


# Material Safety Data Sheet

(This document conforms to ISO 11014-1)

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<b>Supplier / Manufacturer:</b>	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
	
<b>Chemical Name:</b>	Manganese Sulphate Monohydrate.
<b>Product ranges:</b>	Animade and Fertion.
<b>Chemical Family:</b>	Transition metal sulphates.
<b>Material Uses:</b>	Animal feeds, fertilizers, pesticides and food additive.

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

<b>Substance Name:</b>	Manganese Sulphate Monohydrate.
<b>Assay % by Weight:</b>	95 % minimum.
<b>Appearance:</b>	White / slightly pink powder.
<b>Molecular Formula;</b>	$MnSO_4 \bullet H_2O$
<b>Molar Mass:</b>	169.01 g/mol
<b>CAS Number:</b>	10034-96-5
<b>EC Number:</b>	232-089-9
<b>EC Index Number:</b>	025-003-00-4

## 3. HAZARD IDENTIFICATION

<b>Physical State and Appearance:</b>	White / slightly pink powder.
<b>Emergency Overview:</b>	HARMFUL: Danger of serious damage to health by prolonged exposure through inhalation and if swallowed. Toxic to aquatic organisms, may cause long term adverse effects on the aquatic environment.  Specific target organ toxicity – repeated exposure (Category 2) Chronic aquatic toxicity (Category 2)  The product should be handled with care usual when dealing with chemicals.
<b>GHS Classification:</b>	H373: May cause damage to organs through prolonged or repeated exposure.  H411: Toxic to aquatic life with long lasting effects.

**Pictogram:**



**Signal word:**

Warning

**Routes of Entry:**

Eye Contact. Inhalation. Ingestion. Absorbed through skin.

**Potential Health Effects:**

*Eyes* May cause eye irritation and local inflammation. Possible corneal burn symptoms include stinging, tearing and redness.

*Skin* May cause skin irritation. May be harmful if absorbed through skin.

*Inhalation* May cause respiratory tract irritation. Other symptoms can include irritation of nasal passages, sore throat, shortness of breath and coughing.

*Ingestion* 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.

Men exposed to manganese dusts showed a decrease in fertility. 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 of 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 immediately.

**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:** Toxic sulphur and Manganese oxides.

**Fire Hazards in Presence of Various Substances:** When heated to decomposition it emits toxic fumes of sulfur oxides (SO<sub>x</sub>) and manganese 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:**  
Small fire: Use dry chemicals, CO<sub>2</sub>, 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. Product is hygroscopic – close container after opening. Recommended storage temperature: 2 – 8 °C. 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 / dust mask. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

*Hands* 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

<b>Physical State and Appearance:</b>	White / slightly pink powder.
<b>Odour:</b>	Odourless.
<b>pH (50 g/ℓ at 20 °C):</b>	3.0 – 5.0
<b>Boiling Point:</b>	850 °C
<b>Melting Point:</b>	700 °C
<b>Thermal Decomposition:</b>	Not available.
<b>Density / Specific gravity:</b>	2.95 g/m <sup>3</sup>
<b>Bulk Density (not compacted) (20 °C):</b>	Not available.
<b>Vapour Pressure:</b>	Not available.
<b>Vapour Density:</b>	Not available.
<b>Volatility:</b>	Not available.
<b>Odour Threshold:</b>	Not available.
<b>Evaporation Rate:</b>	Not available.
<b>VOC:</b>	Not available.
<b>Log K<sub>ow</sub></b>	Not available.
<b>Ionicity (in water)</b>	Not available.
<b>Dispersion Properties</b>	Not available.
<b>Solubility in water (20 °C)</b>	> 100g / 100mℓ.

## 10. STABILITY AND REACTIVITY

<b>Stability and Reactivity:</b>	The product is stable under recommended conditions of storage and use.
<b>Conditions of Instability:</b>	Avoid contact with moisture as product is hygroscopic.
<b>Incompatibility with Various Substances:</b>	Not available.
<b>Hazardous Decomposition Products:</b>	Toxic sulphur dioxide fumes. Manganese oxides.
<b>Hazardous Polymerization:</b>	Will not occur.

## 11. TOXICOLOGICAL INFORMATION

<b>Toxicity:</b>	LD50 Oral:	2,150 mg/kg [RAT]
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**Chronic Effects on Humans:** Harmful: danger of serious damage to health by prolonged exposure if swallowed.

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.

**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. May cause skin irritation. Skin irritation is characterized by itching, scaling, reddening or, occasionally blistering.

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.

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.

Men exposed to manganese dusts showed a decrease in fertility. 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 of 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:** Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

Daphnia: Daphnia Magna (EC50): Not available.

Alga: Sc.quadricauda (IC50): Not available.

**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. (Manganese Sulphate Monohydrate)

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

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

### 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

**Hazard Statements:** H373: May cause damage to organs through prolonged or repeated exposure.  
H411: Toxic to aquatic life with long lasting effects.

**Precautionary Statements:** P273: Avoid release to the environment.

## 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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