

ZINC SULPHATE

MATERIAL SAFETY DATA SHEET



1. IDENTIFICATION OF THE PRODUCT & SUPPLIER

Name of Product: Zinc Sulphate

Supplier Details:

Name: Melpat International Pty Ltd

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2. COMPOSITION / INGREDIENTS

Substance: Zinc Sulphate Heptahydrate

Molecular Formula: $ZnH_{14}O_{11}S$

Structural Formula: $ZnSO_4 \cdot 7H_2O$

CAS no: 7446-20-0

RTECS no: ZH5300000

EC no.: 231-793-3

EC index no.: 030-006-00-9

3. PHYSICAL AND CHEMICAL PROPERTIES

Molecular weight : 287,58 g/mole

Appearance: Fine crystals

Colour: Almost white

Odour: None

Physical state: Fine crystals. Crystal size less than 2 mm.

Water solubility: Soluble.

PHYSICAL AND CHEMICAL PROPERTIES continued...

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| Melting point: | Loses all water at 280° C Decomposes if heated above 500° C |
| pH: | 3,5 +/- 0,5 (water suspension 5%) |
| Specific gravity(H ₂ O = 1): | 1,9 g/cm ³ |
| Flammability: | Not flammable. Not combustible. |
| Explosive properties: | Not explosive |
| Auto-ignition temperature: | Not auto-ignition |

4. IDENTIFICATION OF HAZARDS

RECOMMENDED UNDER EC CLASSIFICATION (Regulation EC No. 1272/2008 Annex VI Table 3.2)



Xn Harmful



N Dangerous to the environment




Risk Phrases:

- 22: Harmful if swallowed.
- 41: Risk of serious damage to eyes.
- 50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

- 2: Keep out of reach of children.
- 22: Do not breathe dust.
- 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- 39: Wear eye / face protection.
- 46: If swallowed, seek medical advice immediately and show this container or label.
- 60: This material and its container must be disposed of as hazardous waste.
- 61: Avoid release to the environment. Refer to special instructions/ Safety data sheets.

RECOMMENDED UNDER GHS CLASSIFICATION (Regulation EC No. 1272/2008 Annex VI Table 3.1)

| Classification | | | Labelling | | |
|-----------------------------|----------|---|---|-------------|---|
| Hazard Class | Category | Hazard Statement | Pictogram | Signal Word | Hazard Statement |
| Acute Toxicity | 4 | H302 Harmful if swallowed |  | WARNING | H302: Harmful if swallowed. |
| Eye Damage | 1 | H318 Causes serious eye damage. |  | DANGER | H318: Causes serious eye damage. |
| Acute Aquatic Environment | 1 | H400 Very toxic to aquatic life. | | | |
| Chronic Aquatic Environment | 1 | H410 Very toxic to aquatic life with long lasting effects. |  | WARNING | H410: Very toxic to aquatic life with long lasting effects. |

5. COMPOSITION/ INFORMATION ON INGREDIENTS

| <u>Component Name</u> | <u>%by Wt.</u> | <u>CAS#</u> | <u>ACGIH TLV</u> | <u>OSHA PEL</u> |
|-----------------------|----------------|-------------|------------------|-----------------|
| Elemental zinc | 22 | 7440-66-6 | not defined* | not defined* |

* As zinc dusts or mists.

Components not precisely identified are proprietary or not hazardous.

6. TOXICOLOGICAL INFORMATION

RTECS number: ZH5300000 (See actual entry in RTECS for complete information)

OSHA Permissible Exposure Limit (PEL): not defined

ACGIH Threshold Limit Value (TLV): not defined

ROUTES OF EXPOSURE:

Ingestion: Harmful if swallowed

Skin contact: May cause skin irritation. Excessive exposure, will produce skin irritation with pain, itching and redness.

Eye contact: Risk of serious damage to eyes. Exposure will cause redness and pain. Prolonged exposure may cause conjunctivitis, turbidity, ulceration and corneal abnormalities.

| | | |
|------------------------|--|---------------|
| Inhalation: | Workers exposed to dust form complained of irritation of mucous membranes and upper respiratory tract with coughing, burns, breathing difficulty. | |
| CHRONIC TOXIC EFFECTS: | Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled. | |
| CARCINOGENICITY: | Not known. None of the components in this product is listed by IARC, U.S. NTP, California Prop 65, ACGIH, NIOSH and OSHA as a potential carcinogen. | |
| MUTAGENICITY: | Not known. | |
| TERATOGENICITY: | CA Prop 65 Developmental Toxin: | Not listed |
| | U.S. TRI Developmental Toxin: | Not listed |
| | CA Prop 65 Female Reproductive Toxin: | Not listed |
| | CA Prop 65 Male Reproductive Toxin: | Not listed |
| | U.S. TRI Reproductive Toxin: | Not listed |
| ACUTE TOXICITY: | Oral LD50 (rat) : | 1260 mg/kg |
| | Oral LD50 (mouse): | 200 mg/kg |
| | Skin irritation: | Yes |
| | Eye irritation: | Yes |
| | Sensitization: | None expected |

7. FIRST AID MEASURES

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| Ingestion: | Drink promptly a large quantity of milk, egg white, gelatin solution. If these are not available, large quantities of water. Never give anything by mouth to an unconscious person. Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention immediately. |
| Skin contact: | Remove contaminated clothing and shoes. Wash with plenty of soap and lukewarm running water until no evidence of chemical remains (approximately 5 minutes). Make sure the water is clean. Give medical attention. Launder contaminated clothing before reuse |
| Eye contact: | If the affected person wears contact lenses, do not hesitate removing it. Hold eyelids open and gently flush with running lukewarm water, until no evidence of chemical remains (at least 20 minutes). Make sure the water is clean. Get medical attention immediately. |
| Inhalation: | Remove victim to fresh air. Supply fresh air. Encourage patient to blow nose to ensure clear passage of breathing. If breathing is difficult, give oxygen. If required, provide artificial respiration, preferably mouth-to-mouth. Consult doctor if symptoms persist. |

8. FIRE FIGHTING MEASURES

- General Hazard: Negligible fire and explosion hazard when exposed to heat or flame.
- Suitable Extinguishing Media: There is no restriction on the type of extinguisher which may be used. Use extinguishing media suitable to the environment. Use dry chemical, carbon dioxide, water spray, or foam. Use water carefully as material will react with water to form acidic solution.
- Equipment: Firefighters should use self contained breathing apparatus and protective clothing and gloves to prevent contact with eyes and skin.
- Specific Hazards: Thermal decomposition products include highly toxic gases. Zinc oxide. Sulfur dioxide.
- Additional Information: In case of fire, prevent by any means possible spillage from entering drains or water courses.

National Fire Protection Association



NFPA RATING

Hazardous Material Information System

| | | |
|----------------------|---|--|
| HEALTH | 2 | |
| FLAMMABILITY | 0 | |
| REACTIVITY | 0 | |
| PROTECTIVE EQUIPMENT | B | |

HMIS RATING

HAZARD RATINGS: 4 = extreme, 3 = serious, 2 = moderate, 1 = slight, 0 = minimal

9. ACCIDENTAL RELEASE MEASURES

- Personal Precautions: Ensure adequate ventilation. Avoid formation of dust. Personnel involved in clean-up require adequate respiratory, skin, eye protection, rubber boots and heavy rubber gloves.
- Environmental Precautions: Pollution may be caused by runoff from fire control or dilution water. Prevent the material from entering drains or water courses. High concentrations of zinc on lakes, rivers and streams are toxic to aquatic ecosystems.
- METHODS FOR CLEANING UP:
- Spill on ground: Small spills: May be mopped and wiped off. Avoid generating dusty conditions.
Large spills: Avoid generating dusty conditions. Recover the material and deposit in a polypropylene bag. Wash ground with plenty of water. Properly dispose the waste materials thereafter and according with the local regulations.
- Spill on water: Recover the material as soon as possible because the material is soluble in water and dissolves to form an acidic solution. Deposit in a suitable container and according with the local regulations. Do not drink the contaminated water. High concentrations of zinc on lakes, rivers and streams are toxic to aquatic ecosystems.

10. HANDLING AND STORAGE

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| General Information: | Average shelf life under proper storage conditions is at least two (2) years. |
| Precautions for safe handling: | Working areas must be well aerated. Provide suction extractors if dust is formed. Avoid eye, skin contact and breathing dust. Use safety goggles, protective clothing, gloves and dust respirator covering nose and mouth. Keep container tightly closed and dry. Remove contaminated clothing and protective equipment before entering eating areas. Carefully wash hands after using the compound and most especially before eating or drinking. |
| Conditions for safe storage, including any incompatibilities: | It is better not to store the product in contact with metal containers, use a plastic liner. Store in a clean, cool, dry, and well ventilated area and out of direct sunlight. Do not store near feed, food or within the reach of children. Protect from rain and excessive heat. Keep container tightly closed and dry. Product is hygroscopic. |

II. EXPOSURE CONTROLS/ PERSONAL PROTECTION

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| Control Parameters: | Control enclosed spaces with adequate ventilation to prevent exceedance of ACGIH Threshold Limit Value (TLV) (not listed) and OSHA Permissible Exposure Limit (PEL) (not listed). |
| Appropriate Engineering Controls: | Ventilation: Use local ventilation if dusting is a problem, to maintain air levels below the recommended exposure limit. |
| Personal Protective Equipment: | |
| Respiratory protection: | In enclosed spaces where the TLV or PEL may be exceeded, wear NIOSH/MSHA approved dust or mist respirator. |
| Hand protection: | Wear heavy duty rubber gloves. |
| Eye protection: | Wear splashproof or dust resistant safety goggles to protect eyes from contact with this substance. |
| Skin protection: | Employees must wear appropriate protective (impervious) clothing to prevent repeated or prolonged skin contact with this substance. Wear rubber boots. |
| Other recommendations: | After handling this product always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using. |

12. STABILITY AND REACTIVITY

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|-------------------------------------|---|
| Stability & reactivity: | This material is stable and not considered reactive under normal temperatures and pressures. |
| Conditions to avoid: | Excessive heat, direct sunlight, high moisture conditions, dust generation, incompatible materials. |
| Incompatible Materials: | Lead, calcium, strontium salts, borax, alkali carbonates and hydroxides, silver protein and tannis. |
| Hazardous Decomposition Products: | Oxides of sulfur and oxides of zinc. Reacts with water to form sulfuric acid. |
| Possibility of Hazardous Reactions: | This material will not react or polymerize. |

13. ECOLOGICAL INFORMATION

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| ECOTOXICITY: | Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment Fish LC50 (96 h): Between 1 and 10 mg/L. Very toxic. Cichlid LC50 (96 h): 13 ppm. Very toxic |
| BIOACCUMULATIVE POTENTIAL: | no information available |
| MOBILITY: | no information available |
| ENVIRONMENTAL FATE: | no information available |

14. DISPOSAL CONSIDERATIONS

Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional and local authority requirements.

The generation of waste should be avoided or minimized wherever possible.

Avoid dispersal of spilled material, runoff and contact soil, waterways, drains and sewers.

Disposal of zinc wastes into waterways is not allowed.

Do not contaminate water, food or feed by disposal.

Avoid excessive heat and incompatible materials such as lead, calcium, strontium salts, borax, alkali carbonates and hydroxides, silver protein and tannis.

Use registered transporters.

15. TRANSPORT INFORMATION

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|--|--|
| MARITIME TRANSPORT (IMDG Code): | not regulated for transport of dangerous goods |
| ROAD/RAILWAY TRANSPORT (ADR/RID Code): | not regulated for transport of dangerous goods |
| AIR TRANSPORT (IATA-DGR Code): | not regulated for transport of dangerous goods |

16. REGULATORY INFORMATION

Regulatory requirements are subject to change and may differ from one location to another. It is the buyer's responsibility to ensure that its activities comply with federal, state, local and country laws.

For further details, please contact Melpat International Pty Ltd:

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