


Magnesium Oxide

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:	Magnesium Oxide.
Synonyms:	Magnesia.
Product ranges:	Animade and Fertion.
Chemical Family:	Inorganic oxides.
Material Uses:	Component of animal feeds and fertilizers.

2. COMPOSITION / INFORMATION ON INGREDIENTS

Substance Name:	Magnesium Oxide.
Assay % by Weight:	94 % minimum.
Appearance:	White powder.
Molecular Formula;	MgO
Molar Mass:	40.3 g/mol
CAS Number:	1309-48-4
EC Number:	215-171-9
EC Index Number:	025-199-09-0

3. HAZARD IDENTIFICATION

Physical State and Appearance:	White powder.
Routes of Entry:	Eye Contact. Inhalation. Ingestion. Absorbed through skin.
Potential Health Effects:	<i>Eyes</i> May cause slight eye irritation and local inflammation. <i>Skin</i> May be harmful if absorbed through skin. May cause slight skin irritation. <i>Inhalation</i> May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion May be harmful if swallowed.

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

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: Magnesium oxide.

Fire Hazards in Presence of Various Substances: Not reported.

Explosion Hazards in Presence of Various Substances:	Risks of explosion of the product in presence of static discharge: No.
Fire Fighting Media and Instructions:	Risks of explosion of the product in presence of mechanical impact: No. 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. Magnesium oxide may ignite and explode when heated with sublimed sulfur, magnesium powder or aluminium powder. It reacts violently with interhalogens (bromine pentafluoride, chlorine trifluoride). When combined with phosphorus pentachloride it incandescens.
Special Remarks on Explosion Hazards:	Magnesium Oxide may ignite and explode when heated with sublimed sulfur, magnesium powder or aluminium powder.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Use personal protective equipment. Avoid substance contact and inhalation. Avoid dust formation. 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. 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 product or residues 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 air and moisture sensitive. 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.

Exposure Limits: TWA: 15 mg/m³ from OSHA (PEL) Inhalation Total
TWA: 10 mg/m³ from ACGIH (TLV) Inhalation Total

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State and Appearance: White powder.

Odour: Odourless.

pH (saturated solution, 20 °C): 10.3

Boiling Point: 3,600 °C.

Melting Point: 2,800 °C.

Thermal Decomposition: Not available.

Density / Specific gravity (25 °C): 3.58 g/m³

Bulk Density:	ca. 100 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.
Log K_{ow}	Not available.
Ionicity (in water)	Not available.
Dispersion Properties	Not available.
Solubility in water (20 °C)	Insoluble.

10. STABILITY AND REACTIVITY

Stability and Reactivity:	The product is stable under recommended conditions of storage and use.
Conditions of Instability:	Material readily absorbs moisture and carbon dioxide when exposed to air. Hydrates slowly in contact with moisture. Do not store in contact with strong acids and oxidizing agents.
Incompatibility with Various Substances:	Avoid contact with strong oxidizing agents and strong acids. May react violently with hydrogen trisulfide, phosphorus, sulfur trioxide, halogens, interhalogens including trifluoride, phosphorus pentachloride, chlorine trifluoride and bromine pentafluoride. May ignite and explode when heated with sublimed sulfur, magnesium powder or aluminium powder. Incompatible with alcohols, aldehydes, alkylene oxides, ammonium nitrate, cresols, caprolactam solution, epichlorohydrin, glycols, hydrazinium nitrate, organic anhydrides, maleic anhydride, phenols and selenium oxychloride. This material forms heat-sensitive explosive material with anilinium perchlorate and increases the heat, friction and shock sensitivity of explosives nitroalkanes, hydraziniumperchlorate and silver azide.
Hazardous Decomposition Products:	Magnesium oxide.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicity:	(LD50) Acute Oral: 810 mg/kg [MOUSE]
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>

TERATOGENIC EFFECTS:

Not suspected.

Acute Effects on Humans:

May cause eye irritation.

May cause slight skin irritation.

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.

May be 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.

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:

Fish: *Onchorhynchus mykiss* (LC50):

Not reported.

Daphnia: *Daphnia Magna* (EC50):

Not reported.

Algae: *Sc.quadricauda* (IC50):

Not reported.

Biodegradable/OECD:

No data available.

Mobility:

Do not allow to enter water or soil.

Toxicity of the Products of Biodegradation:

No data available.

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. (Magnesium Oxide).

Marine Transport:

IMDG

UN Number: 3077 Class: 9 Packing group: III
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,
N.O.S. (Magnesium Oxide).

Air Transport:

IATA

UN Number: 3077 Class: 9 Packing group: III
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,
N.O.S. (Magnesium Oxide).**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.**16. OTHER INFORMATION****Precautionary Statements:** P260: Do not breathe dust.**Label Requirement:** Keep away from food and foodstuffs.**Emergency Contact:** KIMLEIGH CHEMICALS SA (PTY) LTD
TEL NO. +27 (18) 293-1028**Disclaimer:**

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