

Section 1 - Identification of the Material and Supplier

Product Name:	Manganese sulphate, monohydrate
Other Means of Identification:	Manganese sulphate [CAS#7785-87-7]; Sulfuric acid, manganese(2+) salt(1:1), monohydrate
Recommended Use of the product and Restriction on Use:	Agricultural, turf and amenity fertiliser
Supplier:	Australian Agribusiness (Holdings) Pty Ltd Suite 201, Level 2, 3 Rider Boulevard, Rhodes NSW 2138 Phone: 02 9395 1200 (office hours) www.aus-ag.com.au
This version issued:	May 2024 and is valid for 5 years from this date.
Emergency Telephone Number:	Phone 13 1126 from anywhere in Australia

Section 2 - Hazards Identification

Statement of Hazardous Nature

Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and Safe Work Australia (SWA).

Classified as Dangerous Goods according to the Australian Code for Transport of Dangerous Goods by Road and Rail (7th edition), IATA and IMDG/IMSBC.



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

GHS Signal word: Danger.

Hazard Statements	H302: Harmful if swallowed. H318: Causes serious eye damage. H372: Causes damage to organs through prolonged or repeated exposure. H411: Toxic to aquatic life with lasting effects.
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Precautionary Statements

Prevention	P260: Do not breath dust/fumes/gas/mist/vapours/spray. P270: Do not eat, drink or smoke when using this product. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection and suitable respirator.
Response	P305+P351+P338+P310: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing. Immediately call a POISON CENTRE/doctor. P301+P312: IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell. P314: Get medical advice/attention if you feel unwell. P330: Rinse mouth. P391: Collect spillage.
Disposal	P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

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Section 3 - Composition/Information on Ingredients

Chemical Characterization: Metal sulphate, inorganic salt.

Description: Powdered, solid form of substance listed below

Hazardous Components:		
CAS: 10034-96-5	Manganese sulphate, monohydrate	>=98-100%

Section 4 - First Aid Measures

Inhalation: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If respiratory symptoms persist, get medical advice/attention. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.

Skin Contact: IF ON SKIN: Wash affected areas with water and soap. Remove contaminated clothing and wash it before reuse. If skin irritation occurs/develops get medical advice/attention.

Eye Contact: IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses, if present and easy to do. Continue rinsing for at least 15 minutes. Immediately call a Poison Centre or doctor/physician for advice.

Ingestion: IF SWALLOWED: Do not induce vomiting. Rinse mouth then drink plenty of water. Never give anything by mouth to an unconscious person. Call a Poison Centre or doctor/physician for advice.

Symptoms/Effects Caused by Exposure:

Inhalation: May cause damage to organs through prolonged or repeated exposure.

Skin Contact: May cause skin irritation.

Eye Contact: Causes serious eye damage.

Ingestions: May be harmful if swallowed.

Section 5 - Fire Fighting Measures

Specific Hazards Arising from the Chemical: The major hazard in fires is usually inhalation of heated and toxic or oxygen deficient (or both), fire gases. This will only occur after heating to dryness. Product is non-combustible, material does not burn. Decomposes on heating, emitting toxic fumes. Fire or heat may produce irritating and/or toxic gases including Manganese oxides, Sulphur oxides. Containers close to fire should be removed only if safe to do so. Use water spray to cool fire exposed containers. Dyke fire control water or dilution water and contain runoff. Runoff may cause pollution. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Suitable Extinguishing Media: If product is involved in a fire, use dry chemical, Carbon dioxide (CO₂), foam or water spray for extinction. *Use fire-extinguishing media appropriate for surrounding materials.

Special Protective Equipment and Precautions for Fire Fighters: Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6 - Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Clean up immediately if safe to do so. Wear protective equipment. Avoid dust generation. Avoid breathing dust and contact with eyes, skin and clothing. Keep unprotected persons away. Ensure adequate ventilation.

Environmental precautions: Spillages and decontamination runoff should be prevented from entering drains and watercourses. If contamination of sewers or waterways has occurred advise local emergency services.

Methods and Materials for Containment and Cleaning Up: Stop leak if you can do so without risk. Prevent spillage from entering drains, waterways, sewers or basements. Carefully clean up by shovel or sweep up spilled material and place into suitable container. Do not use compressed air. Dispose contaminated material as waste (see SECTION 13).

Section 7 - Handling and Storage

Precautions for Safe Handling: Use of safe work practices are recommended to avoid eye or skin contact and inhalation of dust. Avoid dust formation. Ensure adequate ventilation. Avoid prolonged or repeated exposure. Food, beverages and tobacco products should not be stored or consumed where this material is in use. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing before storage or re-use. Provide eye wash fountains and safety showers in close proximity to points of potential exposure. Check Section 8 of this SDS for details of personal protective measures.

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Conditions for Safe Storage: Store in a cool, dry and well-ventilated area out of direct sunlight. Keep container tightly closed when not in use. Protect from moisture. Keep away from and protect from heat, sparks, open flames and other sources of ignition. Avoid release to the environment.

Section 8 - Exposure Controls and Personal Protection

No specific exposure standards are available for this product. For Manganese, dusts and compounds:

- Safe Work Australia Exposure Standard: TWA = 1 mg/m³ (as Mn).
 - Immediately dangerous to life or health (IDLH) concentration: 500 mg/m³ (as Mn).
- *Emergency limits (Manganese sulphate): TEEL-1: 9.2 mg/m³; TEEL-2: 15 mg/m³; TEEL-3: 90 mg/m³.

Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715 and 1716**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: **AS/NZS 4501**, Industrial Eye Protection: **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Engineering Controls: A system of local and/or general exhaust is recommended to keep exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

Eye and Face Protection: Eye and face protectors to prevent contact for protection against dust. See above AS/NZS standards for more information.

Skin Protection: Wear appropriate personal protective clothing to avoid skin contact. For prolonged or repeated hand contact, use protective gloves. When selecting gloves for use against certain chemicals, the degradation resistance, permeation rate and permeation breakthrough time should be considered. See above AS/NZS standards for more information.

Protective Material Types: Occupational protective clothing (depending on conditions in which it has to be used, in particular as regards the period for which it is worn, which shall be determined on the basis of the seriousness of the risk, the frequency of exposure to the risk, the characteristics of the workstation of each worker and the performance of the protective clothing). See above AS/NZS standards for more information.

Respirator Protection: Wear respiratory protection in case of inadequate ventilation or an inhalation risk exists. Where an inhalation risk exists, wear approved particulate respirator (filter type P1 or SCBA). See above AS/NZS standards for more information.

Safety deluge showers should, if practical, be provided near to where this product is being handled commercially.

Section 9 - Physical and Chemical Properties:

Appearance:	Solid
Form:	Powder or granules.
Colour:	Pink/violet.
Odour:	Odourless.
Odour Threshold:	No information available.
pH-Value:	No information available.
Freezing Point/Melting Point:	No information available / 700°C (anhydrous).
Initial Boiling Point/Boiling Range:	850°C.
Flash point:	No information available.
Flammability (solid, gas):	Not applicable.
Autoignition temperature:	No information available.
Decomposition Temperature:	85°C.
Explosion Limits:	
Lower:	No information available.
Upper:	No information available.
Vapour Pressure:	No information available.
Relative Density:	2.95 g/cm ³
Vapour Density:	No information available.
Solubility in Water:	Soluble in water.
Evaporation Rate:	No information available.
Partition Coefficient (n-octanol/water):	No information available.
Viscosity:	No information available.

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Section 10 - Stability and Reactivity

Possibility of Hazardous Reactions: May react violently with hydrogen peroxide.

Chemical Stability: Material is stable under normal conditions.

Conditions to Avoid: Avoid dust formation. Protect from moisture. Keep away from heat, sparks, open flames and other sources of ignition.

Incompatibilities: Strong oxidising agents, strong acids; Aluminium, magnesium, powdered metals.

Hazardous Decomposition Products: No decomposition when used as directed. Decomposes on heating emitting toxic fumes including Manganese oxides and Sulphur oxides.

Polymerisation: Will not occur.

Section 11 - Toxicological Information

Toxicity:

CAS: 10034-96-5 Manganese sulphate monohydrate		
Oral	LD50	2,150 mg/kg (Rattus norvegicus (rat)) (anhydrous substance)
Dermal	LD50	-
Inhalation	LC50	-

Acute Health Effects – Acute toxicity; Harmful if swallowed.

Inhalation: May cause damage to organs through prolonged or repeated exposure.

Skin Contact: May cause skin irritation.

Eye Contact: Causes serious eye damage.

Ingestions: Harmful if swallowed.

Skin Corrosion/Irritation: May cause skin irritation.

Serious Eye Damage/Irritation: Causes serious eye damage.

Respiratory or Skin Sensitisation: Based on classification principles, the classification criteria are not met.

Germ Cell Mutagenicity: Based on classification principles, the classification criteria are not met.

Carcinogenicity: Based on classification principles, the classification criteria are not met.

Reproductive Toxicity: Based on classification principles, the classification criteria are not met.

Specific Target Organ Toxicity (STOT) – Single Exposure:

Based on classification principles, the classification criteria are not met.

Specific Target Organ Toxicity (STOT) – Repeated Exposure:

Causes damage to organs through prolonged or repeated exposure.

Aspiration Hazard: Based on classification principles, the classification criteria are not met.

Chronic Health Effects: 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, various blood changes and manganese psychosis (loss of contact with reality. High incidence of pneumonia has been found in workers exposed to the dust or fume of some manganese compounds. Individuals exposed to dusts and fumes of manganese have been reported to suffer from a much higher incidence of upper respiratory infections and pneumonia than does the general population.

Likely Routes of Exposure:

Ingestion: May irritate the gastric tract causing nausea, abdominal pain, diarrhoea, lethargy, vomiting and possible coma. Inorganic manganese salts are poorly absorbed through the intestines but may produce hypoglycaemia and decreased calcium blood levels should absorption occur.

Eye contact: Causes serious eye damage.

Skin contact: May cause irritation. May cause cracking of skin and eczema.

Inhalation: Inhalation of dust may cause acute irritation to the mucous membrane and upper airways. Symptoms of exposure can include coughing, sneezing and possible nose bleeds, breathing difficulties and increase the incidence of upper respiratory tract infection (i.e. pneumonia). Absorptions of inorganic manganese salts through the lungs is poor but may occur in chronic poisoning. May cause 24 – 28-hour flu like illness (metal fume fever) characterised by chills, fever, aching muscles, dryness in the mouth and throat, and headache.

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Section 12 - Ecological Information

Ecotoxicity:

CAS: 10034-96-5 Manganese sulphate monohydrate

LC50/96 h 30.6 mg/l Fish (Fathead minnow) [anhydrous]

EC50/48 h 8.3 mg/l Invertebrates (Daphnia magna) [anhydrous]

Aquatic toxicity: Toxic to aquatic life with long lasting effects. Avoid release into the environment.

Persistence and Degradability: No information available on finished product.

Bioaccumulative Potential: No information available on finished product.

Mobility in soil: This product is soluble in water.

Other adverse effects: No further relevant information available.

Section 13 - Disposal Considerations

Disposal Methods and Containers: Dispose according to applicable local and state government regulations.

Special Precautions for Landfill or Incineration: Contaminated packaging: Since emptied containers may retain product residues, follow label warnings even after container is emptied. Please consult your state Land Waste Management Authority for more information.

Section 14 - Transport Information

Labels Required



Hazchem Code:

2Z

UN Number

ADG, IMDG, IATA

UN3077

Proper Shipping Name

Land Transport (ADG)

Sea Transport (IMDG)

Air Transport (IATA)

ENVIRONMENTALLY HAZARDOUS SUBSTANCE,
LIQUID, N.O.S. (Manganese sulphate monohydrate)
MARINE POLLUTANT

Transport Hazard Class:

ADG/IMDG/IATA

9

Packing Group:

ADG/IMDG/IATA

III

Marine Pollutant:

Yes

EMS Number:

F-A, S-F

Special Provision:

Land (ADG) - 274, 331, 335, 375, AU01

Air (IATA) – A97, A158, A179, A197, 956, Y956

Sea (IMDG) – 274, 335, 966, 967, 969

Transport/Additional Information:

Not subject to the ADG Code when transported by road or rail in packagings that do not incorporate a receptacle exceeding 500kg(L) or IBCs (refer to SP AU01).

Limited Quantities:

5kg

Section 15 - Regulatory Information

Australian Inventory of Industrial Chemicals: All components are on the inventory or in compliance with the inventory.

Standard for the Uniform Scheduling of Medicines and poisons (SUSMP) – Poison Schedule:

Not a scheduled poison.

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Section 16 - Other Information

This SDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail	IMDG	International Maritime Dangerous Good
AIIC	Australian Inventory of Industrial Chemicals	IMSBC	International Maritime Solid Bulk Code
CAS number	Chemical Abstracts Service Registry Number	NTP	National Toxicology Program (USA)
Hazchem Number	Emergency action code of numbers and letters that provide information to emergency services especially fire-fighters	SUSMP	Standard for the Uniform Scheduling of Medicines & Poisons
IARC	International Agency for Research on Cancer	SWA	Safe Work Australia (formerly ASCC and NOHSC)
IATA	International Air Transport Authority	UN Number	United Nations Number

THIS SDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This SDS is prepared in accord with the SWA document "Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice" (July 2020) and GHS Revision 7
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