# Material Safety Data Sheet



Infosafe No. NU024 Issue Date : August 2005 ISSUED by NUFARM

Product Name : **LEPIDEX 500 Insecticide**

Classified as hazardous according to criteria of NOHSC

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKIN

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| **Product Name** | LEPIDEX 500 Insecticide |
| **Product Code** | 1246 |
| **Product Use** | For the control of a wide range of insects in various situations as per the Directions for Use table on the label. |
| **Company Name** | NUFARM AUSTRALIA LIMITED. (ABN 80 004 377 780) |
| **Address** | 103-105 Pipe Road Laverton North<br>Victoria 3026 Australia |
| **Emergency Tel.** | 24hr 1800 033 498 |
| **Telephone Number/Fax** | Tel: (03) 9282-1000 Fax: (03) 9282-1001 |
| **Product Type** | Group 1B Insecticide |
| **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. COMPOSITION/INFORMATION ON INGREDIENTS

| **Ingredients** | **Name** | **CAS** | **Proportion** |
|---|---|---|---|
| | Trichlorfon | 52-68-6 | 500 g/L |
| | 1-methoxy-2-propanol | 107-98-2 | 30-60 % |
| | N-methylpyrrolidone | 872-50-4 | 10-30 % |
| **Substance Chemical Family** | Organophosphate | | |

## 3. HAZARDS IDENTIFICATION

Flammable.
Harmful if swallowed.
May cause sensitization by skin contact.

**Other Information** Poisons Schedule S6

## 4. FIRST AID MEASURES

**Inhalation**

Obtain medical advice.
Remove patient to fresh air and, if required, give one atropine tablet every five minutes until dryness of the mouth occurs.

**Ingestion**

Rinse mouth thoroughly with water.
If product has been swallowed and symptoms are evident and medical assistance is not immediately available, give one atropine tablet (0.6 mg) every five minutes until dryness of the mouth occurs. Preferably, carry out treatment under the direction of medical advice obtained by phone.
If swallowed do NOT induce vomiting; seek medical advice immediately and show 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 Aged Care 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 1 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**

If poisoned by skin absorption, remove contaminated clothing, wash skin thoroughly with soap and water and give one atropine tablet every five minutes until dryness of the mouth occurs.
Obtain medical advice immediately.

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| **Eye** | If in eyes, hold eyelids open and wash with copious amounts of water for at least 15 minutes.<br>Seek medical advice. |
| **First Aid Facilities** | If poisoning occurs, contact a doctor or Poisons Information Centre on 13 11 26 (Australia).<br>If trichlorfon is regularly used, it may be wise to keep a supply of atropine tablets (0.6 mg) (check State Regulations). |
| **Advice to Doctor** | The degradation product dichlorvos, usually formed in vivo, is a cholinesterase inhibitor.<br>An anticholinesterase compound.<br>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

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| **Extinguishing Media** | Water fog, foam, carbon dioxide or dry chemical. |
| **Hazardous Combustion Products** | If involved in a fire, it will emit carbon monoxide, phosgene and possibly oxides of phosphorous. |
| **Emergency Action in case of Fire** | If exposed to fire, keep container cool by spraying with water. |
| **Protective Equipment** | Breathable air apparatus may have to be worn if material is involved in fires especially in confined spaces. |

## 6. ACCIDENTAL RELEASE MEASURES

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| **Spills & Disposal** | Contain spill and absorb with clay, sand, soil or proprietary absorbent (such as vermiculite).<br>Collect spilled material and waste in sealable open-top type containers for disposal.<br>Dispose of at a landfill in accordance with local regulations.<br>If possible, ring 1800 033 498 for specialist advice. |
| **Environmental Precautions** | Contaminated earth (after a spill) can be treated with lime to hasten decomposition of the active ingredient.<br>Trichlorfon is rapidly hydrolysed under alkaline conditions (<30 minutes at pH9) to dichlorvos which, in turn, is further hydrolysed, albeit more slowly (half life of 2 days at pH9).<br>NOHSC has set an exposure standard for dichlorvos of (TWA) 0.9 mg/m3.<br>'SK' notice - absorption through the skin may be a significant source of exposure. The exposure standard is invalidated if such contact should occur. |
| **Clean-up Methods - Large Spillages** | Place damaged containers in recovery bins (if available) and return to manufacturer. |

## 7. HANDLING AND STORAGE

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| **Storage** | Store in the closed, original container in a dry, well ventilated area out of direct sunlight.<br>Keep container tightly sealed and do not store with seed, fertilisers or foodstuffs. |
| **Other Information** | Always read the label and any attached leaflet before use. |

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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| **National Exposure Standards** | No biological exposure limit allocated.<br>NOHSC has set the following exposure standard for 1-methoxy-2-propanol : TLV (TWA) 369 mg/m3, STEL 553 mg/m3.<br>No exposure standards have been set for this product. |
| **Other Exposure Information** | DFG (Germany) has set the following exposure standards for n-methylpyrrolidone MAK TWA 80 mg/m3; PEAK -.<br>'SK' notice - absorption through the skin may be a significant source of exposure. The exposure standard is invalidated if such contact should occur. |
| **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). |
| **Eng. Controls** | Handle in well ventilated areas, generally natural ventilation is adequate. |
| **Hygiene Measures** | After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.<br>After each day's use, wash contaminated clothing and safety equipment. |
| **Requirements Concerning Special Training** | NSW regulations require that people who use pesticides in their job or business must have training in the application of the materials. By 1st September, 2005 all users must have received such training. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

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| **Appearance** | Clear, colourless solution. |
| **Melting Point** | 75 - 84°C (for trichlorfon) |
| **Boiling Point** | Not established, but > 120°C. |
| **Solubility in Water** | Soluble in water. |
| **Specific Gravity (H2O=1)** | 1.150 |
| **Vapour Pressure** | 0.21 mPa @ 20°C (for trichlorfon) |
| **Vapour Density (Air=1)** | >1 |
| **Volatile Component** | 50% |
| **Flash Point** | 37°C (PMCC - AS 2104) |
| **Flammability** | Flammable Liquid. |
| **Flammable Limits LEL** | Not known for this product mix. |

## 10. STABILITY AND REACTIVITY

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| **Hazardous Polymerization** | Hazardous polymerisation is not possible. |
| **Materials to Avoid** | Avoid contact of the concentrate with strong alkalis and alkaline materials such as lime.<br>Avoid contact of the concentrate with strong acids. |
| **Hazardous Decomposition Products** | Will decompose above pH 5.5 to form dichlorvos - a cholinesterase inhibitor. |
| **Hazardous Reaction** | Keep away from strong oxidising agents. |

## 11. TOXICOLOGICAL INFORMATION

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| **Inhalation** | The components of the product are of low volatility and no adverse effects are expected from handling the concentrate.<br>A moderate hazard exists from inhalation of spray and care should be taken to avoid inhalation of spray mists. |
| **Ingestion** | The concentrate is harmful if swallowed.<br>Amounts swallowed incidental to normal handling procedures and use are not expected to cause injury. |
| **Skin** | Prolonged contact with the concentrate may result in absorption of trichlorfon in harmful amounts.<br>Prolonged contact with the concentrate can cause defatting of the skin and may result in dermatitis.<br>May cause sensitisation by prolonged skin contact. |
| **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.<br>Symptoms of over-exposure are exhaustion, headache , weakness, confusion, vomiting, abdominal pain, excessive sweating and salivation.<br>In severe case of poisoning, muscle spasms, unconsciousness, convulsions may develop and extend to respiratory failure. |
| **Acute Toxicity - Oral** | LD50 (rat) 250 - 630 mg/kg for trichlorfon<br>LD50 (mouse) 600 - 800 mg/kg for trichlorfon |
| **Acute Toxicity - Dermal** | LD50 (rat) >5000 mg/kg for trichlorfon |
| **Acute Toxicity - Inhalation** | LC50 (rat) (4hr) 1.3 mg/l for trichlorfon |
| **Skin Sensitisation** | Prolonged and repeated skin contact may result in skin sensitisation. |
| **Human Effects** | The major effect of the product when absorbed in moderate doses is cholinesterase inhibition. This effect is due to dichlorvos, which rapidly forms from the compound in the body.<br>Trichlorfon has been used therapeutically for the treatment of parasitic worms in humans.<br>In animal studies Trichlorfon was shown to be a sensitiser but no cases of sensitisation resulting from occupational exposure have been reported after many years of use. |
| **Other Information** | The Australian Acceptable Daily Intake (ADI) for trichlorfon for a human is 0.002 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, 'ADI List', TGA, August 2003). |

## 12. ECOLOGICAL INFORMATION

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| **Known Harmful Effects on the Environment** | The product is a marine pollutant for sea transport. |
| **Other Precautions** | Do not contaminate dams, waterways or sewers with this product. |
| **Environ. Protection** | Spray drift can cause damage, read the label for more information. |
| **Mobility** | Rapid degradation in soil prevents significant downward movement under normal conditions. |
| **Acute Toxicity - Fish** | The following is data for the active ingredient, trichlorfon.<br>Toxic to fish. LC50 (96hr) for rainbow trout is 0.7 mg/l.<br>LC50 (96 hr) for golden orfe is 0.52 mg/l. |
| **Acute Toxicity - Daphnia** | LC50 (48 hr) for daphnia is 0.00096 mg/l for trichlorfon. |
| **Acute Toxicity - Other Organisms** | Moderately toxic to birds.<br>LD50 for mallard duck is 36.8 mg/kg<br>LD50 for bobwhite quail is 22.4 mg/kg<br>Moderately toxic to bees. |

## 13. DISPOSAL CONSIDERATIONS

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| **Product Disposal** | On site disposal of the concentrated product is not acceptable.<br>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 (ChemCollect). |
| **Container Disposal** | Do not use this container for any other purpose.<br>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.<br>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.<br>If not recycling, puncture or shred and bury containers in local authority landfill.<br>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.<br>Empty containers and product should not be burnt. |

## 14. TRANSPORT INFORMATION

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| | 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 Trichlorfon) |
| **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 |

## 15. REGULATORY INFORMATION

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| **Risk Phrase** | R10 Flammable.<br>R22 Harmful if swallowed.<br>R43 May cause sensitization by skin contact. |
| **Safety Phrase** | S13 Keep away from food,drink and animal feeding stuffs.<br>S2 Keep out of reach of children.<br>S24 Avoid contact with skin.<br>S37 Wear suitable gloves. |
| **Poisons Schedule** | S6 |
| **Packaging & Labelling** | POISON<br>KEEP OUT OF REACH OF CHILDREN<br>READ SAFETY DIRECTIONS BEFORE OPENING OR USING |
| **Hazard Category** | Harmful,Irritant |
| **AICS (Australia)** | All of the components in this product are listed on the Australian Inventory of Chemical Substances. |
| **National Legislation** | 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 acivity towards the end of the day on which organophosphates have been used'.<br>Ref: Control of Workplace Hazardous Substances, NOHSC:1005. |

## 16. OTHER INFORMATION

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Product Name : **LEPIDEX 500 Insecticide**

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**Contact Person/Point** Normal Hours: Mr Volker Maier Phone: (03) 9282 1000
After Hours: Shift Supervisor Phone: 1800 033 498

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

...End Of MSDS...