

MATERIAL SAFETY DATA SHEET

ONYX™ INSECTICIDE



MSDS Ref. No: 82657-04-3-114

Version: Global

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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, 2001/58/EC and other regulatory requirements. The information contained herein is for the concentrate as packaged, unless otherwise noted.

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ONYX™ INSECTICIDE

PRODUCT CODE: 6206

ACTIVE INGREDIENT: Bifenthrin

CHEMICAL FAMILY: Pyrethroid Pesticide

MOLECULAR FORMULA: C₂₃H₂₂ClF₃O₂ (bifenthrin)

SYNONYMS: FMC 54800; (2-methyl[1,1'-biphenyl]-3-yl)methyl 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate; IUPAC: 2-methylbiphenyl-3-ylmethyl (Z)-(1RS)-cis-3-(2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate

MANUFACTURER

FMC CORPORATION
Agricultural Products Group
1735 Market Street
Philadelphia, PA 19103 USA
General Information: 800-321-1362

Emergency Telephone Numbers:

Emergency Phone (FMC) 800-331-3148 (U.S.A. & Canada)
Emergency Phone (FMC) 716-735-3765 (Reverse Charges)
CHEMTREC (U.S.): (800) 424-9300 (U.S.A. & Canada)
(202) 483-7616 (All other countries)

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS#</u>	<u>Wt.%</u>	<u>PEL/TLV</u>	<u>EC No.</u>	<u>EC Class</u>
Bifenthrin	82657-04-3	23.34	None	None	R25; R50/53
Alkyl biphenyl mixture	69009-90-1	<33.4	None	None	None

Aliphatic Hydrocarbons	64742-47-8	<13.1	5 mg/m ³ 10 mg/m ³ STEL	265-149-8	None
Surfactant Blend	0000-00-0	<8	None	None	None

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

IMMEDIATE CONCERNS:

- Amber liquid with an aromatic hydrocarbon odor.
- Moderately combustible. May support combustion if heated above the product's flash point (see Section 5, "Fire Fighting Measures" below).
- 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 watercourses.
- Moderately toxic if swallowed and moderately irritating to the skin.

POTENTIAL HEALTH EFFECTS: Effects from overexposure result from either swallowing or coming into contact with the skin. Symptoms of overexposure include bleeding from the nose, tremors and convulsions. Contact with bifenthrin may occasionally produce skin sensations such as rashes, numbing, burning or tingling. These skin sensations are reversible and usually subside within 12 hours.

MEDICAL CONDITIONS AGGRAVATED: None presently known.

4. FIRST AID MEASURES

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

SKIN: Remove contaminated clothing and thoroughly wash with soap and water. If irritation occurs and persists, contact a medical doctor.

INGESTION: Rinse mouth with water. Dilute by giving 1 or 2 glasses of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. See a medical doctor immediately.

INHALATION: Remove to fresh air. If breathing difficulty or discomfort occurs and persists, obtain medical attention.

NOTES TO MEDICAL DOCTOR: This product is moderately toxic if swallowed and is expected to have low dermal toxicity. It is moderately irritating to the skin and mildly irritating to the eyes. Reversible skin sensations (paresthesia) may occur and ordinary skin salves have been found useful in reducing discomfort. Contains aromatic hydrocarbons that may produce a severe pneumonitis if aspirated during vomiting. Consideration should be given to gastric lavage with an endotracheal tube in place. Treatment is otherwise controlled removal of exposure followed by symptomatic and supportive care.

5. FIRE FIGHTING MEASURES

FLASH POINT AND METHOD: 67 - 70°C (153 - 158°F)

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

FIRE / EXPLOSION HAZARDS: Moderately combustible. When heated above the flash point, this material releases vapors which, when mixed with air, can burn or be explosive.

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: Carbon monoxide, carbon dioxide, hydrogen chloride and hydrogen fluoride.

6. 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. Dike to confine spill and absorb with a non-combustible absorbent such as clay, sand or soil. Vacuum, shovel or pump waste 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 excess 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".

7. 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. If crystals are observed, warm to above 60°F (15.4°C) by placing container in warm location. Shake or roll container periodically to dissolve solids. Do not use external source of heat for warming container. Keep out of reach of children and animals. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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

PERSONAL PROTECTIVE EQUIPMENT

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

RESPIRATORY: For splash, mist or spray exposure wear, as a minimum, a properly fitted air-purifying respirator with an organic vapor cartridge (OV) or canister with any R, P or HE prefilter (approved by 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 nitrile, neoprene or Viton® brand. 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

ODOR: Aromatic hydrocarbon

APPEARANCE: Amber liquid

pH: 3.9

SOLUBILITY IN WATER: Emulsifies

SPECIFIC GRAVITY: 1.031 @ 20°C (water = 1)

MOLECULAR WEIGHT: 422.88 (bifenthrin)

WEIGHT PER VOLUME: 8.59 lb/gal. (1031 g/L)

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Excessive heat and fire.

STABILITY: Stable

POLYMERIZATION: Will not occur

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS: Moderately irritating (rabbit)

SKIN EFFECTS: Moderately irritating (rabbit)

DERMAL LD₅₀: >2000 mg/kg (rabbit) (bifenthrin)

ORAL LD₅₀: 153 mg/kg (rat)

ACUTE EFFECTS FROM OVEREXPOSURE: This product is moderately toxic if swallowed and is expected to have low dermal toxicity. It is moderately irritating to the skin and mildly irritating to the eyes. Large doses of bifenthrin ingested by laboratory animals produced signs of toxicity including convulsions, tremors and bloody nasal discharge. Bifenthrin does not cause acute delayed neurotoxicity. Experience to date indicates that contact with bifenthrin may occasionally produce skin sensations such as rashes, numbing, burning or tingling. These sensations are reversible and usually subside within 12 hours. Contact with phenylsulfonate may be corrosive to the skin and severely irritating to the eyes. Inhalation of aromatic hydrocarbon vapors may cause dizziness, disturbances in vision, drowsiness, respiratory irritation, and eye, skin and mucous membrane irritation. Inhalation of aliphatic hydrocarbon vapors may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, and other central nervous system effects. Vomiting after ingestion of this product may cause aspiration of hydrocarbon solvents into the lungs which may result in fatal pulmonary edema.

CHRONIC EFFECTS FROM OVEREXPOSURE: No data available for the formulation. In studies with laboratory animals, bifenthrin did not cause reproductive toxicity or teratogenicity. Tremors were associated with repeated exposure of laboratory animals to bifenthrin. In lifetime feeding studies conducted with rodents, a slight increase in the incidence of urinary bladder tumors at the highest dose in male mice was considered to be an equivocal response, not evidence of a clear compound-related effect. The overall absence of genotoxicity has been demonstrated in mutagenicity tests with bifenthrin. Chronic exposure to aromatic hydrocarbons may cause headaches, dizziness, loss of sensations or feelings (such as numbness), and liver and kidney damage.

CARCINOGENICITY:

IARC: Not listed

NTP: Not listed

OSHA: Not listed

OTHER: Not Listed (ACGIH)

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 0.0038 to 17.8 µg/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 water fowl and upland game birds (LD50 values range from 1,800 mg/kg to >2,150 mg/kg).

13. 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. Do not cut or weld metal containers. Vapors that form may create an explosion hazard.

14. TRANSPORT INFORMATION

SPECIAL SHIPPING NOTES:

U.S. DEPARTMENT OF TRANSPORTATION (DOT):

Non-bulk Packages:

Proper Shipping Name: Pyrethroid pesticide, liquid, toxic
Technical Name(s): bifenthrin
Class or Division: 61
ID Number: UN 3352
Packing Group: III
Label(s): 6.1
Placard(s): 6.1
Mark(s): Pyrethroid pesticide, liquid, toxic (bifenthrin), UN 3352
ERG No.: 151

Bulk Packages:

Proper Shipping Name: Pyrethroid pesticide, liquid, toxic
Technical Name(s): bifenthrin
Class or Division: 6.1
ID Number: UN 3352
Packing Group: III
Marine Pollutant(s): bifenthrin
Label(s): 6.1
Placard(s): 6.1
Mark(s): 3352
ERG No.: 151

INTERNATIONAL MARITIME DANGEROUS GOODS CODE:

Substance or Article: Pyrethroid pesticide, liquid, toxic
Technical Name(s): bifenthrin 23.34%
Class or Division: 6.1
ID Number: UN 3352
Packing Group: III
Marine Pollutant(s): bifenthrin 23.34%
Label(s): 6.1
Placard(s): 6.1
Mark(s): Pyrethroid pesticide, liquid, toxic (bifenthrin 23.34%), UN 3352 and Marine Pollutant
EmS No.: F-A, S-A
Flash Point: 67 - 70°C

ADR - EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD:

UN Number: UN 3352
Name and Description: Pyrethroid pesticide, liquid, toxic
Technical Name(s): bifenthrin 23.34%
Class or Division: 6.1
Classification Code: T6
Packing Group: III
Hazard Identification Number: 60
Marine Pollutant: bifenthrin 23.34%
Label(s): 6.1
Placard(s): 6.1
Marks: Pyrethroid pesticide, liquid, toxic (bifenthrin 23.34%), UN 3352 and Marine Pollutant
Road or Rail: ADR

INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) /
INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA):

Proper Shipping Name: Pyrethroid pesticide, liquid, toxic (bifenthrin)
Class or Division: 6.1
UN or ID Number: UN 3352
Packing Group: III
Packing Instruction
Ltd Qty: Y611 / 2 L
Passenger & Cargo: 611 / 60 L
Cargo Aircraft Only: 618 / 220 L
ERG Code: 6L

HARMONIZED SYSTEM:

Import to the U.S.A.: 3808.10.2500
Export from the U.S.A.: 3808.10.0000

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

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

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

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): This product contains the following ingredients subject to Section 313 reporting requirements: (bifenthrin)

CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT)

CERCLA REGULATORY (40 CFR 302.4): Not listed

COMMENTS:

Australian Hazard Code : 3XE

U.S. EPA Signal Word : WARNING

16. OTHER INFORMATION

REVISION SUMMARY

This MSDS replaces Revision # New MSDS, dated June 20, 2003. Changes in information are as follows:

Bifenthrin technical:

EU Symbols:

T (Toxic); N (Dangerous for the environment)

EU Risk Phrases:

R25 (Toxic by Inhalation)

R50 (Very toxic to aquatic organisms)

R53 (May cause long term adverse effects in the aquatic environment)

EU Safety Phrases:

S1/2 (Keep locked up and out of the reach of children)

S29 (Do not empty into drains)

S45 (In case of accident or if you feel unwell, seek medical advise immediately - show the label where possible)

Viton - E.I. du Pont de Nemours and Co. Trademark;

Onyx and FMC Logo - FMC Trademarks

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