.
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

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LD50 oral rat	1260 mg/kg (Rat, Oral)
ATE US (oral)	1260 mg/kg body weight

Skin corrosion/irritation : Not classified
pH: 4.5

Serious eye damage/irritation : Not classified
pH: 4.5

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

Viscosity, kinematic : No data available

Likely routes of exposure : Skin and eye contact.

Potential Adverse human health effects and symptoms : Harmful if swallowed. Slightly harmful by inhalation. Causes serious eye damage.

Symptoms/effects after inhalation : AFTER INHALATION OF DUST: Coughing.

Symptoms/effects after skin contact : Slight irritation.

Symptoms/effects after eye contact : Corrosion of the eye tissue. Visual disturbances. Inflammation/damage of the eye tissue.

Symptoms/effects after ingestion : AFTER ABSORPTION OF LARGE QUANTITIES: Gastrointestinal complaints. Nausea. Vomiting. Abdominal pain. Blood in stool. Decreased renal function. Change in the blood composition. Weakening of the immune system.

Chronic symptoms : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation. Gastrointestinal complaints. Inflammation/damage of the eye tissue.

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SECTION 12: Ecological information

12.1. Toxicity

- Ecology - general : Dangerous for the environment.
- Ecology - air : Not included in the list of substances which may contribute to the greenhouse effect (IPCC).
Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
- Ecology - water : Very toxic to crustacea. Toxic to fishes. Severe water pollutant (surface water). Inhibition of activated sludge. Very toxic to algae. May cause eutrophication at very low concentration. pH shift.

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LC50 fish 1	4.6 ppm (96 h, Salmo gairdneri, Fresh water)
EC50 Daphnia 1	0.56 mg/l (48 h, Daphnia magna, Anhydrous form)

12.2. Persistence and degradability

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Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

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BCF fish 1	59 – 242 (Cyprinus carpio, Test duration: 8 weeks)
BCF fish 2	59 – 242 (Cyprinus carpio, Anhydrous form)
Bioaccumulative potential	Bioaccumable.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

- Waste disposal recommendations : Treat using the best available techniques before discharge into drains or the aquatic environment. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle/reuse. Remove to an authorized dump (Class I). Precipitate/make insoluble.
- Additional information : Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

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SECTION 15: Regulatory information

15.1. US Federal regulations

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Not listed on the United States TSCA (Toxic Substances Control Act) inventory

SARA Section 311/312 Hazard Classes

Health hazard - Acute toxicity (any route of exposure)

15.2. International regulations

CANADA

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Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

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Revision date : 07/22/2020

Full text of H-phrases: see section 16:

H302	Harmful if swallowed
H400	Very toxic to aquatic life

NFPA health hazard

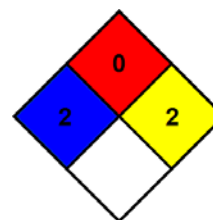
: 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard

: 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity

: 2 - Materials that readily undergo violent chemical change at elevated temperatures and pressures.



Hazard Rating

Health

: 2 Moderate Hazard - Temporary or minor injury may occur

Flammability

: 0 Minimal Hazard - Materials that will not burn

Physical

: 2 Moderate Hazard - Materials that are unstable and may undergo violent chemical changes at normal temperature and pressure with low risk for explosion. Materials may react violently with water or form peroxides upon exposure to air.

Personal protection

: E

E - Safety glasses, Gloves, Dust respirator

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