Section 1 - Identification of The Material and Supplier

<table>
<thead>
<tr>
<th>J.C. &amp; A.T. Searle Pty Ltd</th>
<th>Phone: +61 7 5422 3000 (BH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4914 D'aguilar Highway (PO Box 183)</td>
<td>Fax: +61 7 5497 1997</td>
</tr>
<tr>
<td>Kilcoy, Qld 4515</td>
<td><a href="http://www.searles.com.au">www.searles.com.au</a></td>
</tr>
</tbody>
</table>

Chemical nature: Blend of zinc sulfate and manganese sulfate.

Trade Name: Zinc & Manganese Citrus & Vine Spray

Product Code: ZMN500

Product Use: Source of zinc, manganese and sulfur for citrus trees and vines as indicated on the product label.

Creation Date: December, 2012

This version issued: December, 2012 and is valid for 5 years from this date.

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Section 2 - Hazards Identification

Statement of Hazardous Nature

This product is classified as: Xn, Harmful. N, Dangerous to the environment. Hazardous according to the criteria of SWA.

Not a Dangerous Good according to the Australian Dangerous Goods (ADG) Code.

Risk Phrases: R22, R41, R48/20/22, R50/53. Harmful if swallowed. Risk of serious damage to eyes. Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. Very toxic to aquatic organisms, may cause long-term adverse effects to the aquatic environment.

Safety Phrases: S2, S20, S22, S46, S61, S36/39. Keep out of reach of children. When using, do not eat or drink. Do not breathe dust. If swallowed, contact a doctor or Poisons Information Centre immediately and show this MSDS or label. Avoid release to the environment.* Refer to special instructions/Safety Data Sheets. Wear suitable protective clothing and eye/face protection.

* Small quantities such as used on trees present little danger to the environment. However do not put this product into waterways or sewers.

SUSMP Classification: S6

ADG Classification: None allocated. Not a Dangerous Good under the ADG Code.

UN Number: None allocated

GHS Signal word: WARNING

HAZARD STATEMENT:

- H302: Harmful if swallowed.
- H319: Causes serious eye irritation.
- H373: May cause damage to organs through prolonged or repeated exposure.
- H410: Very toxic to aquatic life with long lasting effects.

PREVENTION

- P260: Do not breathe dusts.
- P264: Wash contacted areas thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P280: Wear protective gloves, protective clothing and eye or face protection.

RESPONSE

- P314: Get medical advice or attention if you feel unwell.
- P330: Rinse mouth.
- P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
- P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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SAFETY DATA SHEET

Issued by: J.C. & A.T. Searle Pty Ltd Phone: 07 5422 3000

Poisons Information Centre: 13 1126 from anywhere in Australia, (0800 764 766 in New Zealand)
This revision issued: December, 2012

Emergency Overview

Physical Description & Colour: Slightly pink coloured powder or crystals.
Odour: No odour.
Major Health Hazards: may cause serious damage to eyes, harmful if swallowed.

Potential Health Effects

Inhalation:
Short Term Exposure: Available data indicates that this product is not harmful. However product may be mildly irritating, although unlikely to cause anything more than mild transient discomfort.
Long Term Exposure: No data for health effects associated with long term inhalation.

Skin Contact:
Short Term Exposure: Available data indicates that this product is not harmful. It should present no hazards in normal use. However product may be irritating, but is unlikely to cause anything more than mild transient discomfort.
Long Term Exposure: No data for health effects associated with long term skin exposure.

Eye Contact:
Short Term Exposure: This product is a severe eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms such as swelling of eyelids and blurred vision may also become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment is likely to cause permanent damage.
Long Term Exposure: No data for health effects associated with long term eye exposure.

Ingestion:
Short Term Exposure: Significant oral exposure is considered to be unlikely. Available data shows that this product is harmful, but symptoms are not available. However, this product is an oral irritant. Symptoms may include burning sensation and reddening of skin in mouth and throat. Other symptoms may also become evident, but all should disappear once exposure has ceased.
Long Term Exposure: No data for health effects associated with long term ingestion.

Carcinogen Status:
SWA: No significant ingredient is classified as carcinogenic by SWA.
NTP: No significant ingredient is classified as carcinogenic by NTP.
IARC: No significant ingredient is classified as carcinogenic by IARC.

Section 3 - Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS No</th>
<th>Conc,%</th>
<th>TWA (mg/m³)</th>
<th>STEL (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc sulfate</td>
<td>7733-02-0</td>
<td>500g/kg</td>
<td>not set</td>
<td>not set</td>
</tr>
<tr>
<td>Manganese sulfate</td>
<td>7785-87-7</td>
<td>500g/kg</td>
<td>not set</td>
<td>not set</td>
</tr>
</tbody>
</table>

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:
You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this MSDS with you when you call.
Inhalation: No first aid measures normally required. However, if inhalation has occurred, and irritation has developed, remove to fresh air and observe until recovered. If irritation becomes painful or persists more than about 30 minutes, seek medical advice.

**Skin Contact:** Gently brush away excess particles. Wash gently and thoroughly with water (use non-abrasive soap if necessary) for 5 minutes or until chemical is removed.

**Eye Contact:** Quickly and gently brush particles from eyes. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 20 minutes or until the product is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical attention immediately. Take special care if exposed person is wearing contact lenses.

**Ingestion:** If swallowed, do NOT induce vomiting. Wash mouth with water and contact a Poisons Information Centre, or call a doctor.

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**Section 5 - Fire Fighting Measures**

**Fire and Explosion Hazards:** There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.

No fire decomposition products are expected from this product at temperatures normally achieved in a fire. Fire decomposition products from this product are not expected to be hazardous or harmful.

**Extinguishing Media:** Not combustible. Use extinguishing media suited to burning materials.

**Fire Fighting:** If a significant quantity of this product is involved in a fire, call the fire brigade.

**Flash point:**

- Does not burn.

**Upper Flammability Limit:**

- Does not burn.

**Lower Flammability Limit:**

- Does not burn.

**Autoignition temperature:**

- Not applicable - does not burn.

**Flammability Class:**

- Does not burn.

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**Section 6 - Accidental Release Measures**

**Accidental release:** This product is sold in small packages, and the accidental release from one of these is not usually a cause for concern. For minor spills, clean up, rinsing to sewer and put empty container in garbage. Although no special protective clothing is normally necessary because of occasional minor contact with this product, it is good practice to wear impermeable gloves when handling chemical products. In the event of a major spill, prevent spillage from entering drains or water courses and call emergency services.

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**Section 7 - Handling and Storage**

**Handling:** Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this MSDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

**Storage:** This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. Make sure that containers of this product are kept tightly closed. Keep containers dry and away from water. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Check packaging - there may be further storage instructions on the label.

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**Section 8 - Exposure Controls and Personal Protection**

The following Australian Standards will provide general advice regarding safety clothing and equipment:


**SWA Exposure Limits**

- **TWA (mg/m³)**
- **STEL (mg/m³)**

Exposure limits have not been established by SWA for any of the significant ingredients in this product.

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

**Ventilation:** No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that dusts are minimised.

**Eye Protection:** Protective glasses or goggles must be worn when this product is being used. Failure to protect your eyes may lead to severe harm to them or to general health. Emergency eye wash facilities must also be available in an area close to where this product is being used.
Skin Protection: You should avoid contact even with mild skin irritants. Therefore you should wear suitable impervious elbow-length gloves and facial protection when handling this product. See below for suitable material types.

Protective Material Types: We suggest that protective clothing be made from the following materials: rubber, PVC.

Respirator: If there is a significant chance that dusts are likely to build up in the area where this product is being used, we recommend that you use a suitable Dust Mask. Otherwise, not normally necessary. Eyebaths or eyewash stations and safety deluge showers should be provided near to where this product is being handled commercially.

Section 9 - Physical and Chemical Properties:

Physical Description & Colour: Slightly pink coloured powder or crystals.
Odour: No odour.
Boiling Point: Not available.
Freezing/Melting Point: No specific data. Solid at normal temperatures.
Vapour Pressure: Nil at 100°C.
Vapour Density: Not applicable.
Specific Gravity: No data.
Water Solubility: Completely soluble.
PH: No data. Expected to be slightly acidic.
Volatility: Nil at normal ambient temperatures.
Odour Threshold: No data.
Evaporation Rate: Not applicable.
Coeff Oil/water Distribution: No data
Viscosity: Not applicable.
Autoignition temp: Not applicable - does not burn.

Section 10 - Stability and Reactivity

Reactivity: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

Conditions to Avoid: Keep containers tightly closed. Containers should be kept dry.

Incompatibilities: bases, strong reducing agents.

Fire Decomposition: No significant quantities of decomposition products are expected at temperatures normally achieved in a fire.

Polymerisation: This product will not undergo polymerisation reactions.

Section 11 - Toxicological Information

Local Effects: There is no data to hand indicating any particular target organs.

Classification of Hazardous Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Risk Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc Sulfate Conc&gt;=25%</td>
<td>Xn; R22; R41</td>
</tr>
<tr>
<td>Manganese Sulfate Conc&gt;=10%</td>
<td>Xn; R48/20/22</td>
</tr>
</tbody>
</table>

Section 12 - Ecological Information

Very toxic to aquatic organisms, may cause long-term adverse effects to the aquatic environment. This product is unlikely to adversely affect the environment. Salts, acids and bases are typically diluted and neutralised when released to the environment in small quantities.

Section 13 - Disposal Considerations

Disposal: Dispose of small quantities and empty containers by wrapping with paper and putting in garbage. For larger quantities, if recycling or reclaiming is not possible, use a commercial waste disposal service.
Section 14 - Transport Information

**ADG Code:** This product is not classified as a Dangerous Good. No special transport conditions are necessary unless required by other regulations.

Section 15 - Regulatory Information

**AICS:** All of the significant ingredients in this formulation are compliant with NICNAS regulations. The following ingredient: Zinc sulfate, is mentioned in the SUSMP.

Section 16 - Other Information

This MSDS contains only safety-related information. For other data see product literature.

**Acronyms:**
- **ADG Code**
  Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition)
- **AICS**
  Australian Inventory of Chemical Substances
- **SWA**
  Safe Work Australia, formerly ASCC and NOHSC
- **CAS number**
  Chemical Abstracts Service Registry Number
- **Hazchem Code**
  Emergency action code of numbers and letters that provide information to emergency services especially firefighters
- **IARC**
  International Agency for Research on Cancer
- **NOS**
  Not otherwise specified
- **NTP**
  National Toxicology Program (USA)
- **R-Phrase**
  Risk Phrase
- **SUSMP**
  Standard for the Uniform Scheduling of Medicines & Poisons
- **UN Number**
  United Nations Number

This MSDS summarizes our best knowledge of the health and safety hazard statement: information of the product and how to safely handle and use the product in the workplace. Each user must review this MSDS in the context of how the product will be handled and used in the workplace. If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company so we can attempt to obtain additional information from our suppliers.

Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request.

Please read all labels carefully before using product.

This MSDS is prepared in accord with the SWA document “Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice” (December 2011).
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http://www.kilford.com.au/ Phone (02)9251 4532

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