

MATERIAL SAFETY DATA SHEET



SOLARIS

DATE PREPARED: 02/28/1999

MSDS No: 6104

ORTHO Houseplant & Garden Insect Killer

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ORTHO Houseplant & Garden Insect Killer

PRODUCT DESCRIPTION: insecticide

MANUFACTURER

The SOLARIS Group
of Monsanto Company
P.O. Box 5008
San Ramon, CA 94583-0808

24 HR. EMERGENCY TELEPHONE NUMBERS

Emergency Phone 800-225-2883

EPA REG. NO.: 239-2668B PN: 6064

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>Wt. %</u>	<u>CAS#</u>
Bifenthrin	0.01	82657-04-3

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: White uniform liquid with slight solvent odor.

IMMEDIATE CONCERNS: CAUSES MODERATE EYE IRRITATION

AVOID CONTACT WITH EYES OR CLOTHING

KEEP OUT OF REACH OF CHILDREN.

POTENTIAL HEALTH EFFECTS

EYES: This substance may cause moderate eye irritation. See Toxicological Information,

section 11.

SKIN: This substance is not expected to cause skin irritation and is only slightly toxic if absorbed through the skin. See Toxicological Information, section 11.

INGESTION: This substance is slightly toxic to internal organs if swallowed. The degree of injury will depend on the amount absorbed from the gut. See Toxicological Information, section 11.

INHALATION: Overexposure to the spray mist may be irritating to the respiratory tract. If inhaled, this substance is considered practically non-toxic to internal organs. See Toxicological Information, section 11.

4. FIRST AID MEASURES

EYES: IF IN EYES: Flush eyes with plenty of water. Get medical attention if irritation persists.

SKIN: IF ON SKIN: Wash with plenty of soap and water. Get medical attention if irritation persists.

ADDITIONAL INFORMATION: In case of medical emergencies involving this product, call day or night, 1-800-225-2883.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: >200°F TAG CC

EXTINGUISHING MEDIA: Use CO2, Dry Chemical or Foam extinguishing media.

HAZARDOUS COMBUSTION PRODUCTS: Heating this material may generate carbon monoxide, carbon dioxide, hydrogen chloride and hydrogen fluoride.

FIRE FIGHTING PROCEDURES: Products of combustion from fires involving this material may be toxic. Avoid breathing smoke and mists. Avoid personnel and equipment contact with fallout and runoff. Minimize the amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Decontaminate personal protective equipment and fire fighting equipment before reuse. Read the entire document.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: While wearing rubber gloves, soak up spilled material with paper towels and discard in trash.

LARGE SPILL: Liquid spills on floor or other impervious surfaces should be contained or diked, and should be absorbed with attapulgate, bentonite or other absorbent clays. Collect contaminated absorbent, place in plastic-lined metal drum and dispose of in accordance with instructions provided under Section 13. "DISPOSAL". Thoroughly scrub floor or other impervious surface with a strong industrial type detergent solution and rinse with water.

For liquid spills that soak into the ground, contact the applicable Federal, State and or County Health Dept. for disposal recommendations. If disposal is required then refer to Section 13 "DISPOSAL" for instructions.

Leaking containers should be separated from non-leakers and either the container or its contents transferred to a drum or other non-leaking container and disposed of in accordance with instructions provided under Section 13 "Disposal". Any recovered spilled liquid should be similarly collected and disposed of.

Do not contaminate water, foodstuffs or feed by storage or disposal.

GENERAL PROCEDURES: Observe all protection and safety precautions when cleaning up spills -- see Section 8. "EXPOSURE CONTROLS/PERSONAL PROTECTION". For help with any spill, leak, fire or exposure involving this material, call day or night (800) 225-2883.

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Store in cool dry place, preferably in a locked storage area and avoid excess heat. Keep pesticide in original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide natural or mechanical ventilation to minimize exposure. If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

PERSONAL PROTECTION

EYES AND FACE: Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment available.

SKIN: Wear appropriate protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type of glove for given

application. Wash contaminated skin promptly. Launder contaminated clothing and clean protective equipment before reuse. Wash thoroughly after handling.

For application of product in accordance with label instructions, no special skin protection is required.

RESPIRATORY: This material may be an inhalation hazard and, unless ventilation is adequate, the use of approved respiratory protection is recommended.

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200):

<u>Chemical Name</u>	<u>EXPOSURE LIMITS</u>		
	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>ACGIH STEL</u>
Bifenthrin	None	None	None

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

APPEARANCE: Clear to cloudy white liquid

pH: 5.0 to 8.2

SOLUBILITY IN WATER: Miscible with water.

DENSITY: 8.32 at 20°C

10. STABILITY AND REACTIVITY

STABLE: YES

HAZARDOUS POLYMERIZATION: NO

CONDITIONS TO AVOID: Avoid contact with heat or open flame.

11. TOXICOLOGICAL INFORMATION

ACUTE

EYES: Rabbit - moderately irritating, irritation cleared by 48 hours.
EPA FIFRA toxicity category - III.

DERMAL LD₅₀: Rat = >10 g/kg. EPA FIFRA toxicity category - IV.

SKIN IRRITATION: Rabbit - nonirritating, contact with bifenthrin may produce reversible skin sensations such as numbness, burning and tingling. The skin sensations usually subside within 12 hours. EPA FIFRA toxicity category - IV.

ORAL LD₅₀: Rat = > 5 g/kg.

EPA FIFRA toxicity Category - IV.

INHALATION LC₅₀: Rat - 4 hour inhalation = > 5.0 mg/liter.

EPA FIFRA toxicity category - IV.

SENSITIZATION: Guinea pig - no evidence of allergic skin reactions.

CHRONIC: CARCINOGENICITY : Mouse lifetime feeding study - high dose males - demonstrated an increase in urinary bladder hemangiopericytomas. There was no evidence of increased tumors in the other male or female mice dose levels. The carcinogen no observed effect level (NOEL) for male and female mice was 75 and 90 mg/kg/dy, respectively. Rat lifetime feeding study - no findings of tumors. The rat NOEL was 10 mg/kg/dy. EPA classified bifenthrin - Group C carcinogen.

NEUROTOXICITY: Bifenthrin has not been associated with delayed peripheral neuropathy. Overexposure to pyrethroids results in a transient disruption in the depolarization of nerve membranes by interfering with the closing of the sodium channels. Signs of overexposure may be displayed by tremors, muscle fasciculations, ataxia, spasms, hyperexcitability, hyperactivity and convulsions. Localized skin contact with bifenthrin may result in temporary burning, tingling or numbness sensations.

TERATOGENICITY: Bifenthrin is not considered to be a teratogen (a substance that causes birth defects). The rat and rabbit developmental NOELs were 1 and 8 mg/kg/dy, respectively.

REPRODUCTIVE TOXIN: Bifenthrin is not considered to cause adverse reproductive effects. Results of a rat multigeneration reproduction study indicated no developmental toxicity or reproductive effects at the highest dose level of approximately 15 mg/kg/dy. The maternal toxicity NOEL was approximately 5 mg/kg/dy.

MUTAGENICITY: The results of a series of mutation testing indicate that bifenthrin has a low order of mutagenic potential.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: In soil, bifenthrin is stable over a wide pH range and degrades at a slow rate which is governed by soil characteristics. Bifenthrin will also persist in aquatic sediments. Bifenthrin has a high Log Pow (>6.0), a high affinity for organic matter, and is not mobile in soil. Therefore, there is little potential for movement

into ground water. There is the potential for bifenthrin to bioconcentrate (BCF = 11,750).

ECOTOXICOLOGICAL INFORMATION: Bifenthrin is highly toxic to fish and aquatic arthropods and LC50 values range from 0.0038ug/L to 17.8 ug/L. In general, the aquatic arthropods are the most sensitive species. Care should be taken to avoid contamination of the aquatic environment. Bifenthrin had no effect on mollusks at its limit of water solubility. Bifenthrin is only slightly toxic to both waterfowl and upland game birds (LD50 values range from 1800 mg/kg to >2150 mg/kg).

13. DISPOSAL CONSIDERATIONS

FOR LARGE SPILLS: Material collected that cannot be reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, State or local procedures.

PRODUCT DISPOSAL: The Solaris Group is committed to responsible environmental practices and recommends that all of the product be used up, carefully following all label directions and precautions.

If necessary to dispose of partially filled product container, then securely wrap it in several layers of newspaper and discard in trash.

EMPTY CONTAINER: Do not reuse container. Wrap empty container in several layers of newspaper and discard in trash.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Not Regulated

PRIMARY HAZARD CLASS/DIVISION: None

UN/NA NUMBER: None

PACKING GROUP: No

U.S. SURFACE FREIGHT CLASS: Manufactured Fertilizer Compounds, NOI, Liquid

CANADA TRANSPORT OF DANGEROUS GOODS

PROPER SHIPPING NAME: Not Regulated

SPECIAL SHIPPING NOTES: The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

PRODUCT CLASSIFICATION UNDER SECTION 311 OF SARA				
ACUTE:	CHRONIC:	FIRE:	REACTIVITY:	PRESSURE
NO	YES	NO	NO	GENERATING: NO

STATE REGULATIONS

PROPOSITION 65 STATEMENT: No ingredients on list.

16. OTHER INFORMATION

HMIS CODES

FIRE: 0 HEALTH: 0 REACTIVITY: 0

NFPA CODES

FIRE: 0 HEALTH: 0 REACTIVITY: 0

APPROVAL DATE: 03/31/1999

REVISION SUMMARY New MSDS

MANUFACTURER SUPPLEMENTAL NOTES: EPA FIFRA (Federal Insecticide, Fungicide and Rodenticide Act) Toxicity Categories: The EPA toxicity categories are based on the results of the acute toxicology studies. The toxicology findings are compared to the FIFRA criteria to determine the product label signal word, precautionary and first aid statements. The EPA FIFRA toxicity category summary:

EPA FIFRA Product Label Toxicity Rating
Toxicity Category Signal Word

I DANGER Most toxic and irritating
II WARNING
III CAUTION
IV CAUTION Least toxic and irritating

COMMENTS: For additional information concerning this product, call the SOLARIS Groups Consumer Helpline at 800-225-2883.

MANUFACTURER DISCLAIMER: This Material Safety Data Sheet (MSDS) contains health, safety and environmental information for you and your employees. It does not replace the precautionary language, use directions, or the storage and disposal information found on the product label. Information contained in this MSDS will help you to prepare for emergency response and to meet community right-to-know, emergency response and reporting requirements under SARA Title III and many other laws. Emergency response agencies and health care providers will also find this additional information useful.

Use of this product is regulated by the U.S. Environmental Protection Agency (EPA) through the approved label copy. It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Monsanto Company and The Solaris Group make no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determinations as to its suitability for their purposes prior to use. In no event will Monsanto Company or The Solaris Group be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.