

**SAFETY DATA SHEET**  
**ETHOS XB INSECTICIDE/FUNGICIDE**

**SDS # : 7629-A**  
**Revision date: 2018-08-21**  
**Format: NA**  
**Version 1.06**



**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product Identifier**

**Product Name** ETHOS XB INSECTICIDE/FUNGICIDE

**Other means of identification**

**Product Code(s)** 7629-A

**Legacy Product Code** F4120-1

**Synonyms** BIFENTHRIN: (2-methyl[1,1'-biphenyl]-3-yl)methyl (1R,3R)-rel-3-[(1Z)-2-chloro-3,3,3-trifluoro-1-propenyl]-2,2-dimethylcyclopropanecarboxylate (CAS name); 2-methyl-3-phenylbenzyl (1RS)-cis-3-(2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate (IUPAC name)

**Active Ingredient(s)** Bifenthrin, Bacillus amyloliquefaciens strain D747

**Chemical Family** Pyrethroid Pesticide, Microbial fungicide

**Recommended use of the chemical and restrictions on use**

**Recommended Use:** Insecticide, Fungicide

**Restrictions on Use:** Use as recommended by the label.

**Supplier Address**

FMC Corporation  
2929 Walnut Street  
Philadelphia, PA 19104  
(215) 299-6000 (General Information)  
msdsinfo@fmc.com (E-Mail General Information)

**Emergency telephone number**

For leak, fire, spill or accident emergencies, call:  
1 800 / 424-9300 (CHEMTREC - U.S.A.)  
1 703 / 741-5970 (CHEMTREC - International)  
1 703 / 527-3887 (CHEMTREC - Alternate)

Medical Emergencies:  
1 800 / 331-3148 (ProPharma Group - U.S.A. & Canada)  
1 651 / 632-6793 (ProPharma Group - All Other Countries - Collect)

**2. HAZARDS IDENTIFICATION**

**Classification**

**OSHA Regulatory Status**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)


Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin sensitization	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure)	Category 1
Specific target organ toxicity (repeated exposure)	Category 1

**GHS Label elements, including precautionary statements**

**EMERGENCY OVERVIEW**

**Danger**

**Hazard Statements**  
 H302 - Harmful if swallowed  
 H332 - Harmful if inhaled  
 H351 - Suspected of causing cancer  
 H370 - Causes damage to organs  
 H372 - Causes damage to organs through prolonged or repeated exposure



**Precautionary Statements - Prevention**

- P201 - Obtain special instructions before use
- P202 - Do not handle until all safety precautions have been read and understood
- P264 - Wash face, hands and any exposed skin thoroughly after handling
- P270 - Do not eat, drink or smoke when using this product
- P271 - Use only outdoors or in a well-ventilated area
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray
- P280 - Wear protective gloves/protective clothing/eye protection/face protection

**Precautionary Statements - Response**

- P308 + P311 - If exposed or concerned: Call a POISON CENTER or doctor
- P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
- P312 - Call a POISON CENTER or doctor if you feel unwell
- P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor
- P330 - Rinse mouth

**Precautionary Statements - Storage**

- P405 - Store locked up

**Precautionary Statements - Disposal**

- P501 - Dispose of contents/container according to label directions

**Hazards not otherwise classified (HNOC)**

No hazards not otherwise classified were identified.

**Other Information**

Very toxic to aquatic life.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Chemical Family** Pyrethroid Pesticide, Microbial fungicide.

Chemical name	CAS-No	Weight %
Bifenthrin	82657-04-3	15.7
Ammonium sulfate	7783-20-2	5-10
Bacillus amyloliquefaciens	NOT APPLICABLE	5

Synonyms are provided in Section 1.

#### 4. FIRST AID MEASURES

<b>Eye Contact</b>	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.
<b>Skin Contact</b>	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for further treatment advice.
<b>Inhalation</b>	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
<b>Ingestion</b>	Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
<b>Most important symptoms and effects, both acute and delayed</b>	None known.
<b>Indication of immediate medical attention and special treatment needed, if necessary</b>	This product contains 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

<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. If necessary, Use water spray, fog, carbon dioxide (CO <sub>2</sub> ), foam or dry chemical.
<b>Unsuitable extinguishing media</b>	Avoid heavy hose streams.
<b>Specific Hazards Arising from the Chemical</b>	None known
<b>Explosion data</b>	
<b>Sensitivity to Mechanical Impact</b>	No information available.
<b>Sensitivity to Static Discharge</b>	No information available.
<b>Protective equipment and precautions for firefighters</b>	As in any fire, wear self-contained breathing apparatus and full protective gear. Isolate fire area. Evaluate upwind.

#### 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	Isolate and post spill area. Remove all sources of ignition. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see section 8.
<b>Other</b>	For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.
<b>Environmental Precautions</b>	Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains. Keep out of waterways.
<b>Methods for Containment</b>	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 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.

## 7. HANDLING AND STORAGE

**Handling** Handle in accordance with good industrial hygiene and safety practice. Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.

**Storage** Keep away from open flames, hot surfaces and sources of ignition. Keep in a dry, cool and well-ventilated place. Keep out of reach of children and animals. Keep/store only in original container.

**Incompatible products** None known

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

### Appropriate engineering 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.

### Individual protection measures, such as personal protective equipment

**Eye/Face Protection** For dust, splash, mist or spray exposure, wear chemical protective goggles.

**Skin and Body Protection** Wear suitable protective clothing. Protective shoes or boots.

**Hand Protection** Use protective gloves made of chemical materials such as nitrile or neoprene. Wash the outside of gloves with soap and water before reuse. Check regularly for leaks.

**Respiratory Protection** For dust, splash, mist or spray exposures, wear a filtering mask.

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

**General information** If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Appearance</b>	Liquid suspension
<b>Physical State</b>	Liquid
<b>Color</b>	No information available
<b>Odor</b>	No information available
<b>Odor threshold</b>	No information available
<b>pH</b>	4.25 @ 22°C (1% solution)
<b>Melting point/freezing point</b>	No information available
<b>Boiling Point/Range</b>	No information available
<b>Flash point</b>	> 100 °C / > 212 °F
<b>Evaporation Rate</b>	No information available
<b>Flammability (solid, gas)</b>	No information available

<b>Flammability Limit in Air</b>	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
<b>Vapor pressure</b>	No information available
<b>Vapor density</b>	No information available
<b>Density</b>	9.5989 lb/gal @ 22.5°C
<b>Specific gravity</b>	No information available
<b>Water solubility</b>	No information available
<b>Solubility in other solvents</b>	No information available
<b>Partition coefficient</b>	No information available
<b>Autoignition temperature</b>	No information available
<b>Decomposition temperature</b>	No information available
<b>Viscosity, kinematic</b>	No information available
<b>Viscosity, dynamic</b>	929.3 centistokes @ 24.1°C and 607.4 centistokes @ 44.1°C
<b>Explosive properties</b>	No information available
<b>Oxidizing properties</b>	No information available
<b>Molecular weight</b>	No information available
<b>Bulk density</b>	No information available

## 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	Not applicable
<b>Chemical Stability</b>	Stable under recommended storage conditions.
<b>Possibility of Hazardous Reactions</b>	None under normal processing.
<b>Hazardous polymerization</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Heat, flames and sparks.
<b>Incompatible materials</b>	None known.
<b>Hazardous Decomposition Products</b>	Carbon oxides (COx), Hydrogen chloride, Hydrogen fluoride, Sulfur dioxide.

## 11. TOXICOLOGICAL INFORMATION

### Product Information

<b>LD50 Oral</b>	~ 1103 mg/kg (rat)
<b>LD50 Dermal</b>	> 2000 mg/kg (rat)
<b>LC50 Inhalation</b>	> 2.08 mg/L (4-hr) (rat)
<b>Serious eye damage/eye irritation</b>	Mildly irritating (rabbit).
<b>Skin corrosion/irritation</b>	Slightly irritating (rabbit).
<b>Sensitization</b>	Sensitizer

### Information on toxicological effects

<b>Symptoms</b>	Large doses of bifenthrin ingested by laboratory animals produced signs of toxicity including convulsions, tremors and bloody nasal discharge.
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### Delayed and immediate effects as well as chronic effects from short and long-term exposure

<b>Chronic toxicity</b>	Bifenthrin: Long-term exposure caused neurotoxicity (tremors and impaired gait) in the early exposure in animal studies, but tremors disappeared with continued exposure
<b>Mutagenicity</b>	Bifenthrin. Not genotoxic in laboratory studies
<b>Carcinogenicity</b>	Bifenthrin: Weak treatment-related response for liver adenocarcinomas and benign bladder tumors (lesion) in male mice.
<b>Neurological effects</b>	Bifenthrin: Causes clinical signs of neurotoxicity (tremors, impaired gait, excessive salivation) following acute or subchronic exposure. Tremors disappeared with continued exposure.

**Reproductive toxicity** Bifenthrin: No toxicity to reproduction in animal studies.

**Developmental toxicity** Bifenthrin: Not teratogenic in animal studies.

**STOT - single exposure** May cause damage to organs. See listed target organs below.  
**STOT - repeated exposure** May cause damage to organs through prolonged or repeated exposure. See listed target organs below.

**Target organ effects** Bifenthrin: Central Nervous System (CNS)  
**Neurological effects** Bifenthrin: Causes clinical signs of neurotoxicity (tremors, impaired gait, excessive salivation) following acute or subchronic exposure. Tremors disappeared with continued exposure.

**Aspiration hazard** No information available.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Very toxic to aquatic life.

<b>Bifenthrin (82657-04-3)</b>				
Active Ingredient(s)	Duration	Species	Value	Units
Bifenthrin	96 h LC50	Fish	0.1	µg/L
	72 h EC50	Algae	0.822	mg/L
	48 h EC50	Crustacea	0.11	µg/L
	21 d NOEC	Fish	0.012	µg/L
	21 d NOEC	Crustacea	0.0013	µg/L

**Persistence and degradability** Bifenthrin: Moderately persistent. Does not readily hydrolyze. Not readily biodegradable.

**Bioaccumulation** Bifenthrin: The substance has some potential to bioaccumulate in the environment.

**Mobility** Bifenthrin: Immobile, Not expected to reach groundwater.

**13. DISPOSAL CONSIDERATIONS**

**Waste disposal methods** 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. Proper personal protective equipment, as described in Sections 7 and 8, must be worn while handling materials for waste disposal.

**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** This material is not a hazardous material as defined by U.S. Department of Transportation at 49 CFR Parts 100 through 185.

**TDG**

<b>UN/ID no</b>	UN3082
<b>Proper Shipping Name</b>	Environmentally hazardous substance, liquid, n.o.s.
<b>Hazard class</b>	9
<b>Packing Group</b>	III
<b>Marine Pollutant</b>	Bifenthrin.
<b>Description</b>	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Bifenthrin), 9, III, Marine Pollutant

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**ICAO/IATA**

**UN/ID no** UN3082  
**Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s.  
**Hazard class** 9  
**Packing Group** III  
**Description** UN3082, Environmentally hazardous substance, liquid, n.o.s. (Bifenthrin), 9, III, Marine Pollutant  
**Limited quantity** 30 kg G

**IMDG/IMO**

**UN/ID no** UN3082  
**Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s.  
**Hazard class** 9  
**Packing Group** III  
**EmS No.** F-A, S-F  
**Marine Pollutant** Bifenthrin  
**Description** UN3082, Environmentally hazardous substance, liquid, n.o.s. (Bifenthrin), 9, III, Marine Pollutant

**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	82657-04-3	15.7	1.0

**SARA 311/312 Hazard Categories**

**Acute health hazard** Yes  
**Chronic health hazard** Yes  
**Fire hazard** No  
**Sudden release of pressure hazard** No  
**Reactive Hazard** No

**Clean Water Act**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Acetic Acid 64-19-7	5000 lb			X

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Acetic Acid 64-19-7	5000 lb 2270 kg	

**FIFRA Information**

*This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:*

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**CAUTION**

*Harmful if swallowed. Causes moderate eye irritation. Harmful if absorbed through skin.  
 This pesticide is extremely toxic to fish and aquatic invertebrates.*

**US State Regulations**

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

Chemical name	New Jersey	Massachusetts	Pennsylvania
Bifenthrin 82657-04-3	X		
Ammonium sulfate 7783-20-2		X	X

**International Inventories**

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINC S (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Bifenthrin 82657-04-3				X	X	X		
Ammonium sulfate 7783-20-2	X	X	X	X	X	X	X	X

Chemical name	Mexico - Pollutant Release and Transfer Register - Reporting Emissions for Fabrication, Process or Use -Threshold Quantities	Pollutant Release and Transfer Register - Reporting Emissions - Threshold Quantities
Bifenthrin	100 2500 kg/yr	100 kg/yr

**16. OTHER INFORMATION**

<b>NFPA</b>	<b>Health Hazards</b> 1	<b>Flammability</b> 1	<b>Instability</b> 0	<b>Special Hazards</b> -
<b>HMIS</b>	<b>Health Hazards</b> 1*	<b>Flammability</b> 1	<b>Physical hazard</b> 0	<b>Personal Protection</b> X

\*Indicates a chronic health hazard.

**NFPA/HMIS Ratings Legend**

Severe = 4; Serious = 3; Moderate = 2; Slight = 1; Minimal = 0

**Revision date:** 2018-08-21  
**Reason for revision:** (M)SDS sections updated

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**Prepared By:**

FMC Corporation

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**End of Safety Data Sheet**