

Manganous 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:	Manganous Oxide.
Synonyms:	Manganese (II) Oxide, Manganese Monoxide.
Product ranges:	Animade and Fertion.
Chemical Family:	Transition metal oxides.
Material Uses:	Animal feeds, fertilizers, food additive and dietary supplement.

2. COMPOSITION / INFORMATION ON INGREDIENTS

Substance Name:	Manganous Oxide.
Assay % by Weight:	76 % minimum.
Appearance:	Green powder.
Molecular Formula;	MnO
Molar Mass:	70.94 g/mol
CAS Number:	1344-43-0
EC Number:	215-695-8

3. HAZARD IDENTIFICATION

Physical State and Appearance:	Green powder.
Emergency Overview:	The product should be handled with care usual when dealing with chemicals.
GHS Classification:	H311: Toxic in contact with skin. H315: Causes skin irritation. H319: Causes serious eye irritation. H335: May cause respiratory irritation.
Pictogram:	 
Signal word:	Warning Danger
Routes of Entry:	Eye Contact. Inhalation. Ingestion. Absorbed through skin.
Potential Health Effects:	

<i>Eyes</i>	May cause eye irritation and local inflammation. Possible corneal burn symptoms include stinging, tearing and redness.
<i>Skin</i>	May be harmful if absorbed through skin. May cause skin irritation.
<i>Inhalation</i>	May be harmful if inhaled. Causes respiratory tract irritation. Other symptoms can include irritation of nasal passages, sore throat, shortness of breath and coughing.
<i>Ingestion</i>	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.

Chronic manganese poisoning primarily involves the central nervous system. Early symptoms include languor, sleepiness and weakness in the legs. A solid mask-like appearance of the face, emotional disturbances such as uncontrollable laughter and a spastic gait with tendency to fall in walking are findings in more advanced cases. High incidence of pneumonia has been found in workers exposed to the dust or fume of some manganese compounds.

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. Remove contact lenses if present and easy to do so. Continue rinsing. 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 off with soap and plenty of water. 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:	Manganese oxides.
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. 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 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. 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. Store under lock and key and keep out of reach of children, uninformed persons and animals. 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.

Personal Protection:

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

Eyes Safety glasses with side shields / face shield.

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:	Green powder.
Odour:	Not available.
pH:	Not available.
Boiling Point:	Not available.
Melting Point:	1650 °C (will oxidize to Mn ₃ O ₄ if heated in air above 250 °C).
Thermal Decomposition:	Not available.
Density / Specific gravity:	5.45 g/m ³
Bulk density (not compacted) (20°C):	1.281 kg/ℓ.
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 in water.

10. STABILITY AND REACTIVITY

Stability and Reactivity:	The product is stable under recommended conditions of storage and use.
Conditions of Instability:	Not available.
Incompatibility with Various Substances:	Avoid contact with strong oxidizing agents such as H ₂ O ₂ , F ₂ , Ca(OCl) ₂ and organic peroxides.
Hazardous Decomposition Products:	Manganese oxides.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicity:	Acute dermal (LD50): 422 mg/kg [MOUSE]
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.

MUTAGENIC EFFECTS:

Not suspected.

TERATOGENIC EFFECTS:

Not suspected.

Acute Effects on Humans:

May cause eye irritation. Inflammation of the eye is characterized by redness, watering and itching.

May be harmful if absorbed through skin. Skin irritant. Skin inflammation is characterized by itching, scaling, reddening or, occasionally blistering.

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. Target organs: lungs / pulmonary function, central nervous system.

May be harmful if swallowed. It may 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.

Chronic manganese poisoning primarily involves the central nervous system. Early symptoms include languor, sleepiness and weakness in the legs.

A stolid mask-like appearance of the face, emotional disturbances such as uncontrollable laughter and a spastic gait with tendency to fall in walking are findings in more advanced cases.

High incidence of pneumonia has been found in workers exposed to the dust or fume of some manganese compounds.

**Synergetic Products:
(Toxicologically)**

Not available.

Irritancy:

Draize Test: Not available.

Sensitization:

Not available.

**Toxicity to Reproductive
System:**

Not available.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Daphnia: Daphnia Magna (EC50): 0.15 mg / ℓ / 48h (Lit)
Algae: Sc.quadricauda (IC50): 0.52 mg / ℓ / 5d

Biodegradable/OECD:

Not available.

Mobility:

Do not allow to enter water or soil.

**Toxicity of the Products of
Biodegradation:**

Not 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. (Manganous Oxide)

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

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

GHS Classification:

Pictograms:



Signal Word:

Warning

Danger

Hazard Statements: H311: Toxic in contact with skin.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.

Precautionary Statements: P261: Avoid breathing dust / fume / gas / mist / vapours / spray.
P280: Wear protective gloves / protective clothing.
P305+351+388: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
P312: Call a POISON CENTER or doctor / physician if you feel unwell.

16. OTHER INFORMATION

Label Requirement: Keep away from food and foodstuffs.

**NFPA Ratings
(Scale 0-4)**

Health	1
Fire	0
Reactivity	0

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

Disclaimer: *KIMLEIGH CHEMICALS SA (PTY) LTD provides the information contained herein in good faith, but does not assume any liability whatsoever for its accuracy or completeness. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.*