

Infosafe No™ 3CH1Z Issue Date : January 2021 RE-ISSUED by CHEMSUPP

Product Name **MANGANESE DIOXIDE**

Classified as hazardous

## 1. Identification

**GHS Product Identifier** MANGANESE DIOXIDE

**Company Name** CHEMSUPPLY AUSTRALIA PTY LTD (ABN 19 008 264 211)

**Address** 38 - 50 Bedford Street GILLMAN  
SA 5013 Australia

**Telephone/Fax Number** Tel: (08) 8440-2000

**Emergency phone number** CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

**E-mail Address** www.chemsupply.com.au

**Recommended use of the chemical and restrictions on use** Depolarizer in dry cell batteries (African and synthetic types only), pyrotechnics, matches, catalyst, scavenger and decolourizer, in building materials, manufacture of glass, painting (in porcelain industry), manufacture of dyes (in the textile industry), pigment, source of metallic manganese (as pyrolusite) and laboratory reagent.

Other Names	Name	Product Code
	MANGANESE DIOXIDE TG	MT017
	Manganese peroxide, Manganese binoxide, Manganese (IV) oxide, Manganese superoxide	
	MANGANESE DIOXIDE AR	MA017
	MANGANESE DIOXIDE LR	ML017

### Other Information

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.

## 2. Hazard Identification

**GHS classification of the substance/mixture** Acute Toxicity - Inhalation: Category 4  
Acute Toxicity - Oral: Category 4  
Specific target organ toxicity (repeated exposure) - Category 2

**Signal Word (s)** WARNING

**Hazard Statement (s)** H302 Harmful if swallowed.  
H332 Harmful if inhaled.  
H373 May cause damage to organs (brian) through prolonged or repeated exposure.

**Pictogram (s)** Health hazard, Exclamation mark



**Precautionary statement - Prevention** P261 Do not breathe dust/fume/gas/mist/vapours/spray.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.

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**Precautionary statement – Response** P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
P330 Rinse mouth.  
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P312 Call a POISON CENTER or doctor/physician if you feel unwell.  
P314 Get medical advice/attention if you feel unwell.

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

### 3. Composition/information on ingredients

Ingredients	Name	CAS	Proportion
	Manganese dioxide	1313-13-9	100 %

### 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. Get medical aid if cough or other symptoms appear.

**Ingestion** Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice if effects persist.

**Skin** Wash affected areas with copious quantities of water. If irritation occurs seek medical advice.

**Eye contact** Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. If rapid recovery does not occur, obtain medical attention

**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 a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor.

### 5. Fire-fighting measures

**Hazards from Combustion Products** May liberate toxic fumes in fire including oxides of manganese.

**Specific Methods** Use extinguishing media most appropriate for the surrounding fire. No limitations to the type of extinguishing media.  
Small fire: Use dry chemical, CO2, water spray or foam.  
Large fire: Use water spray, fog or foam.  
If safe to do so, move undamaged containers from the fire area. Cool containers with flooding quantities of water until well after the fire is out.

**Decomposition Temp.** ~535 °C

**Precautions in connection with Fire** Wear SCBA and chemical splash suit. Structural firefighter's uniform will provide limited protection.

### 6. Accidental release measures

**Personal Precautions** Avoid substance contact. Avoid generation of dusts: do not inhale dusts. Ensure supply of fresh air in enclosed rooms.

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

**Clean-up Methods - Small Spillages** Sweep up (avoid generating dust) and using clean non-sparking tools transfer to a clean, suitable, clearly labelled container for disposal in accordance with local regulations.

### 7. Handling and storage

**Precautions for Safe Handling** Avoid generating and inhaling dust.

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**Conditions for safe storage, including any incompatibilities** Keep containers securely sealed and protected against physical damage. Keep container dry Store at room temperature (15 - 25 °C).

## 8. Exposure controls/personal protection

<b>Other Exposure Information</b>	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, dust and compounds (as Mn) (Safe Work Australia) of 1 mg/m <sup>3</sup> . The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week.
<b>Appropriate engineering controls</b>	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.
<b>Respiratory Protection</b>	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.
<b>Eye Protection</b>	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.
<b>Hand Protection</b>	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.
<b>Personal Protective Equipment</b>	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.
<b>Footwear</b>	Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.
<b>Body Protection</b>	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.
<b>Hygiene Measures</b>	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

<b>Form</b>	Solid
<b>Appearance</b>	Brown-black crystals or powder.
<b>Odour</b>	Odourless.
<b>Decomposition Temperature</b>	~535 °C
<b>Melting Point</b>	Decomposes. Loses O <sub>2</sub> @ 535 °C yielding Mn <sub>3</sub> O <sub>4</sub> + O <sub>2</sub> .
<b>Solubility in Water</b>	Insoluble.
<b>Specific Gravity</b>	5.026

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<b>pH</b>	4.0 - 5.5 (200 g/l, H <sub>2</sub> O, 20 °C).
<b>Molecular Weight</b>	86.94
<b>Other Information</b>	Insoluble in nitric and cold sulfuric acids. Slowly dissolves in cold hydrochloric acid with evolution of chlorine. In presence of hydrogen peroxide or oxalic acid, it dissolves in dilute sulfuric and nitric acids.

## 10. Stability and reactivity

<b>Chemical Stability</b>	Stable under normal use conditons.
<b>Conditions to Avoid</b>	Strong heating. Keep away from reducing agents.
<b>Incompatible Materials</b>	Reducing agents, strong acids, aluminium, chlorine, oxidizing agents, phosphides, sulfur, sulfides and organic matter; risk of explosion with: azides, chlorates, oxidizable substances, hydrogen peroxide, combustible substances.
<b>Hazardous Decomposition Products</b>	Oxides of manganese. Oxygen.
<b>Possibility of hazardous reactions</b>	Exothermic reaction with: aluminium, oxidizing agents, strong acids, reducing agents and phosphides.
<b>Hazardous Polymerization</b>	Will not occur.
<b>Other Information</b>	Risk of ignition or formation of inflammable gases or vapours with: hydrogen sulfide, halogen-halogen compounds.

## 11. Toxicological Information

<b>Toxicology Information</b>	No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. If mishandled or overexposed to this product the following symptoms or effects may occur.
<b>Ingestion</b>	Harmful if swallowed. May cause irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract, nausea, vomiting, diarrhea and abdominal pain.
<b>Inhalation</b>	Harmful by inhalation. May cause tissue damage and pneumonia.
<b>Skin</b>	Contact with skin may result in irritation.
<b>Eye</b>	May cause soreness. May cause slight irritations.
<b>Respiratory sensitisation</b>	Not classified based on available information.
<b>Skin Sensitisation</b>	Not classified based on available information.
<b>Germ cell mutagenicity</b>	Not classified based on available information.
<b>Carcinogenicity</b>	Not classified based on available information.
<b>Reproductive Toxicity</b>	Not classified based on available information.
<b>STOT-single exposure</b>	Not classified based on available information.
<b>STOT-repeated exposure</b>	Specific target organ toxicity (repeated exposure) - Category 2 H373 May cause damage to organs (brian) through prolonged or repeated exposure.
<b>Chronic Effects</b>	Chronic manganese poisoning primarily involves the central nervous system. A permanent severe neurological lesion results, producing a stolid mask-like appearance of the face, absent mindedness, mental confusion, aggressiveness, hallucinations, emotional disturbances such as uncontrollable laughter and affecting motor ability, producing a spastic gait with tendency to fall in walking. This total disablement can result from high exposures for a few months, but is more likely after prolonged and repeated exposures above 30 mg/m <sup>3</sup> . Chronic poisoning has occurred following exposures at the TLV of 5 mg/m <sup>3</sup> . Early symptoms include languor, sleepiness and weakness in the legs.

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High incidence of pneumonia has been found in workers exposed to the dust or fume of some manganese compounds.

## 12. Ecological information

**Ecotoxicity**      Quantitative data on the ecological effect of this product are not available.

**Persistence and degradability**      Methods for the determination of biodegradability are not applicable to inorganic substances.

**Short Summary of Assessment of Environmental Impact**      Due to the poor solubility of the product, no harmful effects on aquatic organisms are to be expected when handled and used with due care and attention.

## 13. Disposal considerations

**Disposal Considerations**      Whatever cannot be saved for recovery or recycling should be disposed of according to relevant local, state and federal government regulations.

## 14. Transport information

**Transport Information**      Not classified as a Dangerous Good according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

## 15. Regulatory information

**Regulatory Information**      All the constituents of this product are listed on the Australian Inventory of Chemical Substances ( AICS ), or exempted. 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.  
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'.  
Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand.  
Safe Work Australia, 'Hazardous Chemical Information System'.  
Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances'.  
Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment'.

**Contact Person/Point**      Paul McCarthy Ph. (08) 8440 2000      **DISCLAIMER STATEMENT:**  
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**Empirical Formula & Structural Formula**      MnO2

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