Material Safety Data Sheet

Infosafe No™ NUOF9

Issue Date: February 2016

ISSUED by NUFARM

Product Name PENNCOZEB® 420SC Fungicide

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

<table>
<thead>
<tr>
<th>Product Name</th>
<th>PENNCOZEB® 420SC Fungicide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Code</td>
<td>5355</td>
</tr>
<tr>
<td>Product Type</td>
<td>Group M3 Fungicide</td>
</tr>
<tr>
<td>Company Name</td>
<td>NUFARM AUSTRALIA LIMITED. (ABN 80 004 377 780)</td>
</tr>
<tr>
<td>Address</td>
<td>103-105 Pipe Road Laverton North Victoria 3026 Australia</td>
</tr>
<tr>
<td>Emergency Tel.</td>
<td>1800 033 498 (24hr Australia)</td>
</tr>
<tr>
<td>Telephone/Fax</td>
<td>Tel: +61 3 9282-1000 Fax: +61 3 9282-1001</td>
</tr>
</tbody>
</table>

Recommended Use

For the control of leaf spot and suppression of other diseases on bananas and control of fungal diseases of cucurbits, potatoes, tomatoes, almonds, grape vines, chickpeas, faba beans, lentils, oilseed poppy and turf as shown in the Directions for Use Table on the label.

Other Information

This Safety Data Sheet describes the properties of the concentrated product. The physical properties and the assessments may not apply to the properties of the product once it has been diluted for application.

2. HAZARDS IDENTIFICATION

<table>
<thead>
<tr>
<th>Hazard Classification</th>
<th>Classified as hazardous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard</td>
<td>HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. Hazard classification according to the criteria of NOHSC. Dangerous goods classification according to the Australia Dangerous Goods Code.</td>
</tr>
</tbody>
</table>

Risk Phrase(s)

- R43 May cause sensitization by skin contact.
- R63 Possible risk of harm to the unborn child.

Safety Phrase(s)

- S13 Keep away from food, drink and animal feeding stuffs.
- S2 Keep out of reach of children.
- S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
- S46 If swallowed, seek medical advice immediately and show this container or label.

Other Information

Poisons Schedule S5

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Characterization</th>
<th>Liquid</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Name</th>
<th>CAS</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mancozeb</td>
<td>8018-01-7</td>
<td>420 g/L</td>
</tr>
<tr>
<td></td>
<td>Inerts (not hazardous)</td>
<td>to 100%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Petroleum Oil</td>
<td>100 g/L</td>
<td></td>
</tr>
</tbody>
</table>

Substance Chemical Family

<table>
<thead>
<tr>
<th>Synonyms</th>
<th>Dithiocarbamate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mancozeb</td>
<td></td>
</tr>
</tbody>
</table>

Other Information

This product contains a hazardous component in trace quantities. The concentration of ethylene thiourea is < 0.05 %.

4. FIRST AID MEASURES

<table>
<thead>
<tr>
<th>Inhalation</th>
<th>Remove affected person to fresh air until recovered. If symptoms develop or persist, seek medical advice.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingestion</td>
<td>If swallowed DO NOT induce vomiting. Give a glass of water. Seek medical advice if effects persist. If poisoning occurs, contact a doctor or Poisons Information Centre on 13 11 26.</td>
</tr>
<tr>
<td>Skin</td>
<td>If skin contact occurs, remove contaminated clothing and wash skin thoroughly with water.</td>
</tr>
</tbody>
</table>
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Classified as hazardous

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media None required but use water spray to cool containers or personnel threatened by fire.

If involved in a fire, the product will not burn. Choose extinguishing media to suit the burning material.

Avoid using large volumes of water which would spread the product.

Hazard from Combustion Products Non-combustible.

If involved in a fire, the dehydrated components may emit oxides of nitrogen and sulphur, possibly carbon disulphide or ethylene diamine and oxides of manganese or zinc.

Special Protective Equipment for fire fighters Breathable air apparatus should be worn when fighting a fire in which mancozeb is involved.

6. ACCIDENTAL RELEASE MEASURES

Spills & Disposal Contain spill and absorb with clay, sand, soil or proprietary absorbent (such as vermiculite).

Collect in sealed open top containers for disposal.

If possible, ring 1800 033 498 for specialist advice.

On-site disposal of concentrate is not acceptable.

Clean-up Methods - Large Spillages Place damaged containers in recovery bins (if available) and return to manufacturer.

Environmental Precautions Use earthen bunds or absorbent bunding to prevent spreading of spillage.

7. HANDLING AND STORAGE

Precautions for Safe Handling Do NOT spray in high winds.

Do NOT contaminate dams, rivers or streams, or any other water bodies with pesticide or used containers.

Do not store for prolonged periods in direct sunlight.

Precautions for Safe Storage No special precautions are necessary when handling sealed containers.

Store in the closed, original container in a cool, well ventilated area.

Other Information Always read the label and any attached leaflet before use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards No exposure standard for this product has been set, however, an exposure standard has been set for manganese, dust and compounds at 1 mg/m³.

Engineering Controls Natural ventilation is sufficient when handling concentrate and preparing spray solution.

Respiratory Protection Do not inhale spray mist.

When using the prepared spray, wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves and face shield or goggles.

When opening the container and preparing the spray wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), a washable hat and elbow length butyl rubber gloves.

Hygiene Measures After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.

Wash contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form Liquid
Material Safety Data Sheet

Product Name: PENNCOZEB® 420SC Fungicide

Classified as hazardous

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal conditions.

Hazardous Polymerization: Hazardous polymerisation is not possible.

11. TOXICOLOGICAL INFORMATION

Toxicity Information

Inhalation: No harmful effects are expected if the precautions on the label and this MSDS are followed.

The components of the product are of low volatility and no adverse effects are expected from handling the concentrate.

May cause sensitisation by repeated inhalation.

Ingestion: The concentrate is of low toxicity if swallowed.

If aspirated into the lung, e.g. from vomiting, the presence of adjuvants may result in lung damage.

Skin: May cause sensitisation by prolonged skin contact.

Eye: May irritate the eyes.

Chronic Effects: Prolonged exposure to dust or mists containing manganese compounds can cause progressive poisoning. The signs and symptoms are apathy, loss of balance and weakness. More advanced poisoning may show evidence of central nervous system disturbance.

Reproductive Toxicity: Evidence from animal studies suggests the potential for developmental toxicity on repeated or prolonged exposure.

Acute Toxicity - Oral

LD50 (rat) >5000 mg/kg for mancozeb technical

Acute Toxicity - Dermal

LD50 (percutaneous, rat) >10,000 mg/kg for mancozeb

LD50 (percutaneous, rabbit) >5,000 mg/kg for mancozeb

Skin Irritation: Mild to moderate skin irritant.

Skin Sensitisation: Prolonged and repeated skin contact may result in skin sensitisation.

Human Effects: Prolonged and repeated exposure can occasionally cause skin irritation, conjunctivitis and bronchitis. May cause sensitisation by inhalation or skin contact.

Other Information: The Australian Acceptable Daily Intake (ADI) for mancozeb for a human is 0.006 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 0.6 mg/kg/day, the level determined to show no effects during long term exposure for the most sensitive indicators and the most sensitive species. (Ref: Comm. Dept. of Health and Ageing, Office of Chemical Safety, 'ADI List', December 2014).

12. ECOLOGICAL INFORMATION

Print Date: 29/02/2016
Persistence / Degradability
- Mancozeb is rapidly absorbed and inactivated by contact with soil.
- Half life in soil is typically 6-15 days.

Acute Toxicity - Fish
- Harmful to fish. LC50 (48hr) for rainbow trout is 0.074 mg/l.

Acute Toxicity - Daphnia
- EC50 (48hr) for daphnia magna is 0.074 mg/l for mancozeb.

Acute Toxicity - Algae
- EC50 for Pseudokirchneriella subcapitata is 0.044 mg/l.

Acute Toxicity - Other Organisms
- Bees: Not toxic to bees. LD50 193 µg/bee.
- Birds: Not toxic to birds. LD50 for mancozeb is >1000 mg/kg

13. DISPOSAL CONSIDERATIONS

Product Disposal
- On site disposal of the concentrated product is not acceptable.
- Ideally, the product should be used for its intended purpose. If there is a need to dispose of the product, approach local authorities who hold periodic collections of unwanted chemicals (ChemClear®).
- Do not use this container for any other purpose.
- Triple or preferably pressure rinse containers before disposal. Add rinsings to the spray tank.
- If recycling, replace cap and return clean containers to recycler or designated collection point.
- If not recycling, puncture or shred and bury containers in local authority landfill.
- If no landfill is available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots.
- drumMUSTER is the national program for the collection and recycling of empty, cleaned, non returnable crop production and on-farm animal health chemical containers. If the label on your container carries the drumMUSTER symbol, triple rinse the container, ring your local Council, and offer the container for collection in the program.
- Returnable containers: empty contents fully into application equipment. Replace cap, close all valves and return to the point of supply for refill or storage.

14. TRANSPORT INFORMATION

Storage and Transport
- Considered non dangerous for road and rail transport (in packaging, including IBCs not greater than 3000 Lt each) by the Australian Code for the Transport of Dangerous Goods by Road and Rail. Ref: ADG7; SP No. AU01.
- For bulk shipments as Class 9, use UN 3082, HazChem code 22.

UN Number (Sea Transport)
- 3082

IMO Class/Packing Group
- Class 9

IMO Marine Pollutant
- Marine Pollutant

IMO Proper Shipping Name
- ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains mancozeb)

15. REGULATORY INFORMATION

Poisons Schedule
- S5

Packaging & Labelling
- CAUTION
- KEEP OUT OF REACH OF CHILDREN
- READ SAFETY DIRECTIONS BEFORE OPENING OR USING
- Harmful, Irritant

16. OTHER INFORMATION

This product is registered with the Australian Pesticides and Veterinary Medicines Authority (APVMA). APVMA product number: 49487.
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Classified as hazardous

Date of preparation or last revision of MSDS
Revised 29/02/2016.
This MSDS replaces document dated February 2011.

Contact Person/Point
Normal Hours: Mrs Kathleen Marsh   Phone: +61 3 9282 1000
After Hours:  Shift Supervisor   Phone: 1800 033 498

Revisions
The MSDS was reviewed. Minor changes were made to the information.

Highlighted
This product will be reviewed under GHS criteria before the end of 2016.

Other Information
© Registered trademark of Cerexagri

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