Safety Data Sheet MANGANESE (II) NITRATE TETRAHYDRATE

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SECTION 1: Identification

GHS Product identifier

Product name	MANGANESE (II) NITRATE TETRAHYDRATE

Other means of identification

Product	Product Code
Manganese(II) Nitrate Tetrahydrate	MA137

Recommended use of the chemical and restrictions on use

Intermediate in manufacture of reagent grade MNO2; in preparation of porcelein colourants.

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

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
- Oxidizing solids, Cat. 3
- Skin corrosion/irritation, Cat. 1C
- Specific target organ toxicity following repeated exposure, Cat. 2

GHS label elements, including precautionary statements

Pictograms

Signal word	**Danger**
Hazard statement(s)	
H272	May intensify fire; oxidizer
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H373	May cause damage to organs [brain] through prolonged or repeated exposure [inhalation]
Precautionary statement(s)	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220	Keep away from clothing and other combustible materials.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physcian if you feel unwell,
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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/physcian
P363	Wash contaminated clothing before reuse.
P370+P378	In case of fire: Use agents recommended in Section 5 of SDS for extinction
P501	Dispose of contents/container to an approved waste disposal facility

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight	251.01

Component	Identification	Weight %	Classifications
Manganese nitrate tetrahydrate	CAS no.: 20694-39-7 EC no.: 677-704-5	<= 100 %	CLASSIFICATIONS: Oxidizing solids, Cat. 3; Acute toxicity, oral, Cat. 4; Eye damage/ irritation, Cat. 1; Skin corrosion/irritation, Cat. 1C; Specific target organ toxicity, repeated exposure, Cat. 2. HAZARDS: H272 - May intensify fire; oxidizer; H302 - Harmful if swallowed; H314 - Causes severe skin burns and eye damage; H318 - Causes serious eye damage; H373 - May cause damage to organs [organs] through prolonged or repeated exposure [route].

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. Get medical aid if cough or other symptoms appear.
In case of skin contact	Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician
In case of eye contact	Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. In all cases of eye contamination it is a sensible precaution to seek medical advice.
If swallowed	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice

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.

SECTION 5: Fire-fighting measures

Suitable extinguishing media
Specific Methods: Small fire
• USE FLOODING QUANTITIES OF WATER.
• Do not use dry chemicals, CO2 or foam.
• If safe to do so, move undamaged containers from fire area.
• Do not move cargo if cargo has been exposed to heat.
Large fire
• Flood fire area with water from a protected position.
• Cool containers with flooding quantities of water until well after fire is out – If impossible, withdraw from area and let fire burn.
• Avoid getting water inside containers: a violent reaction may occur.
• Dam fire control water for later disposal.
• ALWAYS stay away from tank ends.

Specific hazards arising from the chemical
Will accelerate burning when involved in a fire. May ignite combustibles (wood, paper, clothing, etc). Fire may produce irritating, poisonous, and/or corrosive gases.

Special protective actions for fire-fighters
Wear SCBA and chemical splash suit. Structural firefighter's uniform will provide limited protection.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

Methods and materials for containment and cleaning up
• Do not contaminate.
• Keep combustibles (wood, paper, clothing, oil, and so on) away from spilled material.
• Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
• Use water spray to knock down vapours or divert vapour clouds.
• Prevent entry into waterways, drains or confined areas.
• Prevent exposure to heat.
Dry spill

• Use clean non-sparking tools to transfer material to a clean, dry plastic container and cover loosely.
• Move container from spill area.
Small liquid spill
• Use a non-combustible material like vermiculite, sand or earth to soak up the product and place in a loosely-covered container for later disposal.
Large liquid spill
• SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.
P501 Dispose of contents/container to an approved waste disposal plant.

SECTION 7: Handling and storage

Precautions for safe handling
Avoid ingestion or inhalation of dust, fumes and vapour. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Keep away from combustible materials, oxidising agents and metals. Keep containers closed when not in ure and use only in fumehood with adequate ventilation. In case of insufficient ventilation, wear a suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well-ventilated area, out of direct sunlight. Store in suitable, labelled containers. Keep containers tightly closed. Store away from incompatible materials. Ensure that storage conditions comply with applicable local and national regulations.

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.

Body protection
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 and apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Respiratory protection
If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/ NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Solid
Appearance	Pink, hygroscopic crystal.
Color	No data available.
Odor	Characteristic nitric acid.

Odor threshold	No data available.
Melting point/freezing point	37 °C
Boiling point or initial boiling point and boiling range	No data available.
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	Strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. An oxidizing agent is a material that readily yields oxygen or other oxidizing gas and readily reacts to promote combustion of combustible materials.
pH	~ 3 (50 g/l, H2O, 20 °C)
Kinematic viscosity	No data available.
Solubility	Solubility in Water: 3800 g/l (20 °C) Solubility in Organic Solvents: Soluble 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: 2.13
Relative vapor density	No data available.
Particle characteristics	No data available.

Supplemental information regarding physical hazard classes
No data available.

Further safety characteristics (supplemental)
Other Information: Water absorption hygroscopic.

SECTION 10: Stability and reactivity

Reactivity
Stable under normal conditions of storage and handling.

Reacts with incompatible materials

Chemical stability
Absorbs moisture from air.

Possibility of hazardous reactions
Reacts with combustible materials (alcohols, acids) generating toxic nitrous fumes. Reacts with strong oxidising agents and reducing agents.

Conditions to avoid
Incompatible materials, ignition and combustible sources, metals, dust generation and moisture.

Incompatible materials
Reducing agents, easily oxidized materials, acids, bases, alkaline earth metals and aluminum/aluminum alloys, flammable and combustible liquids.

Hazardous decomposition products
Nitrogen oxides, carbon dioxide and metal oxide fume.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Ingestion: Harmful if swallowed. Causes burns.

Inhalation: Irritating to the respiratory system and mucous membranes causing headaches.

Skin corrosion/irritation
Causes severe skin burns. Corrosive to skin. The symptoms may include redness, itching and swelling, irritation, severe pain and chemical burns with resultant skin/tissue destruction.

Serious eye damage/irritation
Causes serious eye damage. Eye contact will cause stinging, blurring,tearing, evere pain and chemical burns, resulting in possible blindness.

Respiratory or skin sensitization
Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.

Carcinogenicity
Not classified based on available information.

Reproductive toxicity
Not classified based on available information.

Specific target organ toxicity (STOT) - single exposure
Not classified based on available information.

Specific target organ toxicity (STOT) - repeated exposure
H373 May cause damage to organs(Brain)through prolonged or repeated exposure.

Aspiration hazard
Not classified based on available information.

Additional information
Chronic Effects: Chronic exposure to manganese nitrate may cause impairment to the central nervous system. Symptoms include sluggishness, sleepiness, muscle weakness, loss of facial muscle control, edema, emotional disturbances, spastic gait, weakness, general depression, headache, dizziness, abdominal cramps, vomiting, bloody diarrhea, convulsion and collapse.

SECTION 12: Ecological information

Toxicity
Harmful to aquatic life with long lasting effects.

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.

SECTION 14: Transport information

ADG (Road and Rail)
UN Number: 2724
Class: 5.1
Packing Group: III
Proper Shipping Name: MANGANESE NITRATE

Hazchem emergency action code (EAC)
1Z

IMDG
UN Number: 2724
Class: 5.1
Packing Group: III
EMS Number:
Proper Shipping Name: MANGANESE NITRATE

IATA
UN Number: 2724
Class: 5.1
Packing Group: III
Proper Shipping Name: MANGANESE NITRATE

SECTION 15: Regulatory information

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

Australia SUSMP
Poison Schedule: NS

SECTION 16: Other information

Further information/disclaimer
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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 fot 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 Airbourne Contaminants, December 2019
Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au
IATA, Dangerous Goods Regulations (DGR)
IMO, International Maritime Dangerous Goods Code (IMDG)