

## Safety Data Sheet **MANGANESE SULFATE Monohydrate**

SDS no. 8RQZ65AX • Version 1.0 • Date of issue: 2024-03-19

### SECTION 1: Identification

#### GHS Product identifier

Product name MANGANESE SULFATE Monohydrate

#### Other means of identification

Manganese (II) Sulfate Monohydrate AR (Manganous sulfate)	MA006
Manganese (II) Sulfate Monohydrate LR (Manganous sulfate)	ML006
Manganese (II) Sulfate Monohydrate Powder TG (Manganous sulfate)	MT006
Manganese (11) Sulfate Monohydrate Granular TG ( Manganous Sulfate )	MT081
Manganese (II) Sulfate Monohydrate Granular TG (Manganous sulfate)	MT081

#### Recommended use of the chemical and restrictions on use

Fertilisers, feed additive, paints, varnishes, ceramics, textile dyes, medicines, nutrient/dietary supplement, fungicides, ore flotation, catalyst in viscose process, synthetic manganese dioxide, analytical reagent and laboratory reagent.

#### Supplier's details

Name ChemSupply Australia Pty Ltd  
Address 38-50 Bedford Street  
5013 Gillman South Australia  
Australia

Telephone 08 8440 2000  
email [www.chemsupply.com.au](http://www.chemsupply.com.au)

#### Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

### SECTION 2: Hazard identification

#### General hazard statement

Classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

Classified as Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

#### Classification of the substance or mixture

#### GHS classification in accordance with: UN GHS revision 7

- Acute toxicity, oral, Cat. 4
- Serious eye damage/eye irritation, Cat. 1

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- Specific target organ toxicity following repeated exposure, Cat. 1
- Hazardous to the aquatic environment, long-term (chronic), Cat. 2

### GHS label elements, including precautionary statements

#### Pictograms



#### Signal word

**Danger**

#### Hazard statement(s)

H302	Harmful if swallowed
H318	Causes serious eye damage
H372	Causes damage to organs [organs] through prolonged or repeated exposure [route]
H411	Toxic to aquatic life with long lasting effects

#### Precautionary statement(s)

P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash hands thoroughly after handling.
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.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell,
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/physician
P314	Get medical advice/attention if you feel unwell.
P330	Rinse mouth.
P391	Collect spillage.
P501	Dispose of contents/container to an approved waste disposal facility

## SECTION 3: Composition/information on ingredients

#### Mixtures

Molecular weight: 169.02

#### Components

Component	CAS no.	Concentration
MANGANESE (II) SULFATE MONOHYDRATE (weight)	10034-96-5	90 - <= 100 %
CLASSIFICATIONS: Acute toxicity, oral, Cat. 4; Hazardous to the aquatic environment, long-term (chronic), Cat. 2; Serious eye damage/eye irritation, Cat. 1; Specific target organ toxicity following repeated exposure, Cat. 1. HAZARDS: H302 - Harmful if swallowed; H318 - Causes serious eye damage; H372 - Causes damage to organs [organs] through prolonged or repeated exposure [route]; H411 - Toxic to aquatic life with long lasting effects.		

## SECTION 4: First-aid measures

#### Description of necessary first-aid measures

General advice

First Aid Facilities: Maintain eyewash fountain in work area.

If inhaled

If inhaled, remove from contaminated area to fresh air immediately. Apply artificial

respiration if not breathing. If breathing is difficult, give oxygen. Immediately obtain medical aid if cough or other symptoms appear.

In case of skin contact

Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. Seek medical advice if effects persist.

In case of eye contact

Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. Seek medical advice if effects persist.

If swallowed

Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. Give water to drink. DO NOT INDUCE VOMITING. Seek medical advice if symptoms persist.

**Most important symptoms/effects, acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

**Indication of immediate medical attention and special treatment needed, if necessary**

For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

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**SECTION 5: Fire-fighting measures**

**Suitable extinguishing media**

Use measures suitable for extinguishing surrounding fire.

Small fire: Use dry chemical, CO<sub>2</sub>, water spray or foam.

Large fire: Use water spray, fog or foam.

**Specific hazards arising from the chemical**

Hazards from Combustion Products: Sulfur oxides, manganese/manganese oxides.

**Special protective actions for fire-fighters**

Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. Fight fire from safe location.

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**SECTION 6: Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**

Avoid dust formation and avoid breathing dust. Avoid inhalation, contact with skin, eyes and clothing.

Wear protective clothing specified for normal operations (see Section 8)

**Methods and materials for containment and cleaning up**

Sweep up (avoid generating dust) and remove to a suitable, clearly labelled container for disposal in accordance with local regulations.

Prevent from entering into drains, ditches, rivers or the sea. Use appropriate containment to avoid environmental contamination.

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**SECTION 7: Handling and storage**

**Precautions for safe handling**

Do not empty into drains Avoid substance contact and generation and inhalation of dust. Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure. Wash hands and face thoroughly after working with material. Only use in well-ventilated areas.

**Conditions for safe storage, including any incompatibilities**

Store in a cool, dry place. Store in well ventilated area. Keep containers closed at all times.

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**SECTION 8: Exposure controls/personal protection**

**Appropriate engineering controls**

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

**Individual protection measures, such as personal protective equipment (PPE)**

**Eye/face protection**

The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

**Skin protection**

Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hand Protection: Ensure hand protection complies with AS 2161, Occupational protective gloves - Selection, use and maintenance.

**Body protection**

Body Protection: Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

**Respiratory protection**

Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

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**SECTION 9: Physical and chemical properties**

**Basic physical and chemical properties**

Physical state	Solid
Appearance	Translucent, pale pink to red granular powder.
Color	No data available.
Odor	Odourless.
Odor threshold	No data available.
Melting point/freezing point	700 °C (release of crystalline water at 400-500°C).
Boiling point or initial boiling point and boiling range	850 °C.
Flammability	No data available.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	No data available.
Explosive properties	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Oxidizing properties	No data available.
pH	3.0 - 3.5 (50 g/l, H <sub>2</sub> O, 20 °C).
Kinematic viscosity	No data available.
Solubility	Solubility in Water: Soluble (762 g/L @ 20 °C). Solubility in Organic Solvents: Insoluble in alcohol.
Partition coefficient n-octanol/water (log value)	No data available.
Vapor pressure	No data available.
Evaporation rate	No data available.
Density and/or relative density	Specific Gravity: 2.95 g/cm <sup>3</sup> @ 20°C
Relative vapor density	No data available.

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Particle characteristics

No data available.

### Supplemental information regarding physical hazard classes

No data available.

### Further safety characteristics (supplemental)

No data available.

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## SECTION 10: Stability and reactivity

### Reactivity

Stable under normal conditions of storage and handling.

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

Hazardous Polymerization: Will not occur.

### Conditions to avoid

Exposure to moisture.

Avoid storing in direct sunlight and avoid extremes of temperature.

### Incompatible materials

Aluminium, magnesium, powdered metals and strong oxidisers.

### Hazardous decomposition products

Sulfur oxides, manganese/manganese oxides.

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## SECTION 11: Toxicological information

### Information on toxicological effects

#### Acute toxicity

Acute Toxicity - Oral: LD50 (LD50): 2150 mg/kg (anhydrous substance){UCLID}

Ingestion: May be harmful if swallowed. Ingestion of dust 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 hypoglycemia and decreased calcium blood levels should absorption occur.

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

// ----- From the Suggestion report (11/04/2024, 10:25 AM) ----- //

The ATE (oral) of the mixture is: 500 mg/kg bw

#### Skin corrosion/irritation

May be harmful if absorbed through the skin. Symptoms may include of irritation, redness, itching, and pain.

#### Serious eye damage/irritation

May be harmful if in contact with the eyes. Symptoms may include of irritation, redness, itching, and pain resulting in a mild abrasion.

**Respiratory or skin sensitization**

No data available.

**Germ cell mutagenicity**

No data available.

**Carcinogenicity**

No data available.

**Reproductive toxicity**

No data available.

**Summary of evaluation of the CMR properties**

No data available.

**Specific target organ toxicity (STOT) - single exposure**

No data available.

**Specific target organ toxicity (STOT) - repeated exposure**

H373 May cause damage to organs through prolonged or repeated exposure.

**Aspiration hazard**

No data available.

**Additional information**

Chronic Effects: Harmful: possible risk of irreversible effects through inhalation and if swallowed. Men exposed to manganese dusts showed a decrease in fertility.

Target organs: lungs, CNS, blood and kidneys.

Chronic manganese poisoning can result in excessive inhalation and ingestion exposure with early 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 more severe cases, the illness closely resembles Parkinsons' 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.

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MANGANESE (II) SULFATE MONOHYDRATE: \*TOXICITY:

typ. dose mode specie amount units other

Not available

\*AQTX/TLM96: Not available

\*SAX TOXICITY EVALUATION:

THR: Very few poisonings have occurred from ingestion. Some are experimental tumorigens. Chronic manganese poisoning is a clearly characterized disease which results from inhalation of fumes or dusts of manganese.

Exposure to heavy concentrations of dusts or fumes for as little as three months may produce the condition, but usually cases develop after 1-3 years of exposure. The central nervous system is the chief site of damage. If cases are removed from exposure shortly after appearance of symptoms, some improvement in the patient's condition frequently occurs, though there may be some residual disturbances in gait and speech. When

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well established, however, the disease results in permanent disability.  
Manganese compounds are common air contaminants.

### \*CARCINOGENICITY:

Status: NTP Carcinogenesis Studies; on test (two year studies), January 1990

\*MUTATION DATA: See RTECS printout for data

\*TERATOGENICITY: Not available

### \*STANDARDS, REGULATIONS & RECOMMENDATIONS:

OSHA: Federal Register (1/19/89) and 29 CFR 1910.1000 Subpart Z

Transitional Limit: Ceiling Limit 5 mg(Mn)/m<sup>3</sup> [610]

Final Limit: Ceiling Limit 5 mg(Mn)/m<sup>3</sup> [610]

ACGIH: TLV-TWA 5 mg(Mn)/m<sup>3</sup> [015,415,421,610]

NIOSH Criteria Document: None

NFPA Hazard Rating: Health (H): 2

Flammability (F): 0

Reactivity (R): 1

H2: Materials hazardous to health, but areas may be entered freely with full-faced mask self-contained breathing apparatus which provides eye protection (see NFPA for details).

F0: Materials that will not burn (see NFPA for details).

R1: Materials which are normally stable but which may become unstable at elevated temperatures and pressures or which may react with water with some release of energy but not violently (see NFPA for details).

\*OTHER TOXICITY DATA: Not available

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## SECTION 12: Ecological information

### Toxicity

No data available on product

### Mobility in soil

No mobility data available for this product.

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## SECTION 13: Disposal considerations

### Disposal methods

### Product disposal

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

### Other disposal recommendations

Do not discharge this material into waterways, drains and sewers.

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## SECTION 14: Transport information

### ADG (Road and Rail)

UN Number: 3077

Class: 9

Packing Group: III

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Manganese Sulfate Monohydrate)

**Hazchem emergency action code (EAC)**

2X

**IMDG**

UN Number: 3077

Class: 9

Packing Group: III

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Manganese Sulfate Monohydrate)

**IATA**

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Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Manganese Sulfate Monohydrate)

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**SECTION 15: Regulatory information**

**Safety, health and environmental regulations specific for the product in question**

**Australia SUSMP**

Poison Schedule: NS

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**SECTION 16: Other information**

**Further information/disclaimer**

ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

**Preparation information**

All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make no warranty either expressed or implied, with respect to the completeness or accuracy to the information contained herein. ChemSupply Australia Pty Ltd accepts no responsibility whatsoever for its accuracy or for any results that may be obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.

Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia

National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'

Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.

Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.

Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019

Safe Work Australia, Hazardous Chemical Information System (HCIS), [hcis.safeworkaustralia.gov.au](http://hcis.safeworkaustralia.gov.au)

IATA, Dangerous Goods Regulations (DGR)

IMO, International Maritime Dangerous Goods Code (IMDG)