

### SECTION 1: Identification

#### 1.1. Product identifier

Trade name	: MANGANESE SULFATE 1hydr
Type of product	: Hygroscopic substance. Preventive measures apply to the substance in dry state only
EC-No.	: 232-089-9
EC Index-No.	: 025-003-00-4
CAS-No.	: 10034-96-5
UN-No. (ADR)	: 3077
Product code	: 113095xxx
Formula	: MnSO4.H2O

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended uses and restrictions	: For laboratory use only
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#### 1.3. Supplier's details

Labchem (Pty)Ltd  
 6 Wakefield Road  
 Founders Hill  
 1609 Johannesburg - South Africa  
 T +27 11 452 1116 - F +27 86 588 0293  
[techlab@labchem.co.za](mailto:techlab@labchem.co.za) - [www.labchem.co.za](http://www.labchem.co.za)

#### 1.4. Emergency telephone number

Emergency number	: +27 11 452 1116
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### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to the United Nations GHS

Specific target organ toxicity — Repeated exposure, Category 2	H373
Hazardous to the aquatic environment — Acute Hazard, Category 2	H401
Hazardous to the aquatic environment — Chronic Hazard, Category 2	H411
Full text of H statements : see section 16	

#### 2.2. Label elements

##### Labelling according to the United Nations GHS

Hazard pictograms (GHS-ZA) :



Signal word (GHS-ZA)	: Warning
Hazard statements (GHS-ZA)	: H373 - May cause damage to organs through prolonged or repeated exposure. H411 - Toxic to aquatic life with long lasting effects.
Precautionary statements (GHS-ZA)	: P260 - Do not breathe dust/fume/gas/mist/vapours/spray. P273 - Avoid release to the environment. P314 - Get medical advice/attention if you feel unwell. P391 - Collect spillage. P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

#### 2.3. Other hazards

Adverse physicochemical, human health and environmental effects	: May cause damage to organs through prolonged or repeated exposure, Toxic to aquatic life, Toxic to aquatic life with long lasting effects.
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### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Substance identification codes: See section 1.1

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According to SANS 10234:2019 and SANS 11014:2010

Name	Product identifier	%	Classification according to the United Nations GHS
manganese(II)sulfate, monohydrate (Main constituent)	(CAS-No.) 10034-96-5	≥ 98	STOT RE 2, H373 Aquatic Acute 2, H401 Aquatic Chronic 2, H411

Full text of H-statements: see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general	: Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. Get medical advice/attention if you feel unwell.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
First-aid measures after skin contact	: Rinse with water. Soap may be used. Take victim to a doctor if irritation persists. Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists. Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Call Poison Information Centre ( <a href="http://www.big.be/antigif.html">www.big.be/antigif.html</a> ). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Call a poison center or a doctor if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation	: AFTER INHALATION OF DUST: Coughing. ON HEATING: Metal fume fever.
Symptoms/effects after skin contact	: Slight irritation. Red skin.
Symptoms/effects after eye contact	: Redness of the eye tissue.
Symptoms/effects after ingestion	: AFTER INGESTION OF HIGH QUANTITIES: Irritation of the gastric/intestinal mucosa.
Chronic symptoms	: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Coughing. Respiratory difficulties. Impairment of the nervous system. Brain affection. Feeling of weakness. Loss of appetite. Behavioural disturbances. Slurred speech. Movement disturbances. Myasthenia. Tremor. Impaired concentration. Emotional instability.
Potential adverse human health effects and symptoms	: Slightly harmful if swallowed. Slightly irritant to skin.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media	: Adapt extinguishing media to the environment for surrounding fires. Water spray. Dry powder. Foam.
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### 5.2. Special hazards arising from the substance or mixture

Fire hazard	: DIRECT FIRE HAZARD: Non combustible.
Hazardous decomposition products in case of fire	: On burning: release of toxic and corrosive gases/vapours (sulphur oxides) and formation of metallic fumes.

### 5.3. Advice for firefighters

Precautionary measures fire	: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.
Firefighting instructions	: Dilute toxic gases with water spray. Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.
Protection during firefighting	: Heat/fire exposure: compressed air/oxygen apparatus. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

No additional information available

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According to SANS 10234:2019 and SANS 11014:2010

### 6.1.1. For non-emergency personnel

- Protective equipment : Gloves. Protective clothing. Dust cloud production: compressed air/oxygen apparatus.
- Emergency procedures : Ventilate spillage area. Mark the danger area. Prevent dust cloud formation. No naked flames. Wash contaminated clothes. Do not breathe dust/fume/gas/mist/vapours/spray.

### 6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Avoid release to the environment. Prevent soil and water pollution. Prevent spreading in sewers.

### 6.3. Methods and material for containment and cleaning up

- For containment : Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Dam up the solid spill. Knock down/dilute dust cloud with water spray. Collect spillage.
- Methods for cleaning up : Mechanically recover the product. Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. Carefully collect the spill/leftovers. Take collected spill to manufacturer/competent authority. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.
- Other information : Dispose of materials or solid residues at an authorized site.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. Avoid raising dust. Keep away from naked flames/heat. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Keep container tightly closed. Do not breathe dust/fume/gas/mist/vapours/spray.
- Hygiene measures : Observe very strict hygiene - avoid contact. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in a well-ventilated place. Keep cool.
- Storage area : Store in a dry area. Unauthorized persons are not admitted. Meet the legal requirements.
- Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources.
- Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. water/moisture.
- Special rules on packaging : SPECIAL REQUIREMENTS: closing. watertight. dry. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
- Packaging materials : SUITABLE MATERIAL: cardboard. plastics. glass.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No additional information available

### 8.2. Appropriate engineering controls

- Appropriate engineering controls : Ensure good ventilation of the work station.
- Environmental exposure controls : Avoid release to the environment.

### 8.3. Individual protection measures, such as personal protective equipment (PPE)

- Materials for protective clothing : GIVE GOOD RESISTANCE: butyl rubber. PVC
- Hand protection : Gloves
- Eye protection : Safety glasses. In case of dust production: protective goggles. Safety glasses
- Skin and body protection : Protective clothing
- Respiratory protection : Dust production: dust mask with filter type P3

Personal protective equipment symbol(s):



### 8.4. Exposure limit values for the other components

No additional information available

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According to SANS 10234:2019 and SANS 11014:2010

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Crystalline solid. Crystalline powder.
Molecular mass	: 169.02 g/mol
Colour	: Rose.
Odour	: Odourless.
Odour threshold	: No data available
pH	: 3.0 – 3.5 (5 %)
pH solution	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: No data available
Melting point	: 57 °C
Freezing point	: Not applicable
Boiling point	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: > 117 °C
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: No data available
Vapour pressure at 50 °C	: No data available
Relative vapour density at 20 °C	: Not applicable
Relative density	: 3
Relative density of saturated gas/air mixture	: No data available
Density	: 2950 kg/m <sup>3</sup>
Relative gas density	: No data available
Solubility	: Soluble in water. Water: 100 g/100ml
Partition coefficient n-octanol/water (Log Pow)	: No data available
Partition coefficient n-octanol/water (Log Kow)	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: Not applicable
Lower explosive limit (LEL)	: No data available
Upper explosive limit (UEL)	: No data available

#### 9.2. Other information

VOC content	: 0 %
Other properties	: Hygroscopic. Acid reaction.

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

#### 10.2. Chemical stability

Hygroscopic.

#### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

#### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

#### 10.5. Incompatible materials

No additional information available

#### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

### SECTION 11: Toxicological information

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According to SANS 10234:2019 and SANS 11014:2010

### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
Skin corrosion/irritation	: Not classified pH: 3.0 – 3.5 (5 %)
Serious eye damage/irritation	: Not classified pH: 3.0 – 3.5 (5 %)
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Slightly harmful if swallowed. Slightly irritant to skin.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general	: Dangerous for the environment. Toxic to aquatic life. Toxic to aquatic life with long lasting effects.
Ecology - air	: Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water	: Toxic to crustacea. Harmful to fishes. Mild water pollutant (surface water). pH shift.
Hazardous to the aquatic environment, short-term (acute)	: Toxic to aquatic life.
Hazardous to the aquatic environment, long-term (chronic)	: Toxic to aquatic life with long lasting effects.

#### MANGANESE SULFATE 1hydr (10034-96-5)

LC50 fish 1	33.8 mg/l (96 h, Pimephales promelas, Anhydrous form)
EC50 Daphnia 1	8.28 mg/l (48 h, Daphnia magna, Anhydrous form)

### 12.2. Persistence and degradability

#### MANGANESE SULFATE 1hydr (10034-96-5)

Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

### 12.3. Bioaccumulative potential

#### MANGANESE SULFATE 1hydr (10034-96-5)

Bioaccumulative potential	No additional information available
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### 12.4. Mobility in soil

#### MANGANESE SULFATE 1hydr (10034-96-5)

Mobility in soil	No additional information available
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### 12.5. Other adverse effects

Ozone	: Not classified
Other adverse effects	: No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
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According to SANS 10234:2019 and SANS 11014:2010

Product/Packaging disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle/reuse. Remove to an authorized dump (Class I). Precipitate/make insoluble.

Additional information : Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

### SECTION 14: Transport information

In accordance with SANS / IMDG / IATA

SANS	IMDG	IATA
<b>14.1. UN number</b>		
3077	3077	3077
<b>14.2. Proper Shipping Name</b>		
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.	Environmentally hazardous substance, solid, n.o.s.
<b>14.3. Transport hazard class(es)</b>		
9	9	9
		 Not applicable
<b>14.4. Packing group</b>		
III	III	III
<b>14.5. Environmental hazards</b>		
Dangerous for the environment : Yes	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available		

### 14.6. Special precautions for user

#### - SANS

Transport regulations (UN) : Subject to the provisions  
Special provisions (SANS) : 179, 274, 331, 335  
Limited quantities (SANS) : 5 kg  
Limited quantities (SANS) : 5 kg  
Packagings, large packagings and IBCs : P002, IBC08, LP02  
Packing instructions (SANS)  
Packagings, large packagings and IBCs Special packing instructions (SANS) : PP12, B3  
Portable tank and bulk containers instructions (SANS) : T1, BK2  
Portable tank and bulk container special provisions (SANS) : TP33

#### - IMDG

Transport regulations (IMDG) : Subject to the provisions  
Special provisions (IMDG) : 274, 335, 966, 967, 969  
Limited quantities (IMDG) : 5 kg  
Excepted quantities (IMDG) : E1  
Packing instructions (IMDG) : LP02, P002  
Special packing provisions (IMDG) : PP12  
IBC packing instructions (IMDG) : IBC08  
IBC special provisions (IMDG) : B3  
Tank instructions (IMDG) : BK1, BK2, BK3, T1  
Tank special provisions (IMDG) : TP33  
EmS-No. (Fire) : F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE  
EmS-No. (Spillage) : S-F - SPILLAGE SCHEDULE Foxtrot - WATER-SOLUBLE MARINE POLLUTANTS  
Stowage category (IMDG) : A

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According to SANS 10234:2019 and SANS 11014:2010

### - IATA

Transport regulations (IATA)	: Subject to the provisions
PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y956
PCA limited quantity max net quantity (IATA)	: 30kgG
PCA packing instructions (IATA)	: 956
PCA max net quantity (IATA)	: 400kg
CAO packing instructions (IATA)	: 956
CAO max net quantity (IATA)	: 400kg
Special provisions (IATA)	: A97, A158, A179, A197
ERG code (IATA)	: 9L

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health, and environmental national regulations specific for the product

Regulatory reference	: SANS 10234:2008; SANS 11014:2010; SANS 10228:2012;SANS 10229:2010; SANS 10232(1,2,4), SANS 10231:2018; Occupational Health and Safety Act 85 of 1993; National Road Traffic Act 93 of 1996.
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## SECTION 16: Other information

Issue date	: 07/07/2020
Revision date	: 07/07/2025

Full text of H-statements:

H373	May cause damage to organs through prolonged or repeated exposure.
H401	Toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects.

SDS South Africa

*The data provided in this Safety Data Sheet (SDS) is correct to the best of our knowledge. The data relates to the specific product as named and is intended as a guide to the safe handling of the product in all its facets. The data may no longer be valid if the product is used in any process or in combination with other products. This SDS is not a quality specification nor any form of guarantee.*