



Infosafe No™	1CH48	Issue Date : March 2019	RE-ISSUED by CHEMSUPP
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Product Name : **MANGANESE SULFATE Monohydrate**

Classified as hazardous

1. Identification

GHS Product Identifier MANGANESE SULFATE Monohydrate

Company Name CHEM-SUPPLY PTY LTD (ABN 19 008 264 211)

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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.

Other Names Name Product Code

Manganous sulfate monohydrate
Manganese (II) sulfate monohydrate
MANGANESE SULFATE Monohydrate AR MA006

Other Information

Chem-Supply 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 Chem-Supply 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 Chem-Supply 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.

2. Hazard Identification

GHS classification of the substance/mixture Hazardous to the Aquatic Environment - Long-Term Hazard: Category 1
Specific Target Organ Toxicity - Repeated Exposure Category 2

Signal Word (s) WARNING

Hazard Statement (s) H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.

Pictogram (s) Environment, Health hazard



Precautionary statement – Prevention P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.

Precautionary statement – Response P314 Get medical advice/attention if you feel unwell.
P391 Collect spillage.

Precautionary statement – Disposal P501 Dispose of contents/container to an approved waste disposal plant.

3. Composition/information on ingredients

Chemical Characterization Ingredients	Name	CAS	Proportion	Hazard Symbol	Risk Phrase
	Manganese (II) sulfate monohydrate	10034-96-5	90-100 %		



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4. First-aid measures

Inhalation	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.
Ingestion	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.
Skin	Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. Seek medical advice if effects persist.
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.
First Aid Facilities	Maintain eyewash fountain and safety shower in work area.
Advice to Doctor	Treat symptomatically based on judgement of doctor and individual reactions of the patient.
Other Information	For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

5. Fire-fighting measures

Hazards from Combustion Products	Sulfur oxides, manganese/manganese oxides.
Specific Methods	Use measures suitable for extinguishing surrounding fire. Small fire: Use dry chemical, CO ₂ , water spray or foam. Large fire: Use water spray, fog or foam.
Hazchem Code	2Z

6. Accidental release measures

Personal Precautions	Avoid dust formation and avoid breathing dust. Avoid inhalation, contact with skin, eyes and clothing.
Personal Protection	Wear protective clothing specified for normal operations (see Section 8)
Clean-up Methods - Small Spillages	Sweep up (avoid generating dust) and remove to a suitable, clearly labelled container for disposal in accordance with local regulations.
Environmental Precautions	Prevent from entering into drains, ditches, rivers or the sea. Use appropriate containment to avoid environmental contamination.

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.

8. Exposure controls/personal protection

Occupational exposure limit values	Name	STEL		TWA		Footnote
		mg/m ³	ppm	mg/m ³	ppm	
	Manganese (II) sulfate monohydrate			1		Manganese, dust & compounds (as Mn)
Other Exposure Information	These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity. A time weighted average (TWA) has been established for Manganese compounds (as Mn) (Worksafe Aust) of 1 mg/m ³ . The exposure value at the TWA is the average airborne concentration of a particular					



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Appropriate engineering controls	substance when calculated over a normal 8 hour working day for a 5 day working week. In industrial situations maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. These methods should be used in preference to personal protective equipment.
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.
Eye 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.
Hand Protection	Wear gloves of impervious material conforming to AS/NZS 2161: Occupational protective gloves - Selection, use and maintenance. Final choice of appropriate glove type will vary according to individual circumstances. This can include methods of handling, and engineering controls as determined by appropriate risk assessments.
Personal Protective Equipment	Personal protective equipment should not solely be relied upon to control risk and should only be used when all other reasonably practicable control measures do not eliminate or sufficiently minimise risk. Guidance in selecting personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.
Footwear	Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.
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.
Hygiene Measures	Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

9. Physical and chemical properties

Form	Solid
Appearance	Translucent, pale pink to red granular powder.
Odour	Odourless.
Melting Point	700 °C (release of crystalline water at 400-500°C).
Boiling Point	850 °C.
Solubility in Water	Soluble (762 g/L @ 20 °C).
Solubility in Organic Solvents	Insoluble in alcohol.
Specific Gravity	2.95 g/cm ³ @ 20°C
pH	3.0 - 3.5 (50 g/l, H ₂ O, 20 °C).
Flammability	Non combustible material.
Molecular Weight	169.02

10. Stability and reactivity

Chemical Stability	Stable under normal use conditons. Hygroscopic
Incompatible Materials	Aluminium, magnesium, powdered metals and strong oxidisers.
Hazardous Decomposition Products	Sulfur oxides, manganese/manganese oxides.
Hazardous Polymerization	Will not occur.

11. Toxicological Information

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



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Inhalation	absorption occur. 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.
Skin	May be harmful if absorbed through the skin. Symptoms may include of irritation, redness, itching, and pain.
Eye	May be harmful if in contact with the eyes. Symptoms may include of irritation, redness, itching, and pain resulting in a mild abrasion.
Carcinogenicity	No evidence of carcinogenic properties.
STOT-repeated exposure	H373 May cause damage to organs through prolonged or repeated exposure.
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.

12. Ecological information

Ecotoxicity	Toxic for aquatic organisms. May cause long-term adverse effects in the aquatic environment.
Persistence and degradability	No persistence/degradability data available for this product.
Mobility	No mobility data available for this product.
Environmental Protection	Do not allow product to enter drains, waterways or sewers. Highly toxic to aquatic organisms. May cause long-term adverse effects in the aquatic organisms.

13. Disposal considerations

Disposal Considerations	Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and disposed of according to relevant local, state and federal government regulations.
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14. Transport information

U.N. Number	3077
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Transport hazard class(es)	9
Hazchem Code	2Z
Packaging Method	3.8.9
Packing Group	III
EPG Number	9C1
IERG Number	47
Other Information	The Special Provision AU01 of the ADG Code are peculiar to this Code and are therefore not applicable to international transport, or to air or sea transport within Australia. SP AU01 Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 are not subject to this Code when transported by road or rail in; (a) packagings; (b) IBCs; or



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(c) any other receptacle not exceeding 500 kg(L).

15. Regulatory information

Regulatory Information	Listed in the Australian Inventory of Chemical Substances (AICS). Not listed under WHS Regulation 2011, Schedule 10 - Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.
Poisons Schedule	Not Scheduled

16. Other Information

Literature References	'Standard for the Uniform Scheduling of Medicines and Poisons .', Commonwealth of Australia. Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley and Sons, Inc., NY, 1997. National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.', 2007. Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', 2011. Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, 2010. Safe Work Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]'. Safe Work Australia, 'Hazardous Chemical Information System, 2005'. Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances (2011)'. Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995) 3rd Edition]'. Paul McCarthy Ph. (08) 8440 2000 DISCLAIMER STATEMENT: 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. Chem-Supply 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.
Contact Person/Point	

Empirical Formula & Structural Formula MnSO4.H2O

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