

SAFETY DATA SHEET
Brigade® WSB Insecticide/Miticide

SDS # : 1197-A
Revision date: 2016-05-26
Format: NA
Version 1.04



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Brigade® WSB Insecticide/Miticide

Other means of identification

Product Code(s) 1197-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)

Active Ingredient(s) Bifenthrin

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

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:
1 800 / 331-3148 (PROSAR - U.S.A. & Canada)
1 651 / 632-6793 (PROSAR - 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 |
| 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
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 + 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 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. May be harmful in contact with skin.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family Pyrethroid Pesticide.

| Chemical name | CAS-No | Weight % |
|---|------------|----------|
| Bifenthrin | 82657-04-3 | 10 |
| Kaolin | 1332-58-7 | 30-40 |
| Petroleum distillates, solvent dewaxed light paraffinic | 64742-56-9 | 1-5 |

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 (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 | 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. Never 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 | Treat symptomatically. 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

| | |
|--|---|
| Suitable Extinguishing Media | Use CO ₂ , dry chemical, or foam. |
| Specific Hazards Arising from the Chemical | Powdered material may form explosive dust-air mixtures |
| 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. |

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. |
| 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. |
| Methods for Containment | Use a wet sweeping compound or water to prevent dust formation. |
| Methods for cleaning up | Sweep up and shovel into suitable containers for disposal. 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 |
|-----------------------|--------------------------|---|---|---|
| Kaolin (1332-58-7) | TWA: 2 mg/m ³ | TWA: 15 mg/m ³ TWA: 5 mg/m ³ | TWA: 10 mg/m ³ TWA: 5 mg/m ³ | Mexico: TWA 10 mg/m ³ Mexico: STEL 20 mg/m ³ |
| Chemical name | British Columbia | Quebec | Ontario TWAEV | Alberta |
| Kaolin (1332-58-7) | TWA: 2 mg/m ³ | TWA: 5 mg/m ³ | TWA: 2 mg/m ³ respirable | TWA: 2 mg/m ³ |

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 long-sleeved shirt, long pants, socks, and shoes.

Hand Protection Protective gloves

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. 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 | Light-tan powder |
| Physical State | Dry powder |
| Color | Light tan |
| Odor | Faint hydrocarbon |
| Odor threshold | No information available |
| pH | 8.36 @ 25 °C |
| Melting point/freezing point | Not applicable |
| Boiling Point/Range | No information available |
| Flash point | Not applicable |
| 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 | 0.29-0.40 g/mL |
| Specific gravity | No information available |

| | |
|------------------------------|--------------------------|
| Water solubility | Dispersible in water |
| 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 | 18 lb/cu ft |

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 | Excessive heat. 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 | 335 mg/kg (rat) |
| LD50 Dermal | > 2002 2,000 mg/kg (rabbit) |
| LC50 Inhalation | 3.35 mg/L 4 hr (rat) |

| | |
|-----------------------------------|-----------------------------|
| Serious eye damage/eye irritation | Mildly irritating (rabbit). |
| Skin corrosion/irritation | Non-irritating. |
| 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. |
|----------|--|

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 | 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 | Central Nervous System. |
| 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 | Potential for aspiration if swallowed. |

| | | | | |
|---------------|-------|------|-----|------|
| Chemical name | ACGIH | IARC | NTP | OSHA |
|---------------|-------|------|-----|------|

| | | | | |
|--|----|---------|-------|--|
| Petroleum distillates, solvent dewaxed light paraffinic 64742-56-9 | A2 | Group 1 | Known | |
|--|----|---------|-------|--|

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 a potential for bioconcentration. |
| 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. |
| 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 | Classification below is only applicable when shipped by vessel and is not applicable when shipped by road or rail only. |
| UN/ID no | UN3077 |
| Proper Shipping Name | Environmentally hazardous substance, solid, n.o.s. |
| Hazard class | 9 |
| Packing Group | III |
| Marine Pollutant | Bifenthrin. |
| Description | UN3077, Environmentally hazardous substance, solid, n.o.s. (Bifenthrin), 9, PGIII, Marine Pollutant |

| | |
|-----------------------------|---|
| ICAO/IATA | |
| UN/ID no | UN3077 |
| Proper Shipping Name | Environmentally hazardous substance, solid, n.o.s. |
| Hazard class | 9 |
| Packing Group | III |
| Special Provisions | This product is not subject to regulation when shipped via air. |
| Description | UN3077, Environmentally hazardous substance, solid, n.o.s. (Bifenthrin), 9, PGIII, Marine Pollutant |

| | |
|-----------------------------|--|
| IMDG/IMO | |
| UN/ID no | UN3077 |
| Proper Shipping Name | Environmentally hazardous substance, solid, n.o.s. |

| | |
|------------------|---|
| Hazard class | 9 |
| Packing Group | III |
| EmS No. | F-A, S-F |
| Marine Pollutant | Bifenthrin |
| Description | UN3077, Environmentally hazardous substance, solid, n.o.s. (Bifenthrin), 9, PGIII, 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 | 10 | 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

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

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated by state right-to-know regulations

| Chemical name | New Jersey | Massachusetts | Pennsylvania |
|--------------------------|------------|---------------|--------------|
| Bifenthrin 82657-04-3 | X | | |
| Kaolin | X | X | X |

| | | | |
|--|--|---|--|
| 1332-58-7 | | | |
| Petroleum distillates, solvent dewaxed light paraffinic 64742-56-9 | | 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 | | |
| Kaolin 1332-58-7 | X | X | X | X | X | X | X | X |
| Petroleum distillates, solvent dewaxed light paraffinic 64742-56-9 | X | X | X | | X | X | X | X |

Mexico - Grade

Moderate risk, Grade 2

| Chemical name | Carcinogen Status | Mexico |
|---------------|-------------------|---|
| Kaolin | | Mexico: TWA 10 mg/m ³ Mexico: STEL 20 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 |

*Indicates a chronic health hazard.

 Revision date: 2016-05-26
 Reason for revision: (M)SDS sections updated
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Prepared By:

FMC Corporation

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End of Safety Data Sheet