Product Name	Zinc sulfate heptahydrate

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identification:

Product Description: Zinc sulfate heptahydrate

Synonyms: zinc vitriol, White vitriol

CAS-No: 7446-20-0

EC-No.: 616-097-3

Molecular Formula: $ZnSO_4 \cdot 7H_2O$

REACH Registration No: 01-2119474684-27-XXXX

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

Recommended Use: Laboratory chemicals, Pharmaceutical production, Cosmetic raw material, used as biopharma ingredient

1.3. Details of the supplier of the safety data sheet:

- **Company** — **Finar Limited**
  184-186/P, Chacharwadi Vasna,
  Sarkhej-Bavla Highway,
  Ta.: Sanand, Dist.: Ahmedabad-382110, Gujarat, India.
  Web: www.finarchemicals.com
- **E-Mail Address** — safety.finar@actylis.com; info.finar@actylis.com

1.4. Emergency Telephone Number:

- For Emergency contact on: +91 - 2717 - 616 717

Product Name	Zinc sulfate heptahydrate

SECTION 2: HAZARDS IDENTIFICATION

2.1. 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.

2.2. Label Elements:

Labelling according to 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 Statements None

Reduced Labelling (<= 125 ml)

Pictogram

Product Name	Zinc sulfate heptahydrate

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 Statements None

2.3. 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 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances: Zinc sulfate heptahydrate

3.2. Mixtures:

Component	CAS-No	EC-No.	Weight %
Zinc sulfate heptahydrate	7446-20-0	616-097-3	100

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures:

- **General advice**

  Show this 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. Remove contact lenses.

Immediately call-in ophthalmologist.

- **If swallowed**

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

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3. Indication of any immediate medical attention and special treatment needed:

No data available

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media:

Suitable Extinguishing Media- Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2. Special hazards arising from the substance or mixture:

Sulfur oxides

Zinc/zinc oxides

Not combustible.

Ambient fire may liberate hazardous vapours.

5.3. Advice for firefighters:

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

5.4 Further Information:

Suppress (knock down) gases/vapours/mists with a water spray jet. 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:

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.

6.2. Environmental precautions:

Do not let product enter drains.

6.3. Methods and material 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.

6.4. Reference to other sections:

For disposal see Sections 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling:

Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid dust formation. Do not breathe dust. Avoid contact with skin, eyes or clothing.

7.2. Conditions for safe storage, including any incompatibilities:

Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. Strong bases.

7.3. Specific end use(s):

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters:

Ingredients with workplace control parameters

8.2. 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

Body Protection-

Protective clothing.

Hand 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).

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).
Splash contact-

Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: KCL 741 Dermatril® L

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).

Environmental Exposure Controls-

Do not let product enter drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties:

- **Appearance:** White
- **Physical State:** Solid (Crsytalline)
- **Odor:** No data available
- **Odor Threshold:** No data available
- **pH:** 4.4 - 6 5% aq. solution
- **Melting Point:** 100 °C
- **Critical Temperature:** No data available
- **Vapor Pressure:** No data available
- **Relative Density:** No data available
- **Density:** No data available
- **Auto-Ignition Temperature:** No data available
- **Decomposition Temperature:** 500°C
- **Volatility:** No data available

- **Bulk Density:** No data available
- **Viscosity, dynamic:** No data available
- **Viscosity, Kinematic:** No data available
- **Water/Oil Dist. Co eff.:** No data available
- **Partition Co-efficient: n-octanol/Water:** No data available
- **Ionicity (in Water):** No data available
- **Lower Explosion Limit:** No data available
- **Upper Explosion Limit:** No data available
- **Boiling Point/Range:** No data available
- **Specific Gravity:** 3.54 at 25°C
- **Flash Point:** No data available
- **Water Solubility:** Soluble in water

9.2. Other information:

Molecular Formula: $ZnSO_4 . 7H_20$

Molecular Weight: 287.53 g/mol

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity:

No data available

10.2. Chemical stability:

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

10.3. Possibility of hazardous reactions:

Violent reactions possible with: Strong oxidizing agents

10.4. Conditions to avoid:

Avoid dust formation. Incompatible products. Excess heat.

10.5. Incompatible materials:

Strong bases, Metals.

10.6. Hazardous decomposition products:

Sulfur oxides

In the event of fire: see section 5

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 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 irritation

Skin - Rabbit

Result: No skin irritation - 4 h (OECD Test Guideline 404)

Eye irritation

Eyes - Rabbit

Result: Causes serious eye damage. (OECD Test Guideline 405)

Sensitisation

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

Teratogenicity

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

11.2 Further 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

12.1. 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)

12.2 Persistence and degradability:

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

12.3 Bioaccumulate potential:

Bioaccumulation Channa punctata - 45 d at 27 °C (Zinc (II) sulfate heptahydrate)

Bioconcentration factor (BCF): 0.4

12.4 Mobility in soil:

No data available

12.5 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.

12.6 Other adverse effects:

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods:

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14: Transport information

	Land transport (ADR/RID)	Air transport (IATA)	Sea transport (IMDG)
14.1 UN number	UN 3077		
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc(II) sulfate heptahydrate)		
14.3 Class	9		
14.4 Packing group	III		
14.5 Environmentally hazardous	Yes		
14.6 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: Regulatory information

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

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

National legislation

Seveso III: Directive 2012/18/EU of the European Parliament : ENVIRONMENTAL HAZARDS

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.

15.2 Chemical safety assessment:

For this product a chemical safety assessment was not carried out.

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H302 Harmful if swallowed.

H318 Causes serious eye damage.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

Training advice

Provide adequate information, instruction and training for operators.

References: Not available

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