

SAFETY DATA SHEET

Hero® EW Insecticide

SDS # : 6352-A
Revision date: 2016-05-26
Format: NA
Version 1.03



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Hero® EW Insecticide

Other means of identification

Product Code(s) 6352-A

Synonyms

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

ZETA-CYPERMETHRIN: (+/-)- α -cyano(3-phenoxyphenyl)methyl (+/-) cis,
trans-3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate (CAS name); (RS)- α -
cyano-3-phenoxybenzyl
(1RS)-cis-trans-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate (IUPAC name)

Active Ingredient(s) Bifenthrin, Zeta-cypermethrin

Chemical Family Pyrethroid Pesticide

Recommended use of the chemical and restrictions on use

Recommended Use: Insecticide

Restrictions on Use: Use as recommended by the label

Manufacturer Address

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

Emergency telephone number

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

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 3 |
| Acute toxicity - Inhalation (Dusts/Mists) | Category 4 |
| Carcinogenicity | Category 2 |
| Specific target organ toxicity (single exposure) | Category 1 |
| Specific target organ toxicity (repeated exposure) | Category 1 |
| Aspiration toxicity | Category 1 |

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Danger

Hazard Statements
 H301 - Toxic if swallowed
 H304 - May be fatal if swallowed and enters airways
 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
- P281 - Use personal protective equipment as required
- 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

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
- P331 - Do NOT induce vomiting
- P330 - Rinse mouth

Precautionary Statements - Storage

- P405 - Store locked up

Precautionary Statements - Disposal

- P501 - Dispose of contents/container to an approved waste disposal plant

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 Pesticide.

| Chemical name | CAS-No | Weight % |
|-------------------------------------|------------|----------|
| Bifenthrin | 82657-04-3 | 9.72 |
| Zeta-cypermethrin (F2700) | 52315-07-8 | 3.24 |
| Naphtha (petroleum), heavy aromatic | 64742-94-5 | 10-15 |
| Glycerin | 56-81-5 | 5-10 |
| 2-Methylnaphthalene | 91-57-6 | <6 |
| 1-Methylnaphthalene | 90-12-0 | <4 |

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 (within the U.S. and Canada) 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 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.

Most important symptoms and effects, both acute and delayed Central nervous system effects.

Indication of immediate medical attention and special treatment needed, if necessary Treatment is symptomatic and supportive. 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. Digestible fats, oils, or alcohol may increase absorption and so should be avoided.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media Foam. Carbon dioxide (CO₂). Dry chemical. Water spray or fog.

Specific Hazards Arising from the Chemical

Hazardous Combustion Products Carbon oxides (COx), Hydrogen chloride, Hydrogen cyanide, Chlorine.

Explosion data

Sensitivity to Mechanical Impact Not sensitive.

Sensitivity to Static Discharge Not sensitive.

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

6. ACCIDENTAL RELEASE MEASURES

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 See Section 12 for additional Ecological Information.

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.

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. 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 |
| 2-Methylnaphthalene (91-57-6) | TWA: 0.5 ppm | - | - | - |
| 1-Methylnaphthalene (90-12-0) | TWA: 0.5 ppm | - | - | - |
| Chemical name | British Columbia | Quebec | Ontario TWAEV | 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 |
| 2-Methylnaphthalene (91-57-6) | TWA: 0.5 ppm Skin | - | TWA: 0.5 ppm Skin | - |
| 1-Methylnaphthalene (90-12-0) | TWA: 0.5 ppm Skin | - | TWA: 0.5 ppm Skin | - |

Appropriate engineering controls

Engineering measures Apply technical measures to comply with the occupational exposure limits. Ensure adequate ventilation, especially in confined areas. 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 long-sleeved shirt, long pants, socks, and shoes.

Hand Protection Protective gloves

Respiratory Protection For dust, splash, mist or spray exposures wear elastomeric full-face or half mask respirator

with appropriate cartridges and/or filters, which is approved for pesticides (U.S. NIOSH/MSHA, EU CEN or comparable certification organization).

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | |
|-------------------------------------|---------------------------|
| Appearance | Off-white Liquid |
| Physical State | Liquid |
| Color | Off-white |
| Odor | Hydrocarbon-like |
| Odor threshold | No information available |
| pH | 4.2 @ 24.9 °C |
| Melting point/freezing point | Not applicable |
| Boiling Point/Range | No information available |
| Flash point | > 98.89 °C / > 210 °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 | 8.83 lbs/gal (1.058 g/mL) |
| 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 | No information available |
| 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 | None under normal use conditions |
| 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 cyanide. Chlorine. |

11. TOXICOLOGICAL INFORMATION

Product Information

| | |
|------------------|-----------------|
| LD50 Oral | 175 mg/kg (rat) |
|------------------|-----------------|

LD50 Dermal > 5000 mg/kg (rat)
 LC50 Inhalation > 2.12 mg/L (rat) (4-hr)

Serious eye damage/eye irritation Mild Irritant.
 Skin corrosion/irritation Moderately irritating (rabbit).
 Sensitization Non-sensitizing

Information on toxicological effects

Symptoms Large doses of bifenthrin ingested by laboratory animals produced signs of toxicity including convulsions, tremors and bloody nasal discharge. Large doses of zeta-cypermethrin, ingested by laboratory animals, may produce signs of toxicity including tremors, incoordination, convulsions, staggered gait, and oral 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. Zeta-cypermethrin: Long-term exposure caused neurotoxicity (body tremors, decreased motor activity), decreased body weight and increased liver weight.

Mutagenicity Bifenthrin, Zeta-cypermethrin: Not genotoxic in laboratory studies.

Carcinogenicity Bifenthrin: Weak treatment-related response for liver adenocarcinomas and benign bladder tumors (lesion) in male mice. Cypermethrin caused an increase in benign lung tumors in mice, but not in rats. EPA has classified cypermethrin as a possible human carcinogen based on this information, but does not regulate based on its low cancer risk.

Neurological effects Bifenthrin: Causes clinical signs of neurotoxicity (tremors, impaired gait, excessive salivation) following acute or subchronic exposure. Tremors disappeared with continued exposure. Zeta-cypermethrin: Causes neurotoxicity (tremors and decreased motor activity) following acute, subchronic or chronic exposure.

Reproductive toxicity Bifenthrin, Zeta-cypermethrin: No toxicity to reproduction in animal studies.

Developmental toxicity Bifenthrin, Zeta-cypermethrin: Not teratogenic in animal studies.

STOT - single exposure Causes damage to organs. See listed target organs below.

STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure. See listed target organs below.

Target organ effects Bifenthrin, Zeta-cypermethrin: Central Nervous System (CNS), blood

Neurological effects Bifenthrin: Causes clinical signs of neurotoxicity (tremors, impaired gait, excessive salivation) following acute or subchronic exposure. Tremors disappeared with continued exposure. Zeta-cypermethrin: Causes neurotoxicity (tremors and decreased motor activity) following acute, subchronic or chronic exposure.

Aspiration hazard No information available.

| Chemical name | ACGIH | IARC | NTP | OSHA |
|---|-------|----------|-----|------|
| Zeta-cypermethrin (F2700) 52315-07-8 | | Group 2A | | |

ACGIH (American Conference of Governmental Industrial Hygienists)
 A3 - Animal Carcinogen
 IARC (International Agency for Research on Cancer)
 Group 2B - Possibly Carcinogenic to Humans
 NTP (National Toxicology Program)
 Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen
 OSHA (Occupational Safety and Health Administration of the US Department of Labor)
 X - Present

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 |

| Zeta-cypermethrin (F2700) (52315-07-8) | | | | |
|---|-----------|-----------|-------|-------|
| Active Ingredient(s) | Duration | Species | Value | Units |
| Zeta-cypermethrin | 48 h EC50 | Crustacea | 0.14 | µg/L |
| | 96 h LC50 | Fish | 0.69 | µg/L |
| | 72 h EC50 | Algae | >1 | mg/L |
| | 21 d NOEC | Crustacea | 0.01 | µg/L |
| | 21 d NOEC | Fish | 0.015 | µg/L |

Persistence and degradability Bifenthrin: Moderately persistent. Does not readily hydrolyze. Not readily biodegradable.
 Zeta-cypermethrin: Non-persistent. Readily hydrolyzed. Not readily biodegradable.

Bioaccumulation Bifenthrin: The substance has a potential for bioconcentration.
 Zeta-cypermethrin: The substance does not have a potential for bioconcentration.

Mobility Bifenthrin, Zeta-cypermethrin: 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.

Contaminated Packaging Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION

DOT

UN/ID no UN3352
Proper Shipping Name Pyrethroid pesticide, liquid, toxic
Hazard class 6.1
Packing Group III
Marine Pollutant Zeta-cypermethrin F2700 (Bulk Only).
Description UN3352, Pyrethroid pesticide, liquid, toxic, 6.1, PGIII, Marine Pollutant (Zeta-cypermethrin (F2700))

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
Hazard class 6.1
Packing Group III
Marine Pollutant Bifenthrin, Zeta-cypermethrin.
Description UN3352, Pyrethroid pesticide, liquid, toxic (Bifenthrin), 6.1, PGIII, Marine Pollutant (Bifenthrin, Zeta-cypermethrin (F2700))

ICAO/IATA

UN/ID no UN3352
Hazard class 6.1
Packing Group III
Description UN3352, Pyrethroid pesticide, liquid, toxic (Bifenthrin), 6.1, PGIII, Marine Pollutant (Bifenthrin, Zeta-cypermethrin (F2700))

IMDG/IMO

UN/ID no UN3352
Hazard class 6.1
Packing Group III

EmS No. F-A, S-A
 Marine Pollutant Bifenthrin Zeta-cypermethrin
 Description UN3352, Pyrethroid pesticide, liquid, toxic (Bifenthrin), 6.1, PGIII, Marine Pollutant (Bifenthrin, Zeta-cypermethrin (F2700))

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 | 9.72 | 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)

| Chemical name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|------------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Naphthalene 91-20-3 | 100 lb | X | X | 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 |
|------------------------|--------------------------|------------------------------------|
| Naphthalene 91-20-3 | 100 lb 45.4 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:

WARNING

*May be fatal if swallowed. Causes moderate eye irritation.
 This pesticide is extremely toxic to fish, aquatic invertebrates, oysters and shrimp*

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

| Chemical name | New Jersey | Massachusetts | Pennsylvania |
|---|------------|---------------|--------------|
| Bifenthrin 82657-04-3 | X | | |
| Zeta-cypermethrin (F2700) 52315-07-8 | | X | |
| Glycerin 56-81-5 | X | X | X |
| 2-Methylnaphthalene 91-57-6 | X | | |
| 1-Methylnaphthalene 90-12-0 | X | X | X |

International Inventories

| Chemical name | TSCA (United States) | DSL (Canada) | EINECS/ELINCS (Europe) | ENCS (Japan) | China (IECSC) | KECL (Korea) | PICCS (Philippines) | AICS (Australia) |
|---|----------------------|--------------|------------------------|--------------|---------------|--------------|---------------------|------------------|
| Bifenthrin 82657-04-3 | | | | X | X | X | | |
| Zeta-cypermethrin (F2700) 52315-07-8 | | | X | | X | X | X | X |
| Naphtha (petroleum), heavy aromatic 64742-94-5 | X | X | X | X | X | X | X | X |
| Glycerin 56-81-5 | X | X | X | X | X | X | X | X |
| 2-Methylnaphthalene 91-57-6 | X | X | X | X | X | | X | X |
| 1-Methylnaphthalene 90-12-0 | X | X | X | X | X | | X | X |

Mexico - Grade Moderate risk, Grade 2

| 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 |

WHMIS Hazard Class D1B - Toxic materials
 D2A - Very toxic materials



16. OTHER INFORMATION

| | | | | |
|------|-------------------|----------------|-------------------|-----------------------|
| NFPA | Health Hazards 2 | Flammability 1 | Instability 0 | Special Hazards - |
| HMIS | Health Hazards 2* | Flammability 1 | Physical hazard 0 | Personal Protection X |

NFPA/HMIS Ratings Legend * - Chronic hazard

Revision date: 2016-05-26

Reason for revision: (M)SDS sections updated

Disclaimer

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End of Safety Data Sheet