

Material Safety Data Sheet

Onyx® Insecticide (bifenthrin)

SDS #: 6206-A

Revision Date: 2013-03-18

Version 2.05



This MSDS has been prepared to meet U.S. OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Workplace Hazardous Materials Information System (WHMIS) requirements.

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	Onyx® Insecticide (bifenthrin)
Formula code	6206
Active Ingredient(s)	Bifenthrin
Alternate Commercial Name	Biflex® SFR
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.
Chemical Family	Pyrethroid Pesticide
Recommended use	Insecticide
<u>Manufacturer</u>	<u>Emergency telephone number</u>
FMC Corporation Agricultural Products Group 1735 Market Street Philadelphia, PA 19103 General Information: Phone: (215) 299-6000 E-Mail: msdsinfo@fmc.com	For leak, fire, spill or accident emergencies, call: +1 800 / 424 9300 (CHEMTREC - U.S.A.) +1 703 / 527 3887 (CHEMTREC - Collect - All Other Countries) Medical Emergencies: (800) 331-3148 (U.S.A. & Canada) +1 (651) 632-6793 (All Other Countries - Collect)

2. Hazards identification

<u>Appearance</u>	amber liquid
<u>Physical state</u>	Liquid
<u>Odor</u>	hydrocarbon-like
<u>Physical or Chemical Hazards</u>	.
Flammable properties	Combustible liquid
<u>Potential health effects</u>	
Principle Routes of Exposure	Skin contact, Eye contact, Inhalation. Ingestion.
Acute effects	
Eyes	Irritating to eyes.

Skin Irritating to skin. Prolonged or repeated contact may dry skin and cause irritation.
Inhalation May cause irritation of respiratory tract. May cause drowsiness and dizziness.
Ingestion Toxic if swallowed. May cause central nervous system depression. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Potential for aspiration if swallowed.
Chronic effects Effects are expected to be similar to those that are seen with acute toxicity. Chronic exposure to aromatic hydrocarbons may cause headaches, dizziness, loss of sensations or feelings (such as numbness), and liver and kidney damage.

Environmental hazard Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. Composition/information on ingredients

Hazardous ingredients

Chemical Name	CAS-No	Weight %
1,1'-Biphenyl, bis(1-methylethyl)-	69009-90-1	30-40
Bifenthrin	82657-04-3	23.34
Petroleum distillates, hydrotreated light	64742-47-8	10-20
Benzenesulfonic acid, dodecyl-, branched, calcium salts	70528-83-5	1-5

4. First aid measures

Eye contact Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.

Skin contact Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Inhalation Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Ingestion Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not induce vomiting or give anything by mouth to an unconscious person.

Notes to physician Contains petroleum distillate. Vomiting may cause aspiration pneumonia. This product is a pyrethroid. If large amounts have been ingested, the stomach and intestines should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and so should be avoided.

5. Fire-fighting measures

Flammable properties Combustible liquid

Flash Point 67 °C / 153-158 °F
Sensitivity to Mechanical Impact not applicable
Sensitivity to Static Discharge not applicable

Suitable extinguishing media Use CO2, dry chemical, or foam.

Hazardous combustion products Toxic fumes may be produced.

Protective equipment and precautions for firefighters As in any fire, wear self-contained breathing apparatus and full protective gear.

NFPA

Health Hazard	1
Flammability	1
Stability	0
Special Hazards	-

6. Accidental release measures

Personal precautions	Isolate and post spill area. Remove all sources of ignition. Ventilate the area. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see section 8.
Environmental precautions	Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains.
Methods for containment	Dike to prevent runoff. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
Methods for cleaning up	Clean and neutralize spill area, tools and equipment by washing with bleach water and soap. Absorb rinsate and add to the collected waste. Waste must be classified and labeled prior to recycling or disposal. Dispose of waste as indicated in Section 13.
Other	For further clean-up instructions call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.

7. Handling and storage

Handling	Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.
Storage	Keep in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep out of reach of children and animals. Store in original container only.

8. Exposure controls/personal protection

Exposure guidelines

Chemical Name	British Columbia	Quebec	Ontario TWAEV	Alberta
Petroleum distillates, hydrotreated light 64742-47-8	TWA: 200 mg/m ³ Skin			

Occupational exposure controls

Engineering measures	Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.
Personal Protective Equipment	
General Information	If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers. These recommendations apply to the product as supplied.
Respiratory protection	For dust, splash, mist or spray exposures wear a filtering mask.
Eye/face protection	For dust, splash, mist or spray exposure, wear chemical protective goggles or a face-shield.
Skin and body protection	Wear long-sleeved shirt, long pants, socks, shoes, and gloves.
Hand protection	Protective gloves

Hygiene measures

Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking, chewing gum or using tobacco. Shower or bathe at the end of working. Remove and wash contaminated clothing before re-use. Launder work clothing separately from regular household laundry.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	amber liquid
Color	amber
Physical state	Liquid
Odor	hydrocarbon-like
pH	No information available. 3.9
Melting Point/Range	No information available.
Freezing point	No information available.
Boiling Point/Range	not applicable
Flash Point	67 - 70 °C / 153-158 °F
Evaporation rate	not applicable
Flammable properties	Combustible liquid
Vapor pressure	No information available.
Vapor density	No information available.
Density	8.59 lb/gal
Specific Gravity	1.031 @ 20 °C
Water solubility	Emulsifies
Percent volatile	No information available.
Partition coefficient:	not applicable
Viscosity	No information available.

9.2 Other information

10. Stability and reactivity

Stability	Stable.
Conditions to avoid	Heat, flames and sparks
Hazardous decomposition products	May emit toxic fumes under fire conditions. Carbon oxides, Hydrogen chloride, Hydrogen fluoride.
Hazardous polymerization	Hazardous polymerization does not occur.

11. Toxicological information

Eye contact	Moderately irritating to skin rabbit.
Skin contact	Irritating to skin (rabbit).
Ingestion	Large doses of bifenthrin ingested by laboratory animals produced signs of toxicity including convulsions, tremors and bloody nasal discharge. Vomiting after ingestion of this product may cause aspiration of aromatic hydrocarbons into the lungs, which may result in fatal pulmonary edema.
Inhalation	Inhalation of hydrocarbon vapors may cause headaches, dizziness, disturbances in vision, drowsiness, respiratory irritation, anesthesia, unconsciousness, and other central nervous system effects.
LD50 Oral	> 2,000 mg/kg (rabbit) 153 mg/kg (rat)
Sensitization	Sensitizer

Chronic Toxicity - Other Ingredient(s)

Chronic Toxicity Effects are expected to be similar to those that are seen with acute toxicity. Chronic exposure to aromatic hydrocarbons may cause headaches, dizziness, loss of sensations or feelings (such as numbness), and liver and kidney damage.

Carcinogenicity Bifenthrin: Did not show carcinogenic effects in animal experiments.

Mutagenicity Bifenthrin: Not genotoxic.

Reproductive toxicity Bifenthrin: No toxicity to reproduction.

Neurological Effects Tremors were associated with chronic exposure of laboratory animals to bifenthrin, which may disappear with continued exposure.

Developmental Toxicity Bifenthrin: Not teratogenic in animal studies

Target Organ Effects Bifenthrin: A slight increase in male mouse urinary bladder tumors at the highest dose was probably not of toxicological concern.

12. Ecological information

Ecotoxicity

Bifenthrin (82657-04-3)

Active Ingredient(s)	Duration	Species	Value	Units:
Bifenthrin	EC50	Aquatic organisms	0.11 - 0.57	µg/L
Bifenthrin	96 h LC50	Fish	0.1 - 2.0	µg/L
Bifenthrin	LD50 Oral	Bobwhite quail	>1800	mg/kg
Bifenthrin	LD50 Oral	Mallard duck	>2150	mg/kg
Bifenthrin	LD50	Bee	0.1	µg/bee

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Petroleum distillates, hydrotreated light		LC50= 45 mg/L Pimephales promelas 96 h LC50= 2.2 mg/L Lepomis macrochirus 96 h LC50= 2.4 mg/L Oncorhynchus mykiss 96 h		LC50 = 4720 mg/L 96 h

Environmental Fate

Bifenthrin (82657-04-3)

Active Ingredient(s)	Type of Test	Result
Bifenthrin	Bioconcentration factor (BCF)	1709
Bifenthrin	Half-life in soil	~85 days
Bifenthrin	log Pow	6.6
Bifenthrin	Mobility in soil	Not expected to reach groundwater
Bifenthrin	Stability in water	Stable to hydrolysis over a wide range of pH values.

Persistence and degradability Inherently biodegradable.

13. Disposal considerations

Waste disposal methods Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is prohibited. If these wastes cannot be disposed of by use according to label instructions, contact appropriate disposal authorities for guidance.

Contaminated packaging Containers must be disposed of in accordance with local, state and federal regulations. Refer to the product label for container disposal instructions.

14. Transport information

DOT USDOT is requiring that products formerly classified as "Consumer Commodity, ORM-D" transition to "Limited Quantity" by 1/1/2014. During the transition period the 49CFR carton shipping marks may be Consumer Commodity (old) or Limited Quantity Diamond (new). Please prepare shipping documents to match the carton mark.

Packaging Type 4 x 1 quart, 4 x 4 x 1 quart
Proper shipping name Consumer Commodity
Hazard class ORM-D

Packaging Type Non-Bulk
Proper shipping name Pyrethroid pesticide, liquid, toxic
UN/ID No UN3352
Hazard Class 6.1
Packing group III

TDG The "Marine Pollutant" marking is only applicable when shipped by vessel, and is not applicable when shipped only by road or rail in Canada.

UN/ID No UN3352
Proper shipping name Pyrethroid pesticide, liquid, toxic
Hazard Class 6.1
Packing group III
Marine pollutant Bifenthrin.

ICAO/IATA
UN/ID No UN3352
Proper shipping name Pyrethroid pesticide, liquid, toxic
Hazard Class 6.1
Packing group III
Marine pollutant Bifenthrin
Limited quantity 611 / 60L

IMDG/IMO
UN/ID No UN3352
Proper shipping name Pyrethroid pesticide, liquid, toxic
Hazard Class 6.1
Packing group III
EmS No. F-A, S-A
Marine pollutant Bifenthrin

15. Regulatory information

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values %
Bifenthrin	82657-04-3	23.34	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	yes
Chronic Health Hazard	yes
Fire Hazard	yes
Sudden Release of Pressure Hazard	no
Reactive Hazard	no

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

Chemical Name	U.S. - TSCA (Toxic Substances Control Act) - Section 8(d) - 716.120(a) - Health and Safety Reporting - List of Substances
1,1'-Biphenyl, bis(1-methylethyl)-	06/28/1984

International Regulations

Mexico - Grade

No information available.

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

B3 Combustible liquid
 D1B Toxic materials
 D2B Toxic materials



16. Other information

Revision Date: 2013-03-18
Reason for revision: (M)SDS sections updated.

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End of Material Safety Data Sheet