



# PRODUCT NAME FERTILISER BLENDS CONTAINING 10% (AND GREATER) MANGANESE SULFATE

## Prevention statements

|      |   |
|------|---|
| P260 | Do not breathe dust/fume/gas/mist/vapours/spray.  |
| P264 | Wash 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/hearing protection. |

## Response statements

|                    |  |
|--------------------|--|
| 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 CENTRE or doctor/physician.  |
| P314               | Get medical advice/attention if you feel unwell.   |

## Storage statements

None allocated.

## Disposal statements

|      |  |
|------|--|
| P501 | Dispose of contents/container in accordance with relevant regulations. |
|------|--|

## 2.3 Other hazards

No information provided.

## 3. COMPOSITION/ INFORMATION ON INGREDIENTS

### 3.1 Substances / Mixtures

| Ingredient                     | CAS Number | EC Number | Content       |
|--------------------------------|------------|-----------|---------------|
| MANGANESE SULPHATE MONOHYDRATE | 10034-96-5 | 600-072-9 | <25%          |
| AMMONIUM SULPHATE              | 7783-20-2  | 231-984-1 | Not Available |
| CALCIUM PHOSPHATE, MONOBASIC   | 7758-23-8  | 231-837-1 | Not Available |
| COPPER (II) OXIDE              | 1317-38-0  | 215-269-1 | Not Available |
| MOLYBDENUM TRIOXIDE            | 1313-27-5  | 215-204-7 | Not Available |
| MONOAMMONIUM PHOSPHATE         | 7722-76-1  | 231-764-5 | Not Available |
| POTASSIUM CHLORIDE             | 7447-40-7  | 231-211-8 | Not Available |
| UREA                           | 57-13-6    | 200-315-5 | Not Available |
| ZINC OXIDE                     | 1314-13-2  | 215-222-5 | Not Available |
| CALCIUM SULPHATE DIHYDRATE     | 10101-41-4 | 600-148-1 | Not Available |

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

|                             |  |
|-----------------------------|--|
| <b>Eye</b>                  | If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.                 |
| <b>Inhalation</b>           | If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.  |
| <b>Skin</b>                 | If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor. |
| <b>Ingestion</b>            | For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once).   |
| <b>First aid facilities</b> | None allocated.  |

### 4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

### 4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

## 5. FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

**5.2 Special hazards arising from the substance or mixture**

Non flammable. May evolve toxic gases if strongly heated.

**5.3 Advice for firefighters**

No fire or explosion hazard exists.

**5.4 Hazchem code**

None allocated.

**6. ACCIDENTAL RELEASE MEASURES**

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

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Ventilate area where possible.

**6.2 Environmental precautions**

Prevent product from entering drains and waterways.

**6.3 Methods of cleaning up**

Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.

**6.4 Reference to other sections**

See Sections 8 and 13 for exposure controls and disposal.

**7. HANDLING AND STORAGE**

**7.1 Precautions for safe handling**

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

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

Store in a cool, dry, well ventilated area, removed from foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Do not allow to come in contact with water, either from rain, condensation or the surface on which stored. Bagged fertilisers should be stored under cover and out of direct sunlight (which degrades woven polypropylene packs). If stored in the open, do so for short periods only, and cover with a tarpaulin. If stacking is necessary, bulk bags should be stored in a stable manner, preferably in a pyramidal style. Bulk bags should not be stacked more than two high for bags containing 1 000 kg or more, or more than four high for bags containing up to 500 kg. The Pallet Capacity Rating (design weight) should not be exceeded on the bottom tier for other packs. High stacking should be avoided as pressure promotes caking. Store away from farm chemicals, e.g. insecticides, fungicides and herbicides.

**7.3 Specific end uses**

No information provided.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**8.1 Control parameters**

**Exposure standards**

| Ingredient                              | Reference      | TWA |                   | STEL |                   |
|---|----------------|-----|-------------------|------|-------------------|
|   |                | ppm | mg/m <sup>3</sup> | ppm  | mg/m <sup>3</sup> |
| Calcium sulphate                        | SWA [Proposed] | --  | 1.5               | --   | --                |
| Calcium sulphate (a)                    | SWA [AUS]      | --  | 10                | --   | --                |
| Copper (fume)                           | SWA [AUS]      | --  | 0.2               | --   | --                |
| Copper (fume, dusts & mists)            | SWA [Proposed] | --  | 0.01              | --   | --                |
| Copper, dusts & mists (as Cu)           | SWA [AUS]      | --  | 1                 | --   | --                |
| Manganese, dust & compounds (as Mn)     | SWA [AUS]      | --  | 1                 | --   | --                |
| Manganese, fume (as Mn)                 | SWA [AUS]      | --  | 1                 | --   | 3                 |
| Molybdenum, insoluble compounds (as Mo) | SWA [AUS]      | --  | 10                | --   | --                |
| Molybdenum, soluble compounds (as Mo)   | SWA [AUS]      | --  | 5                 | --   | --                |
| Zinc oxide (dust)                       | SWA [AUS]      | --  | 10                | --   | --                |
| Zinc oxide (fume & dust)                | SWA [Proposed] | --  | 2                 | --   | 10                |
| Zinc oxide (fume)                       | SWA [AUS]      | --  | 5                 | --   | 10                |

# PRODUCT NAME FERTILISER BLENDS CONTAINING 10% (AND GREATER) MANGANESE SULFATE

## Biological limits

No biological limit values have been entered for this product.

## 8.2 Exposure controls

**Engineering controls** Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

## PPE

|                    |   |
|--------------------|---|
| <b>Eye / Face</b>  | At high dust levels, wear dust-proof goggles.                                       |
| <b>Hands</b>       | Individuals with sensitive skin should consider wearing PVC or rubber gloves.       |
| <b>Body</b>        | When using large quantities or where heavy contamination is likely, wear coveralls. |
| <b>Respiratory</b> | Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.          |

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

---

### 9.1 Information on basic physical and chemical properties

|                                  |                                   |
|----------------------------------|-----------------------------------|
| <b>Appearance</b>                | GREY/BROWN/WHITE AND RED GRANULES |
| <b>Odour</b>                     | ODOURLESS                         |
| <b>Flammability</b>              | NON FLAMMABLE                     |
| <b>Flash point</b>               | NOT RELEVANT                      |
| <b>Boiling point</b>             | NOT AVAILABLE                     |
| <b>Melting point</b>             | NOT AVAILABLE                     |
| <b>Evaporation rate</b>          | NOT AVAILABLE                     |
| <b>pH</b>                        | NOT AVAILABLE                     |
| <b>Vapour density</b>            | NOT AVAILABLE                     |
| <b>Solubility (water)</b>        | SOLUBLE                           |
| <b>Vapour pressure</b>           | NOT AVAILABLE                     |
| <b>Upper explosion limit</b>     | NOT RELEVANT                      |
| <b>Lower explosion limit</b>     | NOT RELEVANT                      |
| <b>Partition coefficient</b>     | NOT AVAILABLE                     |
| <b>Autoignition temperature</b>  | NOT AVAILABLE                     |
| <b>Decomposition temperature</b> | NOT AVAILABLE                     |
| <b>Viscosity</b>                 | NOT AVAILABLE                     |
| <b>Explosive properties</b>      | NOT AVAILABLE                     |
| <b>Oxidising properties</b>      | NOT AVAILABLE                     |
| <b>Odour threshold</b>           | NOT AVAILABLE                     |

---

## 10. STABILITY AND REACTIVITY

---

### 10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

### 10.2 Chemical stability

Stable under recommended conditions of storage.

### 10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

### 10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

### 10.5 Incompatible materials

Compatible with most commonly used materials.

### 10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

---

## 11. TOXICOLOGICAL INFORMATION

---

### 11.1 Information on toxicological effects

**Acute toxicity** May be harmful if swallowed, in contact with skin, and/or if inhaled.

**PRODUCT NAME FERTILISER BLENDS CONTAINING 10% (AND GREATER) MANGANESE SULFATE****Information available for the ingredients:**

| Ingredient                     | Oral LD50                        | Dermal LD50            | Inhalation LC50                         |
|--------------------------------|----------------------------------|------------------------|---|
| MANGANESE SULPHATE MONOHYDRATE | 2,150 mg/kg (rat)<br>(anhydrous) | --                     | > 4.45 mg/l/4hrs (rat)                  |
| AMMONIUM SULPHATE              | 4,250 mg/kg (rat)                | > 2000 mg/kg (rat)     | --                                      |
| CALCIUM PHOSPHATE, MONOBASIC   | 15250 mg/kg (mouse)              | --                     | --                                      |
| COPPER (II) OXIDE              | > 2500 mg/kg (rat)               | > 2000 mg/kg (rat)     | --                                      |
| MOLYBDENUM TRIOXIDE            | 2689 mg/kg (rat)                 | > 2000 mg/kg (rat)     | > 5.84 mg/L (rat)                       |
| MONOAMMONIUM PHOSPHATE         | 5,750 mg/kg (rat)                | > 7,940 mg/kg (rabbit) | --                                      |
| POTASSIUM CHLORIDE             | 2600 mg/kg (rat)                 | --                     | --                                      |
| UREA                           | > 5000 mg/kg (rat)               | > 5000 mg/kg (rat)     | No data but expected to be low toxicity |
| ZINC OXIDE                     | 7950 mg/kg (mouse)               | --                     | 2500 mg/m <sup>3</sup> (mouse)          |
| CALCIUM SULPHATE DIHYDRATE     | 3000 mg/kg (rat)                 | --                     | --                                      |

|                                 |  |
|---------------------------------|--|
| <b>Skin</b>                     | Prolonged or repeated contact may result in mild irritation, rash and dermatitis.  |
| <b>Eye</b>                      | Risk of serious damage to eyes. Contact may result in mild irritation, lacrimation and redness.  |
| <b>Sensitisation</b>            | Not classified as causing skin or respiratory sensitisation.   |
| <b>Mutagenicity</b>             | Not classified as a mutagen.   |
| <b>Carcinogenicity</b>          | Not classified as a carcinogen.  |
| <b>Reproductive</b>             | Not classified as a reproductive toxin.  |
| <b>STOT - single exposure</b>   | Over exposure may result in mild irritation of the nose and throat, with coughing.   |
| <b>STOT - repeated exposure</b> | Repeated exposure to manganese may result in manganese poisoning (manganism), a progressively disabling brain disease, which in its latter stages resembles Parkinsons disease. Symptoms may result in lack of appetite, fatigue and changes in speech, balance and personality. |
| <b>Aspiration</b>               | Not classified as causing aspiration.  |

**12. ECOLOGICAL INFORMATION****12.1 Toxicity**

Harmful to aquatic life with long lasting effects.

**12.2 Persistence and degradability**

No information provided.

**12.3 Bioaccumulative potential**

No information provided.

**12.4 Mobility in soil**

No information provided.

**12.5 Other adverse effects**

Plant nutrients may be beneficial to plants at low levels, however high levels may cause reduced growth or burns in sensitive species. Excess may be washed through soil to waterways. Nutrients released to waterways may cause algal blooms, with potential for toxic effects on aquatic organisms.

**13. DISPOSAL CONSIDERATIONS****13.1 Waste treatment methods**

**Waste disposal** Reuse or recycle where possible. Alternatively, ensure product is covered with moist soil to prevent dust generation and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

**Legislation** Dispose of in accordance with relevant local legislation.

**14. TRANSPORT INFORMATION**

**NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA**

**PRODUCT NAME FERTILISER BLENDS CONTAINING 10% (AND GREATER) MANGANESE SULFATE**

|                                    | LAND TRANSPORT (ADG) | SEA TRANSPORT (IMDG / IMO) | AIR TRANSPORT (IATA / ICAO) |
|------------------------------------|----------------------|----------------------------|-----------------------------|
| <b>14.1 UN Number</b>              | None allocated.      | None allocated.            | None allocated.             |
| <b>14.2 Proper Shipping Name</b>   | None allocated.      | None allocated.            | None allocated.             |
| <b>14.3 Transport hazard class</b> | None allocated.      | None allocated.            | None allocated.             |
| <b>14.4 Packing Group</b>          | None allocated.      | None allocated.            | None allocated.             |

**14.5 Environmental hazards**

Not a Marine Pollutant.

**14.6 Special precautions for user**

|                     |                 |
|---------------------|-----------------|
| <b>Hazchem code</b> | None allocated. |
|---------------------|-----------------|

**15. REGULATORY INFORMATION****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

|                           |   |
|---------------------------|---|
| <b>Poison schedule</b>    | A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP). |
| <b>Classifications</b>    | Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).                    |
| <b>Inventory listings</b> | <b>AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)</b><br>All components are listed on AIIC, or are exempt.                                      |

**16. OTHER INFORMATION**

|                               |  |
|-------------------------------|--|
| <b>Additional information</b> | <p><b>EXPOSURE STANDARDS - TIME WEIGHTED AVERAGES:</b> Exposure standards are established on the premise of an 8 hour work period of normal intensity, under normal climatic conditions and where a 16 hour break between shifts exists to enable the body to eliminate absorbed contaminants. In the following circumstances, exposure standards must be reduced: Strenuous work conditions; hot, humid climates; high altitude conditions; extended shifts (which increase the exposure period and shorten the period of recuperation).</p> <p><b>RESPIRATORS:</b> In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.</p> <p><b>PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:</b><br/>The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.</p> <p><b>HEALTH EFFECTS FROM EXPOSURE:</b><br/>It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.</p> |
|-------------------------------|--|

**PRODUCT NAME FERTILISER BLENDS CONTAINING 10% (AND GREATER) MANGANESE SULFATE****Abbreviations**

|                   |   |
|-------------------|---|
| ACGIH             | American Conference of Governmental Industrial Hygienists                                       |
| CAS #             | Chemical Abstract Service number - used to uniquely identify chemical compounds                 |
| CNS               | Central Nervous System  |
| EC No.            | EC No - European Community Number   |
| EMS               | Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)                   |
| GHS               | Globally Harmonized System  |
| GTEPG             | Group Text Emergency Procedure Guide  |
| IARC              | International Agency for Research on Cancer   |
| LC50              | Lethal Concentration, 50% / Median Lethal Concentration   |
| LD50              | Lethal Dose, 50% / Median Lethal Dose   |
| mg/m <sup>3</sup> | Milligrams per Cubic Metre  |
| OEL               | Occupational Exposure Limit   |
| pH                | relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline). |
| ppm               | Parts Per Million   |
| STEL              | Short-Term Exposure Limit   |
| STOT-RE           | Specific target organ toxicity (repeated exposure)  |
| STOT-SE           | Specific target organ toxicity (single exposure)  |
| SUSMP             | Standard for the Uniform Scheduling of Medicines and Poisons                                    |
| SWA               | Safe Work Australia   |
| TLV               | Threshold Limit Value   |
| TWA               | Time Weighted Average   |

**Report status**

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

**Prepared by**

Risk Management Technologies  
5 Ventnor Ave, West Perth  
Western Australia 6005  
Phone: +61 8 9322 1711  
Fax: +61 8 9322 1794  
Email: [info@rmt.com.au](mailto:info@rmt.com.au)  
Web: [www.rmtglobal.com](http://www.rmtglobal.com)

**[ End of SDS ]**