



Manganese Sulfate Solution

SAFETY DATA SHEET

1. IDENTIFICATION

Product identifier	Manganese Sulfate Solution
Other means of identification	None assigned
Recommended use of the chemical	Liquid trace-element fertiliser for crop production.
Restrictions on Use	Use only for the intended application.
Details of Australian manufacturer or importer	Australian manufacturer / importer: Wilchem Pty Ltd ABN: 44 614 126 573 Address: 39 Jonal Drive, Cavan, SA 5094 AUSTRALIA Telephone: 08 8359 6855 Email: admin@wilchem.com.au Website: www.wilchem.com.au
Emergency phone number	Poisons Information Centre: 13 11 26 , (Australia, 24 hours)

2. HAZARDS IDENTIFICATION

Classification of the hazardous chemical

Classified as a hazardous chemical in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals, 7th Revised Edition (GHS 7), as adopted under Australian WHS legislation.

Hazard class	Acute toxicity (oral), Category 4 Serious eye damage/irritation, Category 1 Specific target organ toxicity – repeated exposure, Category 1 Long-term hazard to the aquatic environment - Category 2
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Signal word DANGER

Hazard pictograms



Hazard statements

Harmful if swallowed.
Causes serious eye damage.
Causes damage to organs through prolonged or repeated exposure if swallowed or inhaled.
Toxic to aquatic life with long lasting effects.

Prevention statements

Do not breathe mist or spray.
Wash exposed skin thoroughly after handling.
Do not eat drink or smoke when using this product.

Response statements	Avoid release to the environment.
	Wear protective gloves/protective clothing/eye protection/face protection.
	IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. Rinse mouth.
	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor.
Disposal statements	Get medical attention if you feel unwell.
	Collect spillage.
	Dispose of contents/container in accordance with local/regional/national regulations.
Other hazards which do not result in classification	Acidic metal-salt solutions may irritate skin and the respiratory tract if mist is generated.

DANGEROUS GOODS STATEMENT

Meets the underlying classification criteria for UN 3082 — ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (MANGANESE SULPHATE), Class 9, Packing Group III.

For Australian road and rail transport, Special Provision AU01 of the Australian Dangerous Goods Code (ADG Code), Edition 7.9, applies. When transported in packagings that do not incorporate a receptacle exceeding 500 kg(L), or in IBCs, the product is **not** subject to the requirements of the ADG Code.

Where the conditions of Special Provision AU01 are not met, the product is transported as UN 3082, Class 9, Packing Group III.

Refer to Section 14 for further information.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Identity	CAS No.	Concentration or concentration range (% w/w)
Manganese sulphate	7785-87-7	20 - <30
Ingredients determined not to be hazardous or present below disclosure thresholds, including water	-	to 100

4. FIRST AID MEASURES

Description of necessary first aid measures

Inhalation	Remove to fresh air. Keep at rest. Obtain medical advice if ill-effects occur or persist.
Skin contact	Remove contaminated clothing. Wash skin thoroughly with soap and water. Obtain medical advice if irritation develops. Wash clothing before reuse.
Eye contact	Immediately rinse cautiously with clean water for at least 15 minutes, holding eyelids open. Remove contact lenses if easy to do. Continue rinsing. Immediately call a POISONS INFORMATION CENTRE or doctor.
Ingestion	Rinse mouth. Do not induce vomiting. Never give anything by mouth to an unconscious person. Immediately call a POISONS INFORMATION

CENTRE or doctor. If vomiting occurs naturally, lay patient on side, in recovery position.

First aid facilities

Provide eyewash and access to running water.

Symptoms and effects caused by exposure, including acute and delayed effects

Severe eye damage may occur. Ingestion may cause gastrointestinal upset and damage to vital organs.

Indication of immediate medical attention and special treatment needed

Treat symptomatically.

5. FIREFIGHTING MEASURES**Extinguishing media**

Product is water-based and not combustible. Use media appropriate to surrounding fire.

Specific hazards arising from the chemical, including hazardous combustion products

Heating to dryness or fire may produce sulphur oxides and metal oxides. Containers may rupture when heated.

Special protective equipment and precautions for fire fighters

Evacuate area and contact emergency services. Toxic gases may be present in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combatting fire. Use water fog or spray to cool intact containers and nearby storage areas. Prevent contaminated fire water entering drains and waterways.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Isolate area. Avoid eye/skin contact and mist inhalation. Wear gloves, protective clothing and chemical splash goggles/face shield. Ensure ventilation.

Environmental precautions

Prevent entry to drains, soil and waterways. Notify the appropriate authority if significant contamination occurs.

Methods and materials for containment and clean up

Small spills: Contain and absorb with sand, earth or other inert absorbent material. Recover where practicable and place residues in a suitable labelled container. Wash contaminated area with water.

Large spills: Stop leak if safe to do so. Bund with sand, earth or other inert absorbent material. Recover and recycle liquid where practicable. Absorb residue and place in labelled containers for disposal. Do not wash concentrated product to drain. Wash the area with minimal water and collect washings.

7. HANDLING AND STORAGE**Precautions for safe handling**

Read all Safety Information, including Directions for Use on the label. Avoid contact and generation of aerosols. Do not eat, drink or smoke while handling. Wash thoroughly after use. Do not mix with other agricultural chemicals unless compatibility has been established.

Conditions for safe storage, including any incompatibilities

Store in the closed original container in a cool, dry, well-ventilated, bunded area. Protect from heat, freezing and direct sunlight. Segregate from alkalis, strong oxidising agents, food and animal feed.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Workplace exposure standards (applicable until 30 November 2026)

No product-specific Australian workplace exposure standard has been assigned to this product. The following Australian workplace exposure standards apply to manganese and its compounds.

Manganese, dust and compounds (as Mn):

TWA: 1 mg/m³

Manganese, fume (as Mn):

TWA: 1 mg/m³

STEL: 3 mg/m³

Workplace exposure limits (applicable from 1 December 2026)

Manganese fume, dust and compounds (as Mn), inhalable fraction:

TWA: 0.1 mg/m³

Advisory notation: OTO (ototoxic)

Manganese fume, dust and compounds (as Mn), respirable fraction:

TWA: 0.02 mg/m³

Advisory notation: OTO (ototoxic)

Exposure limits are expressed as elemental manganese (Mn).

This product is an aqueous solution and does not generate dust under normal conditions of use. Airborne exposure may occur where spray mist or aerosol is generated.

TWA = Time weighted average

STEL = Short-term exposure limit

Biological monitoring

No specific biological exposure limit has been established for this product. Where workplace risk assessment indicates a significant risk of exposure to manganese compounds, appropriate health monitoring should be considered in accordance with applicable work health and safety requirements.

Engineering controls

Use in well-ventilated areas. Avoid generation of spray mist or aerosols. Where airborne manganese-containing mist or aerosol may be generated, use suitable process enclosure, local exhaust ventilation or other engineering controls to maintain airborne concentrations below the applicable workplace exposure standard or workplace exposure limit.

Air monitoring should be considered where significant aerosol or mist exposure may occur or where adequate control of airborne exposure cannot otherwise be demonstrated.

Personal Protective Equipment (PPE)

Eye and face protection

Splash-proof chemical goggles (AS 1336 / 1337). Where significant splashing is possible, wear a face shield in addition to chemical splash goggles.

Skin protection

Wear chemically resistant protective gloves. Suitable materials may include nitrile, PVC or rubber. Glove selection should take account of the task, duration of contact and the glove manufacturer's chemical-resistance information. Elbow-length gloves are recommended where significant contact or splashing may occur. Protective gloves should be selected and used in accordance with AS/NZS 2161.

Body protection

Wear suitable protective clothing including long sleeves, long trousers and safety footwear. Where significant splashing is possible, wear chemically resistant protective clothing or apron as appropriate.

Respiratory protection

Respiratory protection is not normally required where the product is handled as a liquid without generation of mist or aerosol and adequate ventilation is provided.

Where spray mist or aerosol may be generated and engineering controls are insufficient to maintain airborne manganese concentrations below the applicable workplace exposure standard or workplace exposure limit, wear a correctly fitted respirator incorporating a suitable particulate filter, for example a P2 filter. Respiratory protective equipment must be selected, fitted, used and maintained in accordance with AS/NZS 1715 and AS/NZS 1716.

Thermal hazards None identified.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid
Colour	Pale pink
Odour	None
Melting point / freezing point	< 0°C
Boiling point	>100°C
Flammability	Nonflammable aqueous mixture
pH (neat)	4 to 6
Solubility	Soluble in water
Vapour pressure	As for water
Density and /or relative density	Approximately 1.41@ 20°C

10. STABILITY AND REACTIVITY

Reactivity

No specific hazardous reactions are known under normal conditions of use.

Chemical stability

Stable under normal conditions of storage and handling.

Possibility of hazardous reactions

No hazardous reactions under normal conditions of storage and handling.

Conditions to avoid

Avoid prolonged storage below 0°C. Keep away from heat (>40°C) and out of direct sunlight.

Incompatible materials

Incompatible with alkalis (metal hydroxide precipitation) and strong oxidising agents.

Hazardous decomposition products

Sulphur oxides and metal oxides on strong heating.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation: Spray mist may cause upper respiratory tract irritation.

Skin contact: Incidental skin contact is not likely to cause irritation.

Ingestion:	Harmful if swallowed. May cause nausea, vomiting and gastrointestinal irritation.
Eye contact:	May cause serious eye damage.
Chronic effects:	Causes damage to organs through prolonged or repeated exposure if swallowed or inhaled.

Symptoms related to the physical, chemical and toxicological characteristics

Chronic manganese poisoning (excessive inhalation and ingestion exposure) can result in symptoms including inflammation of the respiratory tract, frequent nose bleeds, headaches, sluggishness, sleepiness, dermatitis, irritability and liver enlargement followed by progressive deterioration of the central nervous system. In severe cases, the illness closely resembles Parkinson's Disease with symptoms including weakness of the legs, increased muscle tension, hand tremor, slurred speech, muscle cramps, spastic gait, mental deterioration, emotional/sexual disturbances, uncontrollable laughter, blood changes, and manganese psychosis (loss of contact with reality). High incidence of pneumonia has been found in workers exposed to the dust or fumes of some manganese compounds. Individuals exposed to dusts and manganese fumes have been reported to suffer from a much higher incidence of upper respiratory infections and pneumonia than the general population.

Immediate and delayed effects

Inhalation of dust or spray mist may cause acute irritation to the mucous membrane and upper airways. Symptoms of exposure include coughing, sneezing with possible nose bleeds, breathing difficulties, and increased incidence of upper respiratory tract infections.

Numerical measures of toxicity

Experimental ingredient (anhydrous manganese sulfate) LD₅₀: 2,150 mg/kg bw. GHS acute-toxicity point estimate used for mixture classification: 500 mg/kg, based on Acute Toxicity Category 4 classification.

Toxicological endpoint information

Acute toxicity	Harmful if swallowed.
Skin corrosion / irritation	Incidental contact is not likely to cause irritation. Repeated or prolonged contact may cause irritation.
Serious eye damage / irritation	Serious eye damage category 1.
Respiratory sensitisation	Not classified.
Skin sensitisation	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified.
Specific Target Organ Toxicity (STOT)– single exposure	Not classified
Specific Target Organ Toxicity (STOT) – repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	Not an aspiration hazard.
Medical conditions aggravated by exposure	No information available.
Additional information	Toxicological test data are not available for the finished product unless otherwise stated. The health-hazard assessment has been derived from available information on the ingredients, relevant finished-product or analogous-mixture data where available, and the applicable GHS 7 mixture-classification criteria.

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Toxic to aquatic life with long lasting effects. Avoid release to the environment.

Persistence and Degradability

Inorganic metal ions do not biodegrade.

Bioaccumulative Potential

Dissolved metals may bind to sediments and organic matter; bioavailability depends strongly on pH, hardness and water chemistry.

Mobility in Soil

Product is water soluble and mobile before sorption/precipitation.

Other Adverse Effects

Trace-metal release may harm aquatic systems. Avoid uncontrolled release.

13. DISPOSAL CONSIDERATIONS**Disposal Methods**

Recover or recycle the product where practicable. Dispose of residues, contaminated absorbents and packaging through a licensed waste contractor in accordance with applicable Commonwealth, state, territory and local requirements. Do not discharge concentrated product to stormwater, surface waters or soil. Empty containers may retain product residues and should be handled accordingly.

14. TRANSPORT INFORMATION**ROAD AND RAIL TRANSPORT**

The product meets the classification criteria for an environmentally hazardous substance, liquid, N.O.S., Class 9.

Under Special Provision AU01 of the Australian Code for the Transport of Dangerous Goods by Road & Rail, Edition 7.9 (ADG Code), environmentally hazardous substances meeting the description of UN 3082 are not subject to the ADG Code when transported by road or rail in:

- (a) packagings that do not incorporate a receptacle exceeding 500 kg(L); or
- (b) IBCs.

Where the conditions of Special Provision AU01 are **not** met, the following transport classification applies.

UN number	UN 3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (MANGANESE SULPHATE)
Transport hazard class	Class 9
Packing group	III
Subsidiary risk(s)	None.
Environmental hazards for transport purposes	Environmentally hazardous substance.
Special precautions for user	Avoid release to the environment. Prevent product entering drains and waterways. Refer to Sections 6, 7 and 8 of this Safety Data Sheet.

Additional information	ADG Special Provision AU01 applies to Australian road and rail transport only. It does not apply to international transport or to air or sea transport within Australia. For road and rail transport in packagings satisfying Special Provision AU01, or in IBCs, the product is not subject to the requirements of the ADG Code.
Hazchem code	•3Z

15. REGULATORY INFORMATION

International conventions and agreements:

No specific international convention applicable to the product has been identified.

Safety, health and environmental regulations

Poisons scheduling: Not scheduled under the current Australian Poisons Standard.

16. OTHER INFORMATION

This Safety Data Sheet has been prepared in accordance with the Safe Work Australia Model Code of Practice: Preparation of Safety Data Sheets for Hazardous Chemicals and the Globally Harmonized System of Classification and Labelling of Chemicals, Seventh Revised Edition (GHS 7), as adopted under Australian work health and safety legislation.

Date of preparation	27 August 2026
Supersedes SDS dated	September 2024
Revision number	1

Disclaimer

The information in this SDS is based on information reasonably available to the Australian manufacturer or importer at the date of preparation or review. It describes the product in relation to workplace health and safety requirements and is not a product specification or warranty of performance. The product should be used only for the applications identified in Section 1 and in accordance with the information in this SDS. Users remain responsible for assessing workplace risks arising from their particular use conditions and for complying with applicable legislation.

End of Report