

**SAFETY DATA SHEET**  
**Brigadier® Insecticide**

**SDS # :** 6369-A  
**Revision date:** 2016-05-26  
**Format:** NA  
**Version** 1.03



**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product Identifier**

**Product Name** Brigadier® Insecticide

**Other means of identification**

**Product Code(s)** 6369-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);

IMIDACLOPRID: (E)-1-(6-chloro-3-pyridylmethyl)-N-nitroimidazolidin-2-ylideneamine

**Active Ingredient(s)** Bifenthrin, Imidacloprid

**Chemical Family** Pyrethroid Pesticide, Neonicotinoid

**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

**GHS Label elements, including precautionary statements**

**EMERGENCY OVERVIEW**

**Danger**

**Hazard Statements**  
 H301 - Toxic 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
- 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
- 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, Neonicotinoid.

Chemical name	CAS-No	Weight %
Imidacloprid	138261-41-3	11.3
Bifenthrin	82657-04-3	11.3
Glycerin	56-81-5	5-10

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 (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.
<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>	Central nervous system effects.
<b>Indication of immediate medical attention and special treatment needed, if necessary</b>	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**

<b>Suitable Extinguishing Media</b>	Foam. Carbon dioxide (CO <sub>2</sub> ). Dry chemical. Soft stream or water fog only if necessary.
<b>Specific Hazards Arising from the Chemical</b>	None known.
<b>Hazardous Combustion Products</b>	Carbon oxides (COx), Hydrogen chloride, Hydrogen fluoride.
<b>Explosion data</b>	
<b>Sensitivity to Mechanical Impact</b>	Not sensitive.
<b>Sensitivity to Static Discharge</b>	Not sensitive.
<b>Protective equipment and precautions for firefighters</b>	As in any fire, wear self-contained breathing apparatus and full protective gear.

**6. ACCIDENTAL RELEASE MEASURES**

<b>Personal Precautions</b>	Isolate and post spill area. 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.
<b>Methods for Containment</b>	Dike to prevent runoff.
<b>Methods for cleaning up</b>	Absorb with earth, sand or other non-combustible material and transfer to containers for later 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** Strong acids Strong bases Strong oxidizing agents

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

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

**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.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

**Appearance** White to Tan Liquid

**Physical State** Liquid

**Color** White to Tan

**Odor** No information available

**Odor threshold** No information available

**pH** 7.0

**Melting point/freezing point** Not applicable

**Boiling Point/Range** No information available

**Flash point** > 100 °C / > 200 °F (estimated)

**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

<b>Vapor density</b>	No information available
<b>Density</b>	9.04 lb/gal
<b>Specific gravity</b>	No information available
<b>Water solubility</b>	Dispersible in water
<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>	No information available
<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>	None under normal use conditions.
<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>	Excessive heat
<b>Incompatible materials</b>	Strong acids. Strong bases. Strong oxidizing agents.
<b>Hazardous Decomposition Products</b>	Carbon oxides (COx), Hydrogen chloride, Hydrogen fluoride,

**11. TOXICOLOGICAL INFORMATION**

**Product Information**

<b>LD50 Oral</b>	175 mg/kg (rat)
<b>LD50 Dermal</b>	> 5,000 mg/kg (rabbit)
<b>LC50 Inhalation</b>	> 2.32 mg/L 4 hr (rat)
<b>Serious eye damage/eye irritation</b>	Non-irritating.
<b>Skin corrosion/irritation</b>	Slightly or non-irritating (rabbit).
<b>Sensitization</b>	Non-sensitizing

**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>	Imidacloprid, 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. Imidacloprid: No evidence of carcinogenicity from animal studies.
<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. Imidacloprid: Slight neurobehavioral effects at highest dose.
<b>Reproductive toxicity</b>	Bifenthrin: No toxicity to reproduction in animal studies.
<b>Developmental toxicity</b>	Imidacloprid, Bifenthrin: Not teratogenic in animal studies.
<b>STOT - single exposure</b>	Causes damage to organs: See listed target organs below.
<b>STOT - repeated exposure</b>	Causes damage to organs through prolonged or repeated exposure: See listed target organs below.
<b>Target organ effects</b>	Bifenthrin: Central Nervous System. Imidacloprid: Thyroid, liver.
<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. Imidacloprid: Slight neurobehavioral effects at highest dose.  
 No information available.

**Aspiration hazard**

Chemical name	ACGIH	IARC	NTP	OSHA
Imidacloprid 138261-41-3		Group 2A		

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

<b>Imidacloprid (138261-41-3)</b>				
Active Ingredient(s)	Duration	Species	Value	Units
Imidacloprid	96 h LC50	Fish	211	mg/L
	48 h EC50	Daphnia	85	mg/L
	LD50	Bee	0.0039	µg/bee
	LD50 Oral	Bobwhite quail	152	mg/kg

<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.  
 Imidacloprid: Persistent in soil.

**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.

**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**

<b>UN/ID no</b>	UN3352
<b>Proper Shipping Name</b>	Pyrethroid pesticide, liquid, toxic
<b>Hazard class</b>	6.1
<b>Packing Group</b>	III
<b>Special Provisions</b>	IB3, T7, TP2, TP28
<b>Description</b>	UN3352, Pyrethroid pesticide, liquid, toxic, 6.1, PG III

**Emergency Response Guide Number**      151

**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.

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**UN/ID no** UN3352  
**Proper Shipping Name** Pyrethroid pesticide, liquid, toxic  
**Hazard class** 6.1  
**Packing Group** III  
**Marine Pollutant** Bifenthrin, Imidacloprid.  
**Description** UN3352, Pyrethroid pesticide, liquid, toxic (Bifenthrin, Imidacloprid), 6.1, PG III, Marine Pollutant

**ICAO/IATA**

**UN/ID no** UN3352  
**Proper Shipping Name** Pyrethroid pesticide, liquid, toxic  
**Hazard class** 6.1  
**Packing Group** III  
**Special Provisions** A3, A4  
**Description** UN3352 Pyrethroid pesticide, liquid, toxic (Bifenthrin, Imidacloprid ), 6.1, PG III, Marine pollutant

**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, Imidacloprid  
**Description** UN3352, Pyrethroid pesticide, liquid, toxic (Bifenthrin, Imidacloprid), 6.1, PG 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	11.3	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
Formaldehyde 50-00-0	100 lb			X
Naphthalene 91-20-3	100 lb	X	X	X

**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

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 Revision date: 2016-05-26  
 Version 1.03

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Formaldehyde 50-00-0	100 lb 45.4 kg	100 lb
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.*

*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		
Glycerin 56-81-5	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)
Imidacloprid 138261-41-3			X		X		X	
Bifenthrin 82657-04-3				X	X	X		
Glycerin 56-81-5	X	X	X	X	X	X	X	X

**Mexico - Grade**

Moderate risk, Grade 2

Chemical name	Carcinogen Status	Mexico
Glycerin		Mexico: TWA 10 mg/m <sup>3</sup>

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
Imidacloprid	500 5000 kg/yr	500 kg/yr
Formaldehyde	100 2500 kg/yr	100 kg/yr
Bifenthrin	100 2500 kg/yr	100 kg/yr



