

GENEREX (AUST) PTY LTD

MATERIAL SAFETY DATA SHEET

I IDENTIFICATION

Product Name: Generex Chlorpyrifos 500 Insecticide
Shipping Name: ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC
Hazchem Code: 2X
UN No.: 3018
Dangerous Goods Class: 6.1
Sub Risk Class: None allocated
Packaging Group: III
Poison Schedule: S6
Uses: For the control of certain insect pests as specified in the Directions for Use booklet.

Physical appearance & Properties

Appearance: Pale yellow liquid
Boiling point: 183°C
Volatile materials: No specific data, expected to be low at 100°C
Flashpoint: 66°C (PMCC)
Specific gravity: 1.06- 1.08 g/mL
Solubility in water: Emulsifiable
Corrosiveness: Not corrosive
Vapour Pressure: 8 mm Hg at 20°C (solvent)
1.87 x 10⁻⁵ mm Hg at 25°C (chlorpyrifos)

Ingredients:

| Component | CAS No. | % |
|---------------------------------|-------------|---------|
| Chlorpyrifos | 002921-88-2 | 500 g/L |
| Solvent | 070693-06-0 | 485 g/L |
| Other non hazardous ingredients | | < 10g/L |

II HEALTH HAZARD DATA

Hazardous according to the criteria of the National Occupational Health & Safety Commission (NOHSC). Risk Phrases: R20- Harmful by inhalation, R22- Harmful if swallowed, R36- Irritating to eyes.

Health Effects:

The active ingredient in Chlorpyrifos 500 is the organophosphate compound chlorpyrifos. Excessive exposure may cause organophosphate type cholinesterase inhibition. Symptoms of excessive exposure to chlorpyrifos may include pallor, nausea, vomiting, diarrhea, abdominal cramps, headache, dizziness, eye pain, blurred vision, constriction or dilation of the eye pupils, tears, salivation, sweating, and confusion. The information provided below is from studies conducted using a formulation similar to Chlorpyrifos 500 Insecticide.

Acute Effects:

Swallowed: The oral LD₅₀ (rat) is 475 mg/kg (moderately toxic).

Eye: May cause temporary, moderate eye irritation.

Skin: The dermal LD₅₀ (rabbit) is above 4000 mg/kg (low toxicity). Chlorpyrifos is a mild irritant to rabbit skin.

Inhaled: The inhalation LC₅₀ (rat) is 4600 mg/m³ for 4 hours exposure (low toxicity) Excessive exposure to spray mist may be harmful. Prolonged exposure to solvent vapour from the concentrate may cause eye and respiratory tract irritation, headache, dizziness and narcotic effects.

Chronic Effects:

Possible chronic health effects from exposure to Chlorpyrifos 500 are based on studies using the active ingredient. Chlorpyrifos has been shown not to cause cancer and does not interfere with reproduction and does not cause genetic damage or birth defects. Chlorpyrifos is rapidly metabolised and excreted, and as a result, does not accumulate in the body. Repeated minor exposure may have a cumulative poisoning effect. The ingredients are not listed as carcinogenic in NOHSC's document "Exposure Standards for Atmospheric Contaminants in the Occupational Environment" (May 1995).

First Aid:

General: Consult The National Poisons Information Centre (Ph: 131126) or a Doctor in every case of suspected chemical poisoning. Never give fluids or induce vomiting if a patient is unconscious or convulsing regardless of cause of injury. If breathing difficulties occur seek medical attention immediately. Atropine tablets 0.6mg should be available in the area where this product is used, or in a nearby unlocked medicine cabinet.

Swallowed: If swallowed, give one atropine tablet every 5 minutes until dryness of the mouth occurs. Get to a doctor or hospital quickly.

Skin: If poisoned by skin absorption or through lungs, remove any contaminated clothing and wash skin thoroughly and give one atropine tablet every 5 minutes until dryness of the mouth occurs. If safety shower is available, use it promptly. Get to a doctor or hospital quickly.

Eyes: If in eyes, hold eyes open and flood with water for at least 15 minutes and see a doctor. Ensure irrigation under eyelids by occasionally lifting them. Do not try to remove contact lenses unless trained.

Inhalation: If affected, remove from contaminated area to fresh air. If breathing is difficult give oxygen and if necessary artificial respiration. Get to a doctor or hospital quickly.

Advice to Doctor: Chlorpyrifos is a cholinesterase inhibitor. Atropine by injection or ATROVENT/ipratropium by airway puff are the preferred antidotes. Oximes such as 2 PAMI protopam,

may be therapeutic if used early but only if used in conjunction with atropine. Chlorpyrifos 500 contains petroleum-like solvents. If lavage is performed endotracheal or oesophagoscopy control is advisable.

III PRECAUTIONS FOR USE

Personal protection and safety directions:

Product is poisonous if absorbed by skin contact, inhaled or swallowed. Repeated minor exposure may have a cumulative poisoning effect. Obtain an emergency supply of atropine tablets 0.6 mg. Will irritate the eyes and skin. Avoid contact with eyes and skin. Do not inhale vapour or spray mist. When opening the container, preparing the spray and using the prepared spray, wear cotton overalls buttoned to the neck and wrists, a washable hat, elbow-length PVC gloves and a face shield or goggles. If product on skin, immediately wash area with soap and water. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, face shield or goggles and contaminated clothing.

Exposure Standard:

A time weighted average (TWA) has been established for chlorpyrifos of 0.2mg/m³. The corresponding STEL level is "not set". The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The ADI (Acceptable Daily Intake) for chlorpyrifos is set at 0.003mg/kg/day. The corresponding NOEL (No-observable-effect-level) is set at 0.03mg/kg/day. Values taken from Australian ADI List, January, 2001.

Engineering Controls:

In industrial situations, concentrated values below the TWA value should be maintained. Values may be reduced by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. If you believe airborne concentrations of mists, dusts or vapours are high, you are advised to modify the process or environment to reduce the problem.

IV SAFE HANDLING INFORMATION

This product is classified as a C1 combustible product.

Storage & Transport:

This product is classed as UN3018, ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, Dangerous Goods Class 6.1 Toxic Substances, Packaging Group III, HAZCHEM 2X.

Class 6 Toxic Substances shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 3 (Flammable Liquids where the Flammable Liquid is nitromethane), 5.1 (Oxidising Agents where the Toxic Substances are Fire Risk Substances), 5.2 (Organic Peroxides where the Toxic Substances are Fire Risk Substances), 8 (Corrosive Substances where the Toxic Substances are cyanides and the Corrosives are acids), Foodstuffs and foodstuff empties. They may however be loaded in the same vehicle or packed in the same freight container with Classes, 2.1 (Flammable Gases), 2.2 (Non-Flammable, Non-Toxic Gases), 2.3 (Toxic Gases), 3 (Flammable liquids, except where the

flammable liquid is nitromethane), 4.1 (Flammable Solids), 4.2 (Spontaneously Combustible Substances), 4.3 (Dangerous When Wet Substances), 5.1 (Oxidising Agents except where the Toxic Substances are Fire Risk Substances), 5.2 (Organic Peroxides except where the Toxic Substances are Fire Risk Substances), 7 (Radioactive Substances), 8 (Corrosive Substances except where the Toxic Substances are cyanides and the Corrosives are acids), 9 (Miscellaneous Dangerous Goods).

This product is an S6 Poison. Observe all relevant regulations regarding sale, transport and storage of this class of product. Store in tightly closed original containers in a cool, well-ventilated area, out of direct sunlight. Do not store with food, feedstuffs, fertilisers or seeds.

Spills:

Wear protective equipment. Clear area of all unprotected personnel. Prevent entry of chemical or used/damaged containers into drains, streams or waterways.

Small Spill: Apply absorbent material such as earth, sand, clay granules or cat litter to the spill. Sweep up material when absorption is completed and contain in a refuse vessel for disposal. If spilled inside a building wash contaminated surfaces to deactivate the chlorpyrifos with a solution of bleach (sodium hypochlorite) prepared according to the bleach label instructions.

Large Spill: Place leaking containers into salvage drums. Apply absorbent material such as earth, sand or cat litter to the spill area. Form a barricade around spill and in front of drains or waterways in spill vicinity, using earth or other available material. Sweep up material and contain in a refuse vessel for disposal.

Disposal:

Contaminated material must be disposed of in accordance with all State and/or Local regulations. Triple or preferably pressure rinse containers before disposal and, if using with water, add rinsings to spray tank. If using as a ULV spray, do not add the rinsings to the spray tank as small amounts of water added to the concentrate can cause the solution to thicken. Dispose of these rinsings and rinse water resulting from cleaning spray equipment in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

For refillable containers, empty contents into application equipment. Close all valves and return to point of supply for refill or storage.

Fire/Explosion Hazard:

Flashpoint: 66°C (PMCC)

Flammability limits: Upper Value: 7.0%, Lower Value: 0.6% (solvent)

Extinguishing Media: Carbon dioxide, dry chemical, foam, water fog. Water fog or fine spray is the preferred medium for large fires.

Special Fire Fighting procedures: When fighting fires involving significant quantities of this product,

wear safety boots, non-flammable overalls, gloves, hat, goggles and self contained breathing apparatus. All skin areas should be covered. Ensure that no spillage enters drains or water courses.

Unusual Fire & Explosion Hazards: Combustible liquid. There is a moderate risk of an explosion from this product if it is involved in a fire. Fire decomposition products from this product may form toxic and corrosive mixtures in confined spaces.

Stability: This product is unlikely to spontaneously decompose.

Polymerisation: This product is unlikely to spontaneously polymerise.

Decomposition Products: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen, and under some circumstances, oxides of nitrogen. Oxides of sulfur. Oxides of phosphorus. Hydrogen chloride gas, chlorides and in some circumstances, phosgene. Water.

Materials to avoid: Strong oxidising agents.

V OTHER INFORMATION

Ecotoxicity Data:

Chlorpyrifos is highly toxic to birds, fish, aquatic invertebrates and estuarine and marine organisms. Chlorpyrifos is also highly toxic to honeybees and should not be used when bees are actively collecting pollen and nectar. Chlorpyrifos is moderately toxic to pets and livestock and has low toxicity to earthworms.

Environmental Fate:

Chlorpyrifos adsorbs strongly to soil particles and it is not readily soluble in water. It is therefore immobile in soils and unlikely to leach or to contaminate groundwater. The soil half-life of chlorpyrifos for concentrations representing agricultural use practices approximates 70 days depending on sunlight, soil type and climatic conditions. Adsorbed chlorpyrifos is subject to degradation by UV light, chemical hydrolysis and by soil microbes.

In situations where the product accidentally enters water bodies, chlorpyrifos will bind to organic particles in the water and sediment. The concentration of chlorpyrifos that dissolves (approx. 1 ppm) is hydrolysed rapidly in twelve hours to six days depending on pH. Both adsorbed and dissolved chlorpyrifos are also lost from water through volatilization and to a lesser extent photodegradation. Chlorpyrifos is degraded eventually into carbon dioxide and simple organic molecules.

IN CASE OF EMERGENCY: DIAL 000
IF INEFFECTIVE: PHONE POISONS INFORMATION CENTRE.

SPECIALIST COMPANY ADVICE:

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