

**IVORYCHEM PTE LIMITED**

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Co. Registration No. 200405572W
GST Registration No. 200405572W

MATERIAL SAFETY DATA SHEET**TICOMIN 100 EC INSECTICIDE**

Version: Global

Date Approved: 08/13/1998

Revision No: 1

This document has been prepared to meet the requirements of the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200; the EC directive, 91/155/EEC and other regulatory requirements. The information contained herein is for the concentrate as packaged, unless otherwise noted.

CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: TICOMIN 100 EC ECTOPARASITICIDE

ACTIVE INGREDIENT: Cypermethrin Hi Cis 10% EC

CHEMICAL FAMILY: Pyrethroid Pesticide

MOLECULAR FORMULA: C₂₂H₁₉Cl₂NO₃ (cypermethrin)

SYNONYMS: FMC 30980; (-)-a-cyano(3-phenoxyphenyl)methyl () cis, trans-3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate; IUPAC: (RS)-a-cyano-3-phenoxybenzyl (1RS)-cis-trans-3-(2,2-dichlorovinyl)-1,1-dimethylcyclopropanecarboxylate

MANUFACTURER

IVORYCHEM PTE LTD
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Emergency Telephone Numbers:

Emergency Phone contact@ivorychem.com (Please refer local label for Emergency Numbers in your region).

COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Wt.%	PEL/TLV	EC No.	EC Class
Cypermethrin Hi Cis	52315-07-8	10	None	None	None
Surfactant Blend	0000-00-0	90	None	None	None

HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW****IMMEDIATE CONCERNS:**

- Clear amber liquid with an aromatic odour
- Slightly combustible. May support combustion at elevated temperatures.

Company Registration No: 200405572W
Incorporated in the Republic of Singapore Under the Companies Act (Cap 50)



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- Thermal decomposition and burning may form toxic by-products.
- For large exposures or fire, wear personal protective equipment.
- Highly toxic to fish and aquatic organisms. Keep out of drains and water courses.

POTENTIAL HEALTH EFFECTS: Effects from overexposure result from either inhaling or coming into contact with the skin. Symptoms of overexposure include nasal discharge, convulsions and in coordination. Contact with this product may produce skin sensations such as numbing, burning or tingling. These skin sensations are reversible and usually subside within 12 hours.

MEDICAL CONDITIONS AGGRAVATED: None presently known.

FIRST AID MEASURES

EYES: Flush with water for at least 15 minutes. If irritation occurs and persists, obtain medical attention.

SKIN: Wash with plenty of soap and water.

INGESTION: Drink 1 or 2 glasses of water and induce vomiting by touching the back of the throat with a finger or by giving syrup of ipecac. Never induce vomiting or give anything by mouth to an unconscious person. Contact a medical doctor.

INHALATION: Remove to fresh air. If breathing difficulty or discomfort occurs and persists, contact a medical doctor.

NOTES TO MEDICAL DOCTOR: This product has low oral and dermal toxicity. It is expected to have low inhalation toxicity. It is minimally irritating to the eyes, and non-irritating to the skin. Do not administer milk, cream or other substances which contain vegetable or animal fats, as they enhance absorption. Central nervous system stimulation should be controlled with sedation by, e.g., barbiturates. Reversible skin sensations (paresthesia) 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.

FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Foam, CO2 or dry chemical. Soft stream water fog only if necessary. Contain all runoff.

EXPLOSION HAZARDS: Slightly combustible. This material may support combustion at elevated temperatures.

FIRE FIGHTING PROCEDURES: Isolate fire area. Evacuate downwind. Wear full protective clothing and self-contained breathing apparatus. Do not breathe smoke, gases or vapors generated.

HAZARDOUS DECOMPOSITION PRODUCTS: Heat and fire may result in thermal decomposition and the release of carbon monoxide, carbon dioxide, hydrogen cyanide, chlorine and hydrogen chloride.

ACCIDENTAL RELEASE MEASURES

RELEASE NOTES: Isolate and post spill area. Wear protective clothing and personal protective equipment as prescribed in Section 8, "Exposure Controls/Personal Protection". Keep unprotected persons and animals out of the area.

Keep material out of lakes, streams, ponds and sewer drains. Large spills should be covered to prevent dispersal. For dry material, use a wet sweeping compound or water to prevent the formation of dust. If water is used, prevent runoff or dispersion of excess liquid by diking and



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absorbing with a non-combustible absorbent such as clay, sand or soil. Vacuum, shovel or pump all waste material, including absorbent, into a drum and label contents for disposal.

To clean and neutralize spill area, tools and equipment, wash with a suitable solution of caustic or soda ash, and an appropriate alcohol (i.e., methanol, ethanol or isopropanol). Follow this by washing with a strong soap and water solution. Absorb, as above, any excessive liquid and add to the drums of waste already collected. Repeat if necessary. Dispose of drummed waste according to the method outlined in Section 13, "Disposal Considerations".

HANDLING AND STORAGE

GENERAL PROCEDURES: Store in a cool, dry, well-ventilated place. Do not use or store near heat, open flame or hot surfaces. Store in original containers only. Keep out of reach of children and animals. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.

EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Use local exhaust at all process locations where dust may be emitted. Ventilate all transport vehicles prior to unloading.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: For dust exposure, wear chemical protective goggles or a face shield.

RESPIRATORY: For dust exposure wear, as a minimum, a properly fitted half-face or full-face air-purifying respirator which is approved for pesticides (U.S. NIOSH/MSHA, EU CEN or comparable certification organization). Respirator use and selection must be based on airborne concentrations.

PROTECTIVE CLOTHING: Depending upon concentrations encountered, wear coveralls or long-sleeved uniform and head covering. For larger exposures as in the case of spills, wear full body cover barrier suit, such as a PVC suit. Leather items - such as shoes, belts and watchbands - that become contaminated should be removed and destroyed. Launder all work clothing before reuse (separately from household laundry).

WORK HYGIENIC PRACTICES: 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.

GLOVES:

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

COMMENTS: Personal protective recommendations for mixing or applying this product are prescribed on the product label. Information stated above provides useful, additional guidance for individuals whose use or handling of this product is not guided by the product label.

PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Pure isomers of cypermethrin form colorless crystals. When mixed isomers are present, cypermethrin is a viscous semi-solid or a viscous, yellow liquid [2,12]

CHEMICAL NAME: (R,S)-alpha-cyano-3-phenoxybenzyl(1RS)-cis,trans-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropane-carboxylate [12]

MOLECULAR WEIGHT: 416.30

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WATER SOLUBILITY: 0.01 mg/L @ 20 C; insoluble in water [12]
SOLUBILITY IN OTHER SOLVENTS: methanol v.s.; acetone v.s.; xylene v.s. [12]
MELTING POINT: 60-80 C (pure isomers) [12,2]
VAPOR PRESSURE: 5.1 x 10⁻⁷ nPa @ 70 C [12]
PARTITION COEFFICIENT: 6.6020 [25]
ADSORPTION COEFFICIENT: 100,000 [25]

STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Excessive heat and fire.
STABILITY: Stable
POLYMERIZATION: Will not occur

TOXICOLOGICAL INFORMATION

DERMAL LD50: >2000 mg/kg (rabbit)
ORAL LD50: 2342 mg/kg (rat)
INHALATION LC50: 2.5 mg/L/4 hr (rat) (cypermethrin)

ACUTE EFFECTS FROM OVEREXPOSURE: This product has low oral and dermal toxicity. It is expected to have low inhalation toxicity. It is minimally irritating to the eyes, and non-irritating to the skin. Signs of toxicity in laboratory animals included convulsions, ataxia, abdominogenital staining and, oral and ocular discharges. Experience to date indicates that contact with this product may produce skin sensations such as numbing, burning or tingling. These sensations are reversible and usually subside within 12 hours.

CHRONIC EFFECTS FROM OVEREXPOSURE: No data available for the formulation. In studies with laboratory animals, cypermethrin did not cause reproductive toxicity, teratogenicity, neurotoxicity or carcinogenicity in male and female rats and male mice. Cypermethrin caused an increase in benign lung tumors in female mice at 1600 ppm in the diet. The EPA concluded on a weight of evidence approach that cypermethrin represents a low oncogenic potential to female mice at this dose level (approximately 228 mg/kg/day). Liver enlargement is often noted in laboratory animals that have ingested large doses of cypermethrin during their life span. An overall absence of genotoxicity has been demonstrated in tests of mutagenicity, DNA damage and chromosome aberrations. Repeated overexposure to crystalline silica for extended periods has caused acute silicosis. IARC has classified crystalline silica, inhaled in the form of quartz or cristobalite from occupational sources, as carcinogenic to humans (Group 1). NTP has classified respirable crystalline silica (quartz, cristobalite and tridymite) as "reasonably anticipated to be carcinogenic".

CARCINOGENICITY

Chemical Name	NTP Status	IARC Status	OSHA Status	Other
Silica, quartz	Anticipated	Listed	Not listed	(ACGIH) Not Listed

ECOLOGICAL INFORMATION

Unless otherwise indicated, the data presented below are for the active ingredient.
ENVIRONMENTAL DATA: When applied at agricultural use rates, cypermethrin has a moderate rate of degradation in the soil. At termiticidal use rates, cypermethrin degrades at a slower rate which is governed by soil characteristics (e.g., pH). The rate of cypermethrin hydrolysis is



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somewhat faster under alkaline conditions than at neutral or acidic pH. Cypermethrin has a high affinity for organic matter and a Log Pow of 5.0, but has demonstrated a low potential for bioconcentration (BCF = 17). Cypermethrin is not mobile in soil.

ECOTOXICOLOGICAL INFORMATION: Cypermethrin is considered highly toxic to fish and aquatic arthropods, and has LC50 values which range from 0.004 µg/L to 3.6 µg/L. The aquatic arthropods tended to be some of the more sensitive species. Care should be taken to avoid contamination of the aquatic environment. Cypermethrin is slightly toxic to birds and oral LD50 values are greater than 10,248 mg/kg.

DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Open dumping or burning of this material or its packaging is prohibited. If spilled material cannot be disposed of by use according to label instructions, an acceptable method of disposal is to incinerate in accordance with local, state and national environmental laws, rules, standards and regulations. However, because acceptable methods of disposal may vary by location, and regulatory requirements may change, the appropriate agencies should be contacted prior to disposal.

EMPTY CONTAINER: Non-returnable containers which held this material should be cleaned, prior to disposal, by triple-rinsing. Containers which held this material may be cleaned by being triple-rinsed, and recycled, with the rinsate being incinerated.

TRANSPORT INFORMATION

	UN/NA	CLASS	P.G	SHIPPING NAME
TDG	2903	6.1 (3)	III	Pesticide, liquid, toxic, flammable, n.o.s. (Cypermethrin, Petroleum Naphtha)
IATA	2903	6.1 (3)	III	Pesticide, liquid, toxic, flammable, n.o.s. (Cypermethrin, Petroleum Naphtha)
IMDG	2903	6.1 (3)	III	Pesticide, liquid, toxic, flammable, n.o.s. (Cypermethrin, Petroleum Naphtha)

REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311 HAZARD CATEGORIES (40 CFR 370): Immediate, Delayed

SECTION 312 THRESHOLD PLANNING QUANTITY (40 CFR 370): The threshold planning quantity (TPQ) for this product, if treated as a mixture, is 10,000 lbs. This product contains the following ingredients with a TPQ of less than 10,000 lbs.: None

SECTION 313 REPORTABLE INGREDIENTS (40 CFR 372): There are no ingredients in this product which are subject to Section 313 reporting requirements.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355): Not listed

CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT)

CERCLA REGULATORY (40 CFR 302.4): Not listed

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COMMENTS: Australian Hazard Code : 3XE

U.S. EPA Signal Word : WARNING

OTHER INFORMATION

Section(s) Revised : New Format