MATERIAL SAFETY DATA SHEET

Hazardous according to criteria of NOHSC Australia

COMPANY DETAILS

Date of Issue: December 2003
MSDS No. FMC/BES/2

Company: FMC (Chemicals) Pty Ltd.
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IDENTIFICATION

Product Name: BESTOX pc50 Residual Insecticide

Physical Description/Properties

Other Names:	Bestox 50F, Alpha-cypermethrin 50F.
Common Name:	Alpha-cypermethrin.
Manufacturer's Prod. Code:	1249.
Appearance:	White to light tan liquid.
Melting point:	Liquid.
Boiling point:	Not available.
Vapour Pressure:	Not available.
Specific Gravity:	1.02 - 1.03 g/cm^3 @ 20°C.
pH:	6.4 to 7.0.
Flash point (°C):	> 100°C.
Flammability Limits (%):	Not available.
Solubility in Water (g/L):	Disperses / suspends in water.
Corrosive hazard:	Non corrosive to stainless steel containers & polyethylene used in spray tanks and parts.
Poisons Schedule:	S6.
Use:	Residual and knockdown Insecticide for use by Pest Control Operators.

Ingredients:

Chemical Entity:	**CAS Number:**	**Proportion:**
Alpha-cypermethrin	67375-30-8	50 g/L
Water	7732-18-5	> 60%
Other ingredients determined not to be hazardous	-	10-30%

HEALTH HAZARD INFORMATION

Health Effects:
Effects from overexposure result from either swallowing, breathing or coming in contact with the eyes and skin. Symptoms of overexposure include tremors, loss of motor control and greater numbing, burning and tingling. These sensations are reversible and usually subside within 12 hours.

HEALTH HAZARD INFORMATION (Continued)

Risk Phrases: R36 Irritating to the eyes.
R43 May cause sensitisation by skin contact.
Safety Phrases: S2 Keep out of reach of children.
S24/25 Avoid contact with the skin and eyes
S35 This material and its container must be disposed of in a safe way.
S36/37 Wear suitable protective clothing. gloves and eye/face protection

Acute

Swallowed: Bestox pc50 has low oral toxicity; the oral LD_{50} (rat) = 3184 mg/kg. Large toxic doses administered to laboratory animals have produced symptoms such as loss of motor control, tremors, decreased activity, motor ataxia and hypersensitivity to sound.

Eye: Irritating to the eyes.

Skin: Bestox pc50 has a low dermal toxicity and can be irritating to the skin. The dermal LD_{50} (rabbit) > 2000 mg/kg. Bestox pc50 may produce skin sensitisation in laboratory animals and may produce similar effects in humans. Experience to date indicates that contact with Bestox pc50 may produce skin sensations such as numbing, burning and tingling. These sensations are reversible and usually subside within 12 hours.

Inhaled: Based on the inhalation toxicity of the active ingredient, Bestox pc50 is expected to be slightly toxic. [Calculated LC_{50} = 6.4 mg/L/4 hour]

Chronic: No data is available for Bestox pc50. Laboratory animals receiving the active ingredient of Bestox pc50 (Alpha-cypermethrin) in the diet for 90 days showed evidence of elevated liver enzyme levels. Alpha-cypermethrin was negative in a battery of mutagenicity tests.

First Aid

Swallowed: If poisoning occurs, contact a doctor or Poisons Information Centre. Do not induce vomiting or give anything by mouth to an unconscious person.

Eye: Hold eyes open, flood with water for at least 15 minutes and see a doctor. If irritation occurs and persists, obtain medical attention.

Skin: If on skin wash with plenty of soap and water. If irritation occurs and persists, obtain medical attention. May cause sensitisation by skin contact.

Inhaled: Remove patient to fresh air. If breathing discomfort occurs and persists, obtain medical attention.

Advice to Doctor:

Bestox pc50 has low acute oral and dermal toxicity; it is expected to be moderately toxic by inhalation, and minimally irritating to the eyes and may irritate the skin. Do not administer milk, cream or other substances which contain vegetable or animal fats, as they enhance absorption of the active ingredient. Central nervous system stimulation can be controlled with sedation by eg. barbiturates. Reversible skin sensations (paraesthesia) may occur and ordinary skin salves have been found useful in reducing discomfort. Treatment is otherwise controlled removal of exposure followed by symptomatic and supportive care.

PRECAUTIONS FOR USE

Exposure Standards: None applicable.

Engineering Controls:
Ventilation: Thoroughly ventilate all transport vehicles prior to unloading. General air replacement or dilution ventilation is sufficient for material handling and storage, but local exhaust ventilation should be used where vapour or mist may be emitted.

Personal Protection:

Work Clothing: Depending on circumstances encountered, wear long sleeve uniform or overalls and head covering. For larger exposures, as in the case of spills, wear full body cover barrier suit, such as rubber rain suit. Leather items such as shoes, belts and watchbands should be removed and destroyed. Launder all clothes before reuse.

Eye Protection: Where potential for splash, spray or mist exists, wear chemical protective goggles or a face shield. Avoid contact with the eyes.

Respiratory Protection: For splash, vapour or mist exposure wear as a minimum, a properly fitted half face or full face air purifying respirator which is approved for pesticides. Respirator selection is based on airborne concentrations.

Gloves: Wear chemical protective gloves made of materials such as nitrile or neoprene. Thoroughly wash the outside of gloves with soap and water prior to removal. Inspect regularly for leaks. Avoid contact with the skin.

Personal Hygiene: Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking or using tobacco. Shower at the end of the workday.

SAFE HANDLING INFORMATION

Storage and Transport:

Road & Rail Transport: Bestox pc50 is not classified as a Dangerous Goods under the Australian Code for the Transport of Dangerous Goods by Road and Rail.

Marine and Air Transport: Bestox pc50 is a Marine Pollutant according to International Maritime Dangerous Goods (IMDG) Code and the International Air transport Association (IATA). If transporting by sea or air the following Dangerous Goods Classification applies:-
UN 3082, Class 9 (Miscellaneous Dangerous Goods), Packing Group III, Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains 5% Alpha-cypermethrin).

Store in a cool, dry, well ventilated location, away from food and feedstuffs. Avoid excess heat. No smoking, eating or drinking should be allowed where material is used or stored. Keep out of the reach of children and animals. Store in original containers only.

Spills and Disposal:

In the case of spillage, contain and absorb spilled material with absorbent material such as sand, clay or cat litter and dispose of waste as indicated below or according to the Australian Standard 2507 - Storage and Handling of Pesticides.

To decontaminate spill area, tools and equipment, wash with a suitable solution (i.e. organic solvent, detergent, bleach or caustic) and add the solution to the drums of waste already collected. Label for contents. Dispose of drummed wastes, including decontamination solution, in accordance with the requirements of Local or State Waste Management Authorities.

Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. 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.

Fire/Explosion Hazard: Slightly combustible. Material may support combustion at elevated temperatures.

Flashpoint: > 100°C

Degree of fire/explosion hazard: Thermal decomposition and burning may produce toxic by-products. In case of fire, do not breathe fumes.

Extinguishing media: Foam, CO_2, or dry chemical. Soft stream water fog only if necessary. Contain all runoff.

Hazardous decomposition products: Carbon monoxide, carbon dioxide, oxides of nitrogen, hydrogen chloride and hydrogen fluoride.

Special fire-fighting procedures: Isolate fire area. Evacuate downwind residents. Wear full protective clothing and self-contained breathing apparatus. Do not breathe smoke, gases or vapours generated.

OTHER INFORMATION

The physical and environmental properties as well as the environmental toxicology of Alpha-cypermethrin are similar to cypermethrin. Unless indicated the information below pertains to cypermethrin.

Physical/Environmental Properties: Cypermethrin is rapidly degraded in soil with a half-life of 2 to 4 weeks. It is readily hydrolysed under basic conditions (pH=9), but under acid or neutral conditions, hydrolysis half-life can be 20 to 29 days. Cypermethrin has a high affinity for organic matter and a Log P_{ow} of 5.0; yet because of the ease with which the material undergoes degradation, it has a very low potential for bioaccumulation and is not mobile in soil.

Environmental Toxicology: Alpha-cypermethrin is considered highly toxic to fish and aquatic arthropods and has LC_{50} values which range from 0.93 µg/L to 2.8 µg/L. Care should be taken to avoid contamination of the aquatic environment. Cypermethrin is slightly toxic to birds and oral LD_{50} values are greater than 10,248 mg/kg.

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