



Material Safety Data Sheet

Page: 1 of 6

Infosafe No. NU00W Issue Date : May 2004 ISSUED by NUFARM

Product Name : **CHLORPYRIFOS 500EC Insecticide**

Classified as hazardous according to criteria of NOHSC

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

Product Name CHLORPYRIFOS 500EC Insecticide
Product Code 1030
Product Use For control of a wide range of insect pests on fruit, vegetables, oilseeds, cotton, cereals, pasture, turf and other situations as specified in the Directions for Use Table.
THIS PRODUCT IS TOO HAZARDOUS FOR USE BY HOUSEHOLDERS.
HOUSEHOLDERS MUST NOT USE THIS PRODUCT IN OR AROUND THE HOME.
Company Name NUFARM AUSTRALIA LIMITED. (ABN 80 004 377 780)
Address 103-105 Pipe Road Laverton North
Victoria 3026 Australia
Emergency Tel. 24hr 1800 033 498
Telephone/Telex Number 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
	Chlorpyrifos	2921-88-2	500 g/L
	Liquid Hydrocarbons	64742-94-5	480 g/L
	Other ingredients (considered non-hazardous)		Balance

Substance Chemical Family Organophosphate

3. HAZARDS IDENTIFICATION

Toxic in contact with skin and if swallowed.
Harmful: may cause lung damage if swallowed.

Other Information Poisons Schedule 6

4. FIRST AID MEASURES

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



Material Safety Data Sheet

Page: 2 of 6

Infosafe No. NU00W Issue Date : May 2004 ISSUED by NUFARM

Product Name : **CHLORPYRIFOS 500EC Insecticide**

Classified as hazardous according to criteria of NOHSC

- Ingestion** 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 one teaspoon) 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.
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.
- 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.
- 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 chlorpyrifos is regularly used, it may be wise to keep a supply of atropine tablets (0.6 mg) (check State Regulations).
If poisoning occurs, contact a doctor or Poisons Information Centre on 13 11 26 (Australia).
- 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

- Extinguishing Media** Water fog, foam, carbon dioxide or dry chemical.
- Hazardous** May emit toxic fumes of hydrogen chloride or phosgene if involved in fires or
- Combustion Products** exposed to extreme heat.



Material Safety Data Sheet

Page: 3 of 6

Infosafe No. NU00W Issue Date: May 2004 ISSUED by NUFARM

Product Name : **CHLORPYRIFOS 500EC Insecticide**

Classified as hazardous according to criteria of NOHSC

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.

Other Information Hazchem code 2W .
Prevent 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.
Dispose of at a landfill in accordance with local regulations.
If possible, ring 1800 033 498 for specialist advice.

Personal Protection For appropriate personal protective equipment (PPE), refer Section 8.

Environmental Precautions Prevent from entering drains, waterways or sewers.

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

7. HANDLING AND STORAGE

Storage Store in the closed, original container in a cool, well ventilated area.
Do not store for prolonged periods in direct sunlight.
Keep container tightly sealed and do not store with seed, fertilisers or foodstuffs.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Exposure Limits No biological exposure limit allocated.
NOHSC has set the following exposure standard for chlorpyrifos : TLV (TWA) 0.2 mg/m³, STEL -.
'SK' notice - absorption through the skin may be a significant source of exposure. The exposure standard is invalidated if such contact should occur.
The manufacturer of the solvent has recommended an occupational exposure limit of 100 mg/m³; 17ppm TWA, as total hydrocarbon.

Respiratory Protection If exposure to vapour or spray is expected, a half face respirator with cartridge type A is recommended.

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 and face shield or goggles.
Wear impervious footwear such as plastic or rubber boots.

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.
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

Appearance Straw coloured liquid.
Melting Point <0°C
Solubility in Water Forms an emulsion in water.
Boiling Point >150°C

Infosafe No.	NU00W	Issue Date : May 2004	ISSUED by NUFARM
--------------	-------	-----------------------	------------------

Product Name : **CHLORPYRIFOS 500EC Insecticide**

Classified as hazardous according to criteria of NOHSC

Specific Gravity (H₂O=1)	1.17-1.18
pH Value	neutral
Vapour Pressure	2.7 mPa @ 25°C for chlorpyrifos
Vapour Density (Air=1)	>1
Volatile Component	40 - 50%
Surface Tension	26.6 mN/M
Flash Point	68°C (PMCC - AS2106)
Flammability	Combustible liquid. The spray mixture is not combustible.
Flammable Limits LEL	0.6 v/v for solvent
Flammable Limits UEL	7.0% v/v for solvent
Kinematic Viscosity	4.56 x 10 ⁻⁶ m ² /sec

10. STABILITY AND REACTIVITY

Hazardous Polymerization	Hazardous polymerisation is not possible.
Materials to Avoid	Avoid contact of the concentrate with strong alkalis and alkaline materials such as lime. Avoid contact of the concentrate with strong acids.
Hazardous Reaction	Keep away from strong oxidising agents, may react violently.

11. TOXICOLOGICAL INFORMATION

Toxicology Information	No harmful effects are expected if the precautions on the label and this MSDS are followed.
Inhalation	When applying the product as a spray avoid breathing in spray mists. Breathing in high concentrations can produce central nervous system depression, which can lead to loss of coordination, impaired judgement and if exposure is prolonged, unconsciousness.
Ingestion	Possible symptoms of exposure include: nausea, vomiting and central nervous system depression. If aspirated into the lung, e.g. from vomiting, the presence of solvent may result in chemical pneumonitis or pulmonary oedema.
Skin	The rate of absorption for chlorpyrifos is low hence, the product is moderately toxic by this route. 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.
Reproductive Toxicity	Data indicates no reproductive effects. Data indicates no teratogenic effects.
Carcinogenicity	Data indicates no carcinogenic effects.
Acute Toxicity - Oral	LD50 (male rat) 345 mg/kg for a similar formulation LD50 (female rat) 230 mg/kg for a similar formulation LD50 (rat) 135 - 163 mg/kg for chlorpyrifos LD50 (guinea pig) 504 mg/kg for chlorpyrifos LD50 (rabbit) 1000 - 2000 mg/kg for chlorpyrifos

Infosafe No.	NU00W	Issue Date : May 2004	ISSUED by NUFARM
--------------	-------	-----------------------	------------------

Product Name : **CHLORPYRIFOS 500EC Insecticide**

Classified as hazardous according to criteria of NOHSC

Acute Toxicity - Dermal	LD50 (rat) 409 mg/kg for a similar formulation LD50 (rat) >2000 mg/kg for chlorpyrifos LD50 (rabbit) >5000 mg/kg for chlorpyrifos
Acute Toxicity - Inhalation	LC50 (rat) (4hr) >0.2 mg/l for chlorpyrifos
Skin Sensitisation	Product is not a skin sensitiser.
Other Information	The Australian Acceptable Daily Intake (ADI) for chlorpyrifos for a human is 0.003 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 0.03 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

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 or the containers which have held this product.
Persistence / Degradability	Average field half life of chlorpyrifos is 33 - 56 days.
Acute Toxicity - Fish	The following is data for the active ingredient, chlorpyrifos. LC50 (96 hr) for bluegill sunfish is 0.002 - 0.010 mg/l. LC50 (96 hr) for rainbow trout is 0.007 - 0.051 mg/l.
Acute Toxicity - Daphnia	LC50 (48 hr) for chlorpyrifos is 0.0017 mg/l.
Acute Toxicity - Other Organisms	Moderately toxic to birds. LD50 for mallard ducks is 490 mg/kg Bees: Toxic to bees. LD50 is 0.07 µg/bee.

13. DISPOSAL CONSIDERATIONS

Product Disposal	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. 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. 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.

14. TRANSPORT INFORMATION

U.N. Number	3018
Proper Shipping Name	ORGANOPHOSPHORUS PESTICIDES, LIQUID, TOXIC, N.O.S. - (CHLORPYRIFOS)
DG Class	6.1
Hazchem Code	2W
Packaging Method	3.8.6
Packing Group	III

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



Material Safety Data Sheet

Page: 6 of 6

Infosafe No. NU00W Issue Date : May 2004 ISSUED by NUFARM

Product Name : **CHLORPYRIFOS 500EC Insecticide**

Classified as hazardous according to criteria of NOHSC

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

EPG Number 6A3

IERG Number 35

15. REGULATORY INFORMATION

Risk Phrase R24/25 Toxic in contact with skin and if swallowed.
R65 Harmful: may cause lung damage if swallowed.

Safety Phrase S28 After contact with skin, wash immediately with plenty of
S36/37 Wear suitable protective clothing and gloves.
S45 In case of accident or if you feel unwell seek medical advice immediately
S62 If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.

Poisons Schedule S6

Hazard Category Toxic

Packaging & Labelling POISON

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

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 activity towards the end of the day on which organophosphates have been used'.
Ref: Control of Workplace Hazardous Substances, NOHSC:1005.

16. OTHER INFORMATION

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. The MSDS is now issued in a 16 header format.
...End Of MSDS...