

Material Safety Data Sheet

(This document conforms to ISO 11014-1)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Supplier / Manufacturer:



Kimleigh Chemicals SA (Pty) Ltd
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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 Oxide.
Synonyms: Zinc white, zinc monoxide.
Product ranges: Animade and Fertion.
Chemical Family: Inorganic metal oxides.
Material Uses: Animal feeds and Fertilizers.

2. COMPOSITION / INFORMATION ON INGREDIENTS

Substance Name: Zinc Oxide.
Assay % by Weight: 98 % minimum.
Appearance: White, odourless powder.
Molecular Formula: ZnO
Molar Mass: 81.37 g/mol
CAS Number: 1314-13-2
EC Number: 215-222-5
EC Index Number: 030-013-00-7

3. HAZARD IDENTIFICATION

Physical State and Appearance: White, odourless powder.

Emergency Overview: Dangerous to the environment. Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

The product should be handled with care usual when dealing with chemicals.

Routes of Entry: Eye Contact. Inhalation. Ingestion. Absorbed through skin.

Potential Health Effects:

<i>Eyes</i>	May cause eye irritation and local inflammation.
<i>Skin</i>	Causes skin irritation.

Inhalation Inhalation of dust and fumes may cause metal fume fever. Symptoms may include fever, chills, myalgias, vomiting and malaise which most commonly result from inhalation of freshly formed zinc oxide fumes. Complete recovery generally occurs within 24 to 48 hours.

Ingestion It can cause irritation and/or a burning sensation in the mouth, pharynx, oesophagus and gastrointestinal tract. Symptoms may include abdominal pain, nausea and vomiting.

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:

Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast.

Genotoxicity in vitro – Hamster-Embryo

Unscheduled DNA synthesis.
Morphological transformation.
Sister chromatid exchange.

Genotoxicity in vivo – Guinea pig-Inhalation

Unscheduled DNA synthesis.

TERATOGENIC EFFECTS:

Not available.

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.
Product of Combustion:	Zinc oxides.
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:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Small fire: Use dry chemicals, CO ₂ , alcohol-resistant foam or water spray. Large fire: Water spray or fog, alcohol-resistant foam.
Protective Cloting (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. Slow addition of zinc oxide to cover linseed oil varnish causes generation of heat and ignition.
Special Remarks on Explosion Hazards:	May explode when mixed with chlorinated rubber. Zinc oxide and magnesium / aluminium can react explosively when heated.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Use personal protective equipment. Avoid substance contact 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
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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, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Occupational exposure limits:

Threshold limit value (ACGIH): TWA 2mg/m³ respirable fraction.

Short term exposure (ACGIH): 10mg/ m³ respirable fraction.

Permissible exposure limit (OSHA): 5mg/ m³ (fume and respirable fraction).
15mg/ m³ total dust.

Immediately dangerous to life or health (NIOSH): 500mg/ m³.

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:	White powder.
Odour:	Odourless.
Taste:	Bitter.
pH (50g/ℓ H₂O solution at 20°C)	ca. 7
Boiling Point:	Not available.
Melting Point:	1975 °C.
Density (20°C):	5.61 g/m ³
Bulk density:	ca. 700 kg/m ³
Vapour Pressure:	0 mmHg (approx).
Vapour Density:	No data available.
Volatility:	No data available.
Odour Threshold:	No data available.
Evaporation Rate:	No data available.
VOC:	Not available.
Solubility:	Insoluble in water.

10. STABILITY AND REACTIVITY

Stability and Reactivity:	The product is stable under recommended conditions of storage and use.
Incompatibility with Various Substances:	Avoid contact with strong oxidizing agents, alkali metals, alkaline earth metals, hydrogen peroxide, linseed oil. Reacts violently with aluminium and magnesium powders and with chlorinated rubber on heating causing fire and explosion hazard.
Hazardous Decomposition Products:	Hazardous decomposition products formed under fire conditions: zinc oxides.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicity:	Acute oral toxicity (LD50):	>5000 mg/kg [RAT] LDLO 500 mg/kg [HUMAN]
	Inhalative (LC50):	2500 mg/m ³ [MOUSE]
	Skin irritation:	Mild. 500 mg/24 h [RABBIT]
	Eye irritation:	Mild. 500 mg/24 h [RABBIT]
Chronic Effects on Humans:	<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.
	<u>MUTAGENIC EFFECTS:</u>	Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast.
	Genotoxicity in vitro – Hamster-Embryo	Unscheduled DNA synthesis. Morphological transformation. Sister chromatid exchange.
	Genotoxicity in vivo – Guinea pig-Inhalation	Unscheduled DNA synthesis.
	<u>TERATOGENIC EFFECTS:</u>	Not available.
	Acute Effects on Humans:	May cause mechanical eye irritation and conjunctivitis. Mild skin irritant. May be harmful if inhaled. Inhalation may cause damage or irritation of respiratory tract. Inhalation of large quantities of finely divided zinc oxide dust can cause “metal fume fever”. Zinc oxide dust is generally considered a nuisance dust; adverse effects are unlikely when exposures are kept under reasonable control. Symptoms can include headache, chills, fever, sweats, muscle ache, nausea, vomiting, difficulty breathing, dry throat, metallic taste in the mouth, blurred vision and coughing. May also affect the liver. Harmful if swallowed.
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:	Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.
	Fish: <i>Onchorhynchus mykiss</i> (LC50): 1.1 mg/l (96 h)
	Daphnia: <i>Daphnia Magna</i> (EC50): > 1 mg/l (48 h)
	Algae: <i>Pseudokirchneriella subcapitata</i> (IC50): 0.17 mg/l (72 h)
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.
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14. TRANSPORT INFORMATION

Land Transport:	<i>ADR / RID</i> UN-Number: 3077 Class: 9 Packing group: III ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Oxide)
Marine Transport:	<i>IMDG</i> UN-Number: 3077 Class: 9 Packing group: III ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Oxide)
Air Transport:	<i>IATA</i> UN-Number: 3077 Class: 9 Packing group: III ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Oxide)
Segregation Group:	0007 Heavy metals and their salts (incl. their organometallic compounds).

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.
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GHS Classification:

Pictograms:



Signal Word:

Warning

Hazard Statements:

H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statements:

P273: Avoid release to the environment.
P391: Collect spillage.

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

16. OTHER INFORMATION

Label Requirements: Keep away from food and foodstuffs.

Emergency Contact: KIMLEIGH CHEMICALS SA (PTY) LTD
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