

# Cardinal™



**For control of various insect pests in  
certain agricultural and horticultural crops**

**GROUP**

**1**

**INSECTICIDE**

*Contains 500 g/litre Chlorpyrifos in the form of an emulsifiable concentrate.*



**AGRISOURCE**  
PRODUCTS FOR AGRICULTURE

**COMBUSTIBLE  
LIQUID  
TOXIC  
WARNING  
ECOTOXIC**

Keep out of the reach  
of children

Net Contents

**10 Litres**



# READ LABEL COMPLETELY BEFORE USE

## GENERAL INFORMATION

Cardinal is an organophosphate insecticide that works directly on insect pests through contact and vapour action. It also works as a stomach poison when ingested by insects. Cardinal also remains active in soil for several days.

## IMPORTANT - RESISTANCE MANAGEMENT

Cardinal contains the **GROUP 1B** insecticide chlorpyrifos. Do not use another product containing an insecticide in the same group in conjunction with Cardinal. To minimize this resistance risk use strictly in accordance with label instructions, avoid unnecessary spraying, maintain good cultural practices. Alternate with an insecticide with a different mode of action.

**It is an offence to use this product on animals.**

## DIRECTIONS FOR USE

**MIXING** Invert or roll container several times before opening or stir well before using to ensure concentrate is evenly mixed. Partly fill the spray tank and start agitation. Add the required amount of Cardinal complete filling the spray tank and maintain agitation until spraying is complete.

**COMPATIBILITY** Cardinal is compatible with most commonly used insecticides and fungicides. It should not be mixed with highly alkaline materials such as Bordeaux mixture or lime sulphur.

**MAXIMUM APPLICATION RATE** Do not apply more than 3 litres of Cardinal per hectare.

**RAINFALL** The effectiveness of Cardinal may be reduced if rainfall occurs within 3 hours of application.

**RECOMMENDATIONS** Unless otherwise indicated in the Table, rates suggested are for high volume spraying to the point of runoff. For concentrate spraying, adjust dilution rates accordingly.

**It is an offence for users of this product to cause residues exceeding the relevant MRL in the Food Notice: Maximum Residue Levels for Agricultural Compounds**

## WITHHOLDING PERIODS

Maize.....	Do not apply later than 14 days before harvest
Cereals for grain .....	Do not apply later than 8 weeks before harvest
Fodder crops, pasture .....	Do not apply later than 7 days before harvest
Onions .....	Do not apply later than 7 days before harvest
Squash .....	Do not apply later than 10 days before harvest

## CONDITIONS OF SUPPLY

All goods supplied by us are produced under rigid quality control procedures which assure the purchaser that at the time of sale they are physically suitable for use in the manner stated. However, to the extent permitted by law, buyers and/or users of the goods accept that neither the manufacturer, Agri Solutions Ltd as registrant, nor any other distributor have any liability or responsibility whatsoever for any loss, damage or injury whether in contract or tort, whether direct, indirect or consequential howsoever arising in connection with the supply of these goods.

Registered pursuant to the ACVM Act 1997 No. P9943  
See www.foodsafety.govt.nz for registration conditions

Approved pursuant to HSNQ Act 1996 No. HSR000224  
See www.epa.govt.nz for approval conditions

™ Cardinal is a trademark of Agri Solutions Ltd

**BATCH NO:**

**DATE OF  
MANUFACTURE:**

## REGISTRANT

Agri Solutions Ltd, Level 1,  
26 Crummer Road, Grey Lynn  
Auckland 1021

## DISTRIBUTOR

AgriSource (2000) Ltd, 45 Kitchener Road  
Pukekohe 2120  
09 237 0442 · www.agrisource.co.nz

APPLICATION RATES			
CROP	PEST	RATE	REMARKS
Lucerne	Aphids	300-450 mL in 100-200 L water	Apply as soon as aphids appear. Use the lower rate on short crops with little leaf, and the higher rate on tall crops. Do not spray plants in flower.
	Sitona weevil	600-800 mL in 100-200 L water	To control adults apply in mid-late May, after flights cease and before egg laying occurs. Use the high rate in dense stands and spray during a warm, calm day.
Maize	Army caterpillar, corn earworm	500 mL in 50-200 L water	Apply immediately damage is first seen and repeat if necessary 14-21 days later. For corn earworms, apply before caterpillars are observed and before cob penetration occurs.
	Cutworm	600 mL in 50-200 L water	Use in sufficient water for complete coverage of the seedlings and surrounding soil. Spray in the evening at first sign of damage.
Pasture	Army caterpillar	Ground application 400 mL in 100-200 L water Aerial application 400 mL in 50-100 L water	Apply when damage is first seen (usually associated with severe flood damage).
	Lucerne flea	200 mL in 50-200 L water	Apply in late autumn/early winter at first sign of clover damage.
	Porina caterpillar	1.25-1.7 L in 50-200 L water	Use the low rate against small caterpillars, before frosts occur. Closely graze pasture before spraying.
	Tasmanian grass grub	1.25-1.5 L in 100-200 L water	Apply to short dry pasture between April and June at first signs of pasture damage. Harrowing of dung patches is recommended prior to spraying, to expose the larvae. Use higher rates when population is large.
	Argentine stem weevil	1.25 L in 100-200 L of water	Apply as soon as eggs are found on the lower leaf sheath.
Cereals	Cereal, rose and grain aphid	300-400 mL in 100-200 L of water	Apply at first sign of infestation. Use the high rate when infestation pressure is high or the crop is dense.
Ryegrass/Cereals	Argentine stem weevil	1.25 L in 100-200 L of water	Apply as soon as eggs are present on the lower leaf sheath.
Brassicac and forage crops	Aphids	Ground application 300-400 mL in 100-200 L water Aerial application 300-400 mL in 50-100L water	Apply as necessary at the first sign of infestation.
	Nysius	1.25 L in 100-200 L of water	Apply to seedling crops as soon as damage is apparent or when nymphs can be seen feeding on seedlings.
	Springtails	200 mL in 50-200 L of water	Apply 1-2 days before crop emergence or as soon as damage is first noticed.
Onions	Onion thrips	1 L in 400-500 L of water The use of a non-ionic surfactant is recommended.	Apply when monitoring shows numbers exceed recommended action threshold level. Apply 3-4 applications at 10-14 day intervals, close intervals to 5-7 days during hot conditions. If further treatments are required, use an insecticide with a different mode of action.
Winter squash	Aphids, caterpillars	500 mL in approximately 200 L of water	Apply as a single application soon after emergence, at the first signs of insects or insect damage.
		Ground application 500 mL in 500 L of water Aerial application 500 mL in at least 50 L of water	As a pre-harvest clean up, apply only when flowering has finished and bees are not present in the crop.

## PCBU RESPONSIBILITIES

A PCBU with management or control of work using this substance must ensure that every worker who uses, handles, manufactures, or stores this hazardous substance (including hazardous waste) is, before the worker is allowed to carry out or supervise work involving those substances, provided with adequate information, training and instruction. This includes the use of personal protective equipment to be used to minimize risks to the health and safety of workers when carrying out work using this substance.

## QUALIFICATIONS REQUIRED FOR APPLICATION OF CLASS 9 SUBSTANCES

Anyone who mixes, loads, or applies this product, either by air or ground based methods, is required to be suitably qualified, or must receive guidance and, if required, assistance from a suitably qualified person.

## RECORD KEEPING

A PCBU with management or control of the substance must ensure that a written record is kept of each application of this substance. This record must include the product name, date and time of each application, amount of substance applied, location where the substance was applied, wind speed and direction and electronic data files indicating the application area (if applied by air), and details of measures taken to ensure no adverse effects beyond the boundary of the application area.



**ECOTOXICITY** Very toxic to aquatic life with long lasting effects. Do not apply onto or into water. Avoid contamination of any water supply with product or empty container.

Toxic to the soil environment. Very toxic to terrestrial vertebrates. Very toxic to terrestrial invertebrates. This substance is toxic to bees. Do not apply this product to any plant or tree likely to be visited by bees either: at the time of application; or immediately after application until spray has dried; or in areas where bees are foraging.

**DANGER** Toxic if swallowed or in contact with skin. Causes damage to organs through prolonged or repeated exposure.

**WARNING** Harmful if inhaled. Causes serious eye irritation. Suspected of damaging fertility or the unborn child.

**FLAMMABILITY WARNING** Combustible liquid

## HANDLING PRECAUTIONS - THIS PRODUCT IS RESTRICTED TO WORKPLACES ONLY.

Keep out of reach of children. Keep away from flames and hot surfaces. No smoking. Do not eat, drink or smoke while using. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe spray mist or vapours. Use personal protective equipment as required. Use only outdoors or in a well-ventilated area.

**Personal Protection:** When mixing, loading or applying, or entering an application area within the REI, wear appropriate full protective clothing such as chemical resistant boots with socks, a chemical resistant spray suit or coat and trousers (worn outside boots), elbow-length chemical resistant gloves, eye protection, and chemical resistant headgear for overhead exposures. A approved respirator with combination filter for vapour/particles should also be worn. Wash splashes of concentrate from skin immediately. Remove protective clothing and wash hands, arms and face with soap and water before meals and after work. Wash protective clothing daily after use.

**REI:** DO NOT allow entry into treated areas within 24 hours of application unless wearing personal protective equipment as prescribed in the personal protection section of this label.

**Notification: (For aerial applications only)** For wide-dispersive (aerial) application, the applicator must provide written notice of the proposed application to any person(s) likely to be directly affected by the application, including occupiers and owner of land, dwellings, buildings or property that is immediately abutting the application area. Notification must be given at least 2 working days before, but no more than 4 weeks before, each application of the product; and specify the following:

i. The location of the area the substance will be applied to. ii. The date and approximate duration of each application. iii. The steps to be taken by the notified parties to avoid exposure (e.g. closing windows and doors, moving laundry inside, staying inside, etc.). iv. The name of the organization(s) undertaking the application v. Contact details for the person in charge of the application (phone, email or postal address, including a contact number for immediate contact during application).

**Spray Drift Mitigation:** The person applying this substance must not cause adverse effects beyond the boundary of the treated property, and must also avoid adverse effects from spray drift occurring. Mitigation measures employed must be recorded as part of the application records.

**Equipment:** A PCBU with management or control of work using this substance must ensure that equipment used to handle this substance retains the substance, without leakage, at all of the temperatures and pressures at which the equipment is to be used; and dispenses or applies the substance, without leakage, at a rate and in a manner that the equipment is designed for. The PCBU must ensure that the equipment is accompanied by documentation that is readily available and readily understandable about the use and maintenance of the equipment.

**Storage: MUST BE SECURED IF LEFT UNATTENDED.** Store locked up in the original tightly closed container in a well-ventilated place. Store in accordance with current version of NZS 840S Management of Agrichemicals. Keep cool. In case of fire use water fog or fine spray for extinction. There are requirements when storing this product in a workplace, relating to labelling, safety data sheets, stationary container systems, separation distances, secondary containment, emergency response plans, and signage; and in a place other than a workplace, relating to stationary container systems, separation distances, emergency response plans, secondary containment, and signage. Secondary containment and an emergency response plan are required where greater than 100 L of this product are stored. Refer to the product SDS for further information. Do not store with Class 1, 2, 3, 4 or 5 substances or foodstuffs. Stores containing more than 500 L of this product require two fire extinguishers.

**Transport:** Do not carry packs greater than 1 L of this product on a passenger service vehicle.

**Shelf Life:** When stored appropriately this product should show no significant degradation for two years from the date of manufacture. Contact your supplier for further information about the use of any product that is older than this.

**Spillage:** Exclude all bystanders from the vicinity of the spill and prevent material from entering waterways or coming in contact with Class 1, 2, 3, 4 or 5 substances. Wear appropriate protective clothing as in the personal protection section of this label to clean up spills. Absorb spills with an inert material (such as vermiculite, earth, sand or synthetic absorbent substance) and place in waste containers Wash area with water and alkaline detergent. Then absorb any remaining liquid with further inert material. Dispose of the waste safely in an approved landfill.

**Product Disposal:** Dispose of this product only by using according to the label, or through an agricultural recovery service or at an approved landfill or other approved facility. **Container Disposal:** Triple rinse empty container and add rinseate to spray tank. Submit clean empty container to an agricultural recycler. Alternatively, burn in an appropriate incinerator if circumstances such as wind direction permit, or puncture and bury in a suitable landfill. Avoid contamination of any water supply with product or empty container.

**Bee Safety:** This product is toxic to bees. Do not apply this product to any plant or tree likely to be visited by bees either: at the time of application; or immediately after application until spray has dried; or in areas where bees are foraging.

**Safety Data Sheet:** Additional information is provided in the SDS available from your supplier.

**FIRST AID** For advice, or if you feel unwell or are exposed or concerned, contact the National Poisons Centre 0800 POISON (0800 764 766) or doctor immediately. IF SWALLOWED: Rinse mouth. Immediately call a POISON CENTRE or doctor for advice. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTRE or doctor if you feel unwell. IF ON SKIN: Immediately remove all contaminated clothing. Wash with plenty of soap and water. Call a POISON CENTRE or doctor if you feel unwell. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists get medical attention.

**EMERGENCY RESPONSE** In a transport emergency call 111, Police or Fire Brigade

# 24 HOUR EMERGENCY RESPONSE 0800 CHEMCALL (0800 243 622)