

SAFETY DATA SHEET
Ethos 3D Insecticide/Fungicide

SDS # : FO004267-A
Revision date: 2018-08-21
Format: NA
Version 1



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Ethos 3D Insecticide/Fungicide

Other means of identification

Product Code(s) FO004267-A

Legacy Product Code F4120-2

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, 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 corrosion/irritation | Category 3 |
| Serious eye damage/eye irritation | Category 2A |
| 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
H316 - Causes mild skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
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
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
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
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

P312 - Call a POISON CENTER or doctor if you feel unwell
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/ attention
P302 + P352 - IF ON SKIN: Wash with plenty of water and soap
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 + P364 - Take off all contaminated clothing and wash it before reuse
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P310 - Immediately call a POISON CENTER or doctor
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
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 with long lasting effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS**Chemical Family** Pyrethroid, Microbial fungicide.

| Chemical name | CAS-No | Weight % |
|----------------------------|----------------|----------|
| Bifenthrin | 82657-04-3 | 15.7 |
| Glycerin | 56-81-5 | 10-15 |
| Bacillus amyloliquefaciens | NOT APPLICABLE | 5.5 |

Synonyms are provided in Section 1.

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 further treatment advice. |
| Inhalation | 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. |
| Ingestion | Call a physician or poison control center immediately. 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. |
| Most important symptoms and effects, both acute and delayed | None known. |
| Indication of immediate medical attention and special treatment needed, if necessary | 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

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| Suitable Extinguishing Media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. If necessary, Water spray or fog is preferred; if water not available use dry chemical, CO ₂ or regular foam. |
| Unsuitable extinguishing media | Avoid heavy hose streams. |
| Specific Hazards Arising from the Chemical | None known |
| Explosion data | |
| Sensitivity to Mechanical Impact | No information available. |
| Sensitivity to Static Discharge | No information available. |
| Protective equipment and precautions for firefighters | As in any fire, wear self-contained breathing apparatus and full protective gear. Isolate fire area. Evaluate upwind. |

6. ACCIDENTAL RELEASE MEASURES

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|----------------------------------|---|
| Personal Precautions | 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. |
| Other | For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above. |
| Environmental Precautions | 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. |
| Methods for Containment | Stop leak and contain spill if this can be done safely. 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 for a minimum contact of one hour with vinegar-alcohol solution, then by bleach, soap, and water. 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

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| 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

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH | Mexico |
|-----------------------|---|---|----------------|----------------------------------|
| Glycerin (56-81-5) | - | TWA: 15 mg/m ³ TWA: 5 mg/m ³ | - | Mexico: TWA 10 mg/m ³ |
| Chemical name | British Columbia | Quebec | Ontario TWA/EV | Alberta |
| Glycerin (56-81-5) | TWA: 10 mg/m ³ TWA: 3 mg/m ³ | TWA: 10 mg/m ³ | - | TWA: 10 mg/m ³ |

Appropriate engineering controls

| | |
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| 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

| | |
|-------------------------------------|--|
| Appearance | Liquid |
| Physical State | Liquid |
| Color | No information available |
| Odor | No information available |
| Odor threshold | No information available |
| pH | 5.35 @ 24.5°C (1% solution in water) |
| Melting point/freezing point | No information available |
| Boiling Point/Range | No information available |
| Flash point | > 100 °C / > 212 °F |
| Evaporation Rate | No information available |
| Flammability (solid, gas) | No information available |
| Flammability Limit in Air | |
| Upper flammability limit: | No information available |
| Lower flammability limit: | No information available |
| Vapor pressure | No information available |
| Vapor density | No information available |
| Density | 9.0322 lb/gal (1.0823 g/mL) @ 25.4°C |
| Specific gravity | No information available |
| Water solubility | No information available |
| Solubility in other solvents | No information available |
| Partition coefficient | No information available |
| Autoignition temperature | No information available |
| Decomposition temperature | No information available |
| Viscosity, kinematic | No information available |
| Viscosity, dynamic | 487.6 centistokes @ 23.0°C 408.4 centistokes @ 43.0°C |
| Explosive properties | No information available |
| Oxidizing properties | No information available |
| Molecular weight | No information available |
| Bulk density | No information available |

10. STABILITY AND REACTIVITY

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

11. TOXICOLOGICAL INFORMATION

Product Information

| | |
|--|---|
| LD50 Oral | ~ 1062 mg/kg (rat) |
| LD50 Dermal | > 2000 mg/kg (rat) (Based on a similar product) |
| LC50 Inhalation | > 2.09 mg/L (rat) 4 hr |
| Serious eye damage/eye irritation | Moderately irritating (rabbit). |
| Skin corrosion/irritation | Moderately irritating (rabbit). |
| Sensitization | Sensitizer (mice-LLNA) |

Information on toxicological effects

| | |
|---|--|
| Symptoms | Large doses of bifenthrin ingested by laboratory animals produced signs of toxicity including convulsions, tremors and bloody nasal discharge. |
| Delayed and immediate effects as well as chronic effects from short and long-term exposure | |
| Chronic toxicity | Bifenthrin: Long-term exposure caused neurotoxicity (tremors and impaired gait) in the early exposure in animal studies, but tremors disappeared with continued exposure |
| Mutagenicity | Bifenthrin: Not genotoxic in laboratory studies |
| Carcinogenicity | Bifenthrin: Weak treatment-related response for liver adenocarcinomas and benign bladder tumors (lesion) in male mice |
| Neurological effects | 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**

| Bifenthrin (82657-04-3) | | | | |
|--------------------------------|-----------|-----------|--------|-------|
| 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

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|-------------------------------|--|
| 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.

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| 14. TRANSPORT INFORMATION |
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DOT

This material is not hazardous material as defined by U.S. Department of Transportation 49 CFR Parts 100 through 185, unless shipped in bulk packaging. The classification below pertains to the shipment in bulk packaging (>119 gal/882 lb).

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

TDG

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

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 |

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|-----------------------------------|
| 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 % |
|---------------|--------|----------|-------------------------------|
| | | | |

Ethos 3D Insecticide/Fungicide

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| | | | |
|-------------------------|------------|------|-----|
| 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 does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

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

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:

Warning

Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Harmful if swallowed or if absorbed through skin. Avoid contact with skin. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization. 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 | | |
| Glycerin 56-81-5 | X | 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 | | |
| Glycerin 56-81-5 | X | X | X | X | X | X | X | X |

| Chemical name | Carcinogen Status | Mexico |
|---------------|-------------------|----------------------------------|
| Glycerin | | Mexico: TWA 10 mg/m ³ |

| 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

| | | | | |
|-------------|--------------------------|-----------------------|--------------------------|------------------------------|
| NFPA | Health Hazards 1 | Flammability 1 | Instability 0 | Special Hazards - |
| HMIS | Health Hazards 1* | Flammability 1 | Physical hazard 0 | Personal Protection 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:

Initial Release

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Prepared By:

FMC Corporation

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End of Safety Data Sheet