

Zinc Sulphate

Material Safety Data Sheet

(This document conforms to ISO 11014-1)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Supplier / Manufacturer: Kimleigh Chemicals SA (Pty) Ltd
11 Jasper van der Westhuizen Street, Potchindustria,
Potchefstroom, North West Province, 2531, South Africa.
Tel no: +27 (18) 293-1028 Fax no: +27 (18) 294-4079
Web: www.kimleigh.com Email: sales@kimleigh.co.za

Chemical Name: Zinc Sulphate Monohydrate.

Synonyms: White vitriol, zinc vitriol, sulphuric acid zinc salt monohydrate.

Product ranges: Animade and Fertion.

Chemical Family: Sulphates.

Material Uses: Animal feeds and Fertilizers.

2. COMPOSITION / INFORMATION ON INGREDIENTS

Substance Name: Zinc Sulphate Monohydrate.

Assay % by Weight: 96 % minimum.

Appearance: Colourless to white free-flowing powder.

Molecular Formula: $ZnSO_4 \cdot H_2O$

Molar Mass: 179.45 g/mol

CAS Number: 7446-19-7

EC Number: 231-793-3

EC Index Number: 030-006-00-9

Hazardous Ingredients:

Ingredients	Content	GHS Classification
Zinc	35 %	H302, 318, 410

3. HAZARD IDENTIFICATION

Physical State and Appearance: Colourless to white free-flowing powder.

GHS Classification:

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

P301, 310: If swallowed immediately call a poison center or doctor / physician.

P305, 351, 388: If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

P315: Get immediate medical advice/attention.
P501: Dispose of contents/container in accordance

with local/regional/international regulations.

Pictogram:



Signal word:

Warning

Warning

Routes of Entry:

Eye Contact. Inhalation. Ingestion. Absorbed through skin.

Potential Health Effects:

Eyes Risk of serious damage to eyes. May cause eye irritation and local inflammation. Possible corneal burn symptoms include stinging, tearing and redness.

Skin Causes skin irritation.

Inhalation Inhalation of dust may cause damage to respiratory tract and can lead to the formation of edemas. Other symptoms can include irritation of nasal passages, sore throat, shortness of breath and coughing.

Ingestion Harmful if swallowed. It may cause irritation and/or a burning sensation in the mouth, pharynx, oesophagus and gastrointestinal tract. May have difficulty swallowing. Symptoms may include abdominal pain, nausea, vomiting and diarrhoea. After uptake of large quantities drop in blood pressure, cardiovascular disorder and collapse. Target organs: kidney, pancreas, liver and lungs.

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS:

No component of this product presented at levels greater than or equal to 0.1 % is identified as probable, possible or confirmed human carcinogen by IARC.

MUTAGENIC EFFECTS:

Not suspected.

TERATOGENIC EFFECTS:

Not suspected.

4. FIRST AID MEASURES

General Advice:

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

Eye Contact:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact:

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation persists.

Inhalation:	If inhaled, move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion:	If swallowed, do not induce vomiting unless directed to do so by medical personnel. Rinse mouth with water. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

5. FIRE-FIGHTING MEASURES

Flammability of Product:	Not combustible.
Auto-ignition Temperature:	Not applicable.
Flash Points:	Not applicable.
Flammable Limits:	Not applicable.
Products of Combustion:	Oxides of sulphur and zinc.
Fire Hazards in Presence of Various Substances:	When heated to decomposition it emits toxic fumes of sulfur oxides (SO _x).
Explosion Hazards in Presence of Various Substances:	Risks of explosion of the product in presence of static discharge: No. Risks of explosion of the product in presence of mechanical impact: No.
Fire Fighting Media and Instructions:	Small fire: Use dry chemicals, CO ₂ , alcohol-resistant foam or water spray. Large fire: Water spray or fog, alcohol-resistant foam.
Protective Clothing (Fire):	Wear NIOSH approved self-contained breathing apparatus or equivalent and full protective gear.
Special Remarks on Fire Hazards:	Prevent fire-fighting water from entering surface water or groundwater.
Special Remarks on Explosion Hazards:	Not available.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Use personal protective equipment. Avoid substance contact, ingestion and inhalation. Ensure adequate ventilation.
Environmental Protection Measures:	Do not allow to enter sewerage system.
Small Spill:	Use appropriate tools and personal protective equipment. Pick up spillage. Dispose of in a waste disposal container. Do not allow to enter sewerage system.
Large Spill:	Use appropriate tools and personal protective equipment. Contain material. Take up spillage limiting generation of dust. Dispose of in a waste disposal container. Do not allow to enter sewerage system.

7. HANDLING AND STORAGE

Handling:

Handle with care in accordance with good industrial hygiene and safety practices. Minimise dust generation. Avoid inhalation of dust. Avoid contact with eyes and skin and any form of ingestion. Wear suitable protective clothing such as overalls, boots, rubber gloves, goggles, nose and mouth protection and wash contaminated clothing daily. Use dust mask or respirator with dust cartridge. Wash thoroughly with soap and water after use or accidental skin contact. Do not eat, drink or smoke during use. Avoid contamination of food, foodstuffs, eating utensils and drinking water. Do not discharge residues or any of the product into rivers, dams and canals.

Storage:

Store in a cool, dry and well-ventilated place away from food, foodstuffs, combustible materials and incompatible substances. Material is hygroscopic. Close container tightly after opening. Store under lock and key and keep out of reach of children, uninformed persons and animals. Minimise dust generation. Access to water and eye wash facility should be available.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the substance handled.

Eyes Splash goggles / safety glasses with side shields.

Body Body-covering clothing / full suit.

Respiratory Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Hands Gloves, nitrile rubber gloves.

Feet Boots.

Hygiene Measures:

Handle in accordance with good industrial hygiene and safety practices. Remove and wash contaminated clothing. Wash hands after use and before eating or smoking. Wash promptly if skin becomes contaminated or wet.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling

this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State and Appearance:	Colourless to white free-flowing powder.
Odour:	Odourless.
pH:	4.0 – 5.2
Boiling Point:	Not available.
Melting Point:	Not available.
Thermal Decomposition:	240 °C (release of crystalline water). ~ 600 °C (anhydrous substance).
Density (20 °C):	3.28 g/cm ³
Bulk density:	~ 500 kg/m ³
Vapour Pressure:	Not available.
Vapour Density:	Not available.
Volatility:	Not available.
Odour Threshold:	Not available.
Evaporation Rate:	Not available.
VOC:	Not available.
Solubility in water (20 °C)	~ 350 g/l

10. STABILITY AND REACTIVITY

Stability and Reactivity:	The product is stable under recommended conditions of storage and use.
Conditions of Instability:	High temperatures will cause decomposition. Material is hygroscopic – avoid contact with moisture. Do not store in contact with alkalis and oxidizing agents.
Incompatibility with Various Substances:	Avoid contact with high concentrations of nitrates, alkalis, tannins and oxidising agents. Lead, calcium, strontium salts, borax. In molten state reacts violently with (some) metals.
Hazardous Decomposition Products:	Toxic sulphur dioxide fumes. Zinc / zinc oxides.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicity:	Acute oral toxicity (LD50):	2,949 mg/kg [RAT] (anhydrous substance).
	Acute dermal toxicity (LD50):	>2,000 mg/kg [RAT].

Chronic Effects on Humans:	<p><u>CARCINOGENIC EFFECTS:</u> No component of this product presented at levels greater than or equal to 0.1 % is identified as probable, possible or confirmed human carcinogen by IARC.</p> <p><u>MUTAGENIC EFFECTS:</u> Not suspected.</p> <p><u>TERATOGENIC EFFECTS:</u> Not suspected.</p>
Acute Effects on Humans:	<p>Harmful in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering and itching.</p> <p>Skin irritant. Skin inflammation is characterized by itching, scaling, reddening or, occasionally blistering.</p> <p>May be harmful if inhaled. Inhalation may cause damage or irritation of respiratory tract. Symptoms can include irritation of nasal passages, sore throat, shortness of breath and coughing.</p> <p>Harmful if swallowed. It can cause irritation and/or a burning sensation in the mouth, pharynx, oesophagus and gastrointestinal tract. Other symptoms may include abdominal pain, nausea, vomiting and diarrhoea.</p>
Synergetic Products: (Toxicologically)	Not available.
Irritancy:	Draize Test: Not available.
Sensitization:	Not available.
Toxicity to Reproductive System:	Tests on laboratory animals for reproductive effects are cited in Registry of Toxic Effects on Chemical Substances (RTECS).

12. ECOLOGICAL INFORMATION

Ecotoxicity:	<p>Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.</p> <p>Fish: <i>Onchorhynchus mykiss</i> 0.43 mg/l (96 h) (LC50): Referred to the cation) (Lit).</p> <p>Daphnia: <i>Daphnia Magna</i> 0.15 mg/l (48 h) (Lit). (EC50):</p> <p>Algae: <i>Sc.quadricauda</i> 0.52 mg/l (5 d) (IC50): (anhydrous substance).</p>
Toxicity of the Products of Biodegradation:	Not available.
Mobility:	Do not allow to enter water or soil.

13. DISPOSAL CONSIDERATIONS

Treatment: Consultation with a permitted waste disposal site (TSD) should be accomplished. Always contact a permitted waste disposal site (TSD) to assure compliance with all current, local, national, and Governmental regulations.

14. TRANSPORT INFORMATION

Land Transport: *ADR / RID*
UN Number: 3077 Class: 9 Packing group: III
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,
N.O.S. (Zinc Sulphate).

Marine Transport: *IMDG*
UN Number: 3077 Class: 9 Packing group: III
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,
N.O.S. (Zinc Sulphate).

Air Transport: *IATA*
UN Number: 3077 Class: 9 Packing group: III
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,
N.O.S. (Zinc Sulphate).

15. REGULATORY INFORMATION

Republic of South Africa Regulations: National Water Act 36 of 1998.
Occupational Health and Safety Act, 1993.
Environmental Conservation Act 73 of 1989.
Hazardous Substances Act, 1973.
Provincial Ordinances and Local By-laws.

GHS Classification:

Pictograms:



Danger



Warning



Warning

Signal Word:

Hazard Statements: H302: Harmful if swallowed.
H318: Causes serious eye damage.
H410: Very toxic to aquatic life with long lasting effect.

Precautionary Statements: P301, 310: If swallowed immediately call a poison center or doctor / physician.
P305, 351, 388: If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P315: Get immediate medical advice/attention.

Disposal: P501: Dispose of contents/container in accordance with local / regional / international regulations.

16. OTHER INFORMATION

Label Requirement: Keep away from food and foodstuffs.

Emergency Contact: KIMLEIGH CHEMICALS SA (PTY) LTD
TEL NO. +27 (18) 293-1028

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