1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: DIMETHOATE Systemic Insecticide

Product Code: 1070

Product Type: Group 1B Insecticide

Company Name: NUFARM AUSTRALIA LIMITED. (ABN 80 004 377 780)

Address: 103-105 Pipe Road Laverton North
Victoria 3026 Australia

Emergency Tel.: 1800 033 498 (24hr Australia)

Telephone/Fax Number: Tel: +61 3 9282-1000
Fax: +61 3 9282-1001

Recommended Use: For the control of a wide range of pests on fruit, vegetables, pastures, cotton, lucerne, peanuts and ornamentals as per the Directions for Use table.

Other Information: This MSDS describes, to the best of our knowledge, the properties of the concentrated product. The physical properties and some of the assessments do not apply to the properties of the product once it has been diluted for application. Acute health effects of the diluted product are likely to be much less severe.

2. HAZARDS IDENTIFICATION

Hazard Classification: Classified as hazardous

Risk Phrase(s): R10 Flammable;
R20/21/22 Harmful by inhalation, in contact with skin and if swallowed;
R65 Harmful: may cause lung damage if swallowed;
R66 Repeated exposure may cause skin dryness and cracking;
R67 Vapours may cause drowsiness and dizziness

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 S6

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Characterization</th>
<th>Name</th>
<th>CAS</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingredients</td>
<td>Dimethoate</td>
<td>60-51-5</td>
<td>400 g/L</td>
</tr>
<tr>
<td></td>
<td>Liquid</td>
<td>64742-94-5</td>
<td>255 g/L</td>
</tr>
<tr>
<td></td>
<td>Hydrocarbons</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cyclohexanone</td>
<td>108-94-1</td>
<td>30-60 %</td>
</tr>
<tr>
<td>Other ingredients (considered non-hazardous)</td>
<td></td>
<td></td>
<td>Balance</td>
</tr>
</tbody>
</table>

Substance Chemical Family: Organophosphate

4. FIRST AID MEASURES

Inhalation: Remove affected person to fresh air until recovered.
Obtain medical assistance.

Ingestion: Rinse mouth thoroughly with water.
Give a glass of water.
Seek medical advice immediately.
If swallowed do NOT induce vomiting; seek medical advice immediately and show
Material Safety Data Sheet

Infosafe No™ NU011  Issue Date: May 2010  ISSUED by NUFARM

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Classified as hazardous

this container or label or contact the Poisons Information Centre on 13 11 26 (Aust). Make every effort to prevent vomit from entering the lungs by careful placement of the patient.

The above first aid instructions are mandated by the Commonwealth Department of Health and Ageing via the National Drugs and Poisons Schedule. These instructions are suitable for ingestion of spray solution and small amounts of concentrate; however, if SUBSTANTIAL AMOUNTS of the concentrate have been swallowed (more than about one tablespoon) AND if medical assistance is more than 30 minutes away, the induction of vomiting should be CONSIDERED, preferably based on MEDICAL ADVICE if a physician can be contacted by phone. All care must be taken to prevent vomit from being inhaled. Do not give anything by mouth to a semi-conscious or unconscious person.

Skin
Remove contaminated clothing and wash skin thoroughly with soap and water.
Obtain medical advice immediately.

Eye
If in eyes, hold eyelids open and wash with copious amounts of water for at least 15 minutes.
Seek medical advice.

First Aid Facilities
If poisoning occurs, contact a doctor or the Poisons Information Centre (Australia) on 13 11 26.

Advice to Doctor
An anticholinesterase compound.
If the material is dissolved in solvents, e.g., petroleum solvents, vomiting may cause pulmonary aspiration. Instead, the stomach should be emptied as soon as possible by careful gastric lavage (using a cuffed endotracheal tube already in place). Artificial respiration should be started at the first sign of respiratory failure. Cautious administration of fluids is advised, as well as general supportive and symptomatic pharmacological treatment and absolute rest. As early as possible, administer 2 mg of atropine sulfate i.v. and 1000-2000 mg of pralidoxime chloride or 250 mg of obidoxime chloride (adult dose) i.v. to patients suffering from severe respiratory difficulties, convulsions, and unconsciousness. Repeated doses of 2 mg of atropine sulfate should be given, as required, based on the respiration, blood pressure, pulse frequency, salivation, and convulsion conditions. The dose and the frequency of atropine varies with each patient, but the patient should remain fully atropinised (signs include dilated pupils, dry mouth, skin flushing). Diazepam should be given in all but the mildest cases in doses of 10 mg, s.c. or i.v., which may be repeated as required. For children, the doses are 0.04-0.08 mg of atropine/kg body weight, 250 mg of pralidoxime chloride per child, or 4-8 mg of obidoxime chloride/kg body weight. Morphine, barbiturates, phenothiazine derivatives, tranquillizers, and all kinds of central stimulants are contraindicated.

5. FIRE FIGHTING MEASURES
Suitable Extinguishing Media
Water fog, foam, carbon dioxide or dry chemical.

Hazardous from Combustion
If involved in a fire, it will emit dimethyl sulphide, methyl mercaptans and possibly phosphorus pentoxide.

Special Protective Equipment for firefighters
Breathable air apparatus may have to be worn if material is involved in fires especially in confined spaces.

Hazchem Code
2W

Emergency Action in case of Fire
If exposed to fire, keep container cool by spraying with water.

STOP FIRE WATER FROM ENTERING DRAINS OR WATER BODIES.

6. ACCIDENTAL RELEASE MEASURES
Spills & Disposal
Contain spill and absorb with clay, sand, soil or proprietary absorbent (such as vermiculite). Collect spilled material and waste in sealable open-top type containers for disposal. Do NOT flush with water.

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

Conditions for Safe Storage
- Store in the closed, original container in a dry, cool well ventilated area out of direct sunlight.
- Store in a locked enclosure.
- Keep container tightly sealed and do not store with seed, fertilisers or foodstuffs.
- Protect from direct sunlight and temperatures above 40°C.
- If storing for more than 2-3 months, avoid temperatures above 30°C.

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards
- No biological exposure limit allocated.
- No exposure standard for this product has been set, however, an exposure standard has been set for cyclohexanone at 100 mg/m³.
- The manufacturer of the solvent has recommended an occupational exposure limit of 100 mg/m³; 17 ppm TWA, as total hydrocarbon.

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

Respiratory Protection
- Do not inhale spray mist.

Personal Protective Equipment
- When opening the container, preparing spray and using the prepared spray wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves, goggles, impervious footwear and half piece respirator with combined dust and gas cartridge (canister).
- Class A filter cartridge.

Hygiene Measures
- After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.
- After each day's use, wash contaminated clothing and safety equipment.

Requirements Concerning Special Training
- Check State or Territory regulations that require people who use pesticides in their job or business to have training in the application of the materials.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form
- Liquid

Appearance
- Amber liquid

Odour
- Characteristic odour

Solubility in Water
- Disperses in water. Not soluble.

Specific Gravity
- 1.057

Vapour Pressure
- 0.25 mPa @ 25°C for dimethoate

Surface Tension
- 9.5 mN/m

Flash Point
- 52°C

Flammability
- Flammable Liquid.

Flammable Limits - Lower
- 1.3% for cyclohexanone

Flammable Limits - Upper
- 9.4% for cyclohexanone

Kinematic Viscosity
- 4.7 x 10⁻⁶ m²/sec

10. STABILITY AND REACTIVITY

Chemical Stability
- Stable under normal conditions.
- Hydrolyses at pH >7.

Incompatible Materials
- Avoid contact of the concentrate with strong alkalis and alkaline materials such as lime.
Hazardous Reactions
Keep away from strong oxidising agents.

Hazardous Polymerization
Hazardous polymerisation is not possible.

11. TOXICOLOGICAL INFORMATION

Toxicology Information
No harmful effects are expected if the precautions on the label and this MSDS are followed.

Inhalation
Breathing vapour can result in headaches, dizziness and possible nausea. Breathing in high concentrations of vapour can produce central nervous system depression, which can lead to loss of coordination, impaired judgement and if exposure is prolonged, unconsciousness.

Ingestion
The concentrate is harmful if swallowed. Symptoms of overexposure to large quantities of product may include: nausea, vomiting, abdominal pains, diarrhea, pinpoint pupils, blurred vision, profuse sweating, salivations and muscle twitching.

Skin
Prolonged contact with the concentrate may result in absorption of dimethoate in harmful amounts. Prolonged contact with the concentrate can cause defatting of the skin and may result in dermatitis.

Eye
The concentrate may cause irritation of the eyes.

Chronic Effects
Regular exposure may result in lowering of cholinesterase activity which will recover within a few days after exposure ceases. Regular exposure may result in effects on the liver and blood.

Acute Toxicity - Oral
LD50 (rat) 250 - 325 mg/kg for dimethoate

Acute Toxicity - Dermal
LD50 (rat) >2000 mg/kg for dimethoate

Acute Toxicity - Inhalation
LC50 (rat) (4hr) >1.6 mg/l for dimethoate

Skin Irritation
Not a skin irritant.

Skin Sensitisation
Product is not a skin sensitiser.

Other Information
The Australian Acceptable Daily Intake (ADI) for dimethoate for a human is 0.02 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 0.2 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 2008).

12. ECOLOGICAL INFORMATION

Persistence / Degradability
Not readily biodegradable.

Other Precautions
Do not spray in high winds. Do not contaminate dams, waterways or sewers with this product.

Environ. Protection
Marine pollutant.

Acute Toxicity - Fish
The following is data for the active ingredient, dimethoate. LC50 (96hr) for bluegill sunfish is 6 mg/l.

Acute Toxicity - Daphnia
LC50 (96hr) for rainbow trout is 6.2 mg/l.

Acute Toxicity - Other Organisms
EC50 (48hr) is (for dimethoate) 3.3 mg/l.

The following data is for the active ingredient, dimethoate. Moderately toxic to birds.

LD50 for mallard ducks is 41.7 mg/kg

Bees: Toxic to bees. LD50 0.17 µg/bee.

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®).
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Classified as hazardous

Container Disposal
Do not use this container for any other purpose.
Triple rinse containers, add rinsate to the spray tank, then offer the container for recycling/reconditioning, or puncture top, sides and bottom and dispose of in landfill in accordance with local regulations.
Returnable containers: empty contents fully into application equipment.
Replace cap, close all valves and return to the point of supply for refill or storage.
If recycling, replace cap and return clean containers to recycler or designated collection point.
If not recycling, puncture or shred and dispose of in a landfill in accordance with local regulations.
Returnable containers: empty contents fully into application equipment.
Replace cap, close all valves and return to the point of supply for refill or storage.
If recycling, replace cap and return clean containers to recycler or designated collection point.
If not recycling, puncture or shred and dispose of in landfill in accordance with local regulations.

14. TRANSPORT INFORMATION

Transport Information
It is good practice to separate this product from food, food related materials, animal feedstuffs, seed or fertilisers during transport.

U.N. Number
3017

Proper Shipping Name
ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE - (contains Dimethoate and cyclohexanone)

DG Class
6.1

Sub.Risk
3

Hazchem Code
2W

Packaging Method
3.8.6

Packing Group
III

Storage and Transport
Considered dangerous for transport by the Australian Code for the Transport of Dangerous Goods by Road and Rail.

EPG Number
6C3

IERG Number
17

IMO Marine Pollutant
Marine Pollutant

15. REGULATORY INFORMATION

Poisons Schedule
S6

National and or International Regulatory Information
There is a legislative requirement in most States in Australia for workers to be medically monitored when using organophosphates, by:- 'estimation of red cell and plasma cholinesterase activity towards the end of the day on which organophosphates have been used'.
Ref: Control of Workplace Hazardous Substances, NOHSC:1005.

Packaging & Labelling
KEEP OUT OF REACH OF CHILDREN
READ SAFETY DIRECTIONS BEFORE OPENING OR USING

Hazard Category
Harmful

AICS (Australia)
All of the components in this product are listed on the Australian Inventory of Chemical Substances.

16. OTHER INFORMATION

Date of preparation or last revision of MSDS
Revised 26/05/2010

Contact
Normal Hours: Mr Volker Maier Phone: +61 3 9282 1000
After Hours: Shift Supervisor Phone: 1800 033 498

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

Highlighted
References to Atropine have been removed.

...End Of MSDS...
Infosafe No™ NU011 Issue Date: May 2010
ISSUED by NUFARM

Product Name DIMETHOATE Systemic Insecticide

Classified as hazardous

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