

SAFETY DATA SHEET
Gladiator™ Insecticide/Miticide

SDS # : 6693-A
Revision date: 2018-05-31
Format: NA
Version 1.04



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Gladiator™ Insecticide/Miticide

Other means of identification

Product Code(s) 6693-A

Synonyms

ZETA-CYPERMETHRIN: (S)-cyano(3-phenoxyphenyl)methyl 3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate (CAS name); mix of (S)- α -cyano-3-phenoxybenzyl (1RS,3RS;1RS,3SR)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate (IUPAC name), , ABAMECTIN: mixture of $\geq 80\%$ (10E,14E,16E)-(1R,4S,5'S,6S,6'R,8R,12S,13S,20R,21R,24S)-6'-[(S)-sec-butyl]-21,24-dihydroxy-5',11,13,22-tetramethyl-2-oxo-(3,7,19-trioxatetracyclo[15.6.1.1^{4,8}.0^{20,24}]]pentacosa-10,14,16,22-tetraene)-6-spiro-2'-(5',6'-dihydro-2'H-pyran)-12-yl 2,6-dideoxy-4-O-(2,6-dideoxy-3-O-methyl- α -L-arabino-hexopyranosyl)-3-O-methyl- α -L-arabino-hexopyranoside and $\leq 20\%$ (10E,14E,16E)-(1R,4S,5'S,6S,6'R,8R,12S,13S,20R,21R,24S)-21,24-dihydroxy-6'-isopropyl-5',11,13,22-tetramethyl-2-oxo-(3,7,19-trioxatetracyclo[[15.6.1.1^{4,8}.0^{20,24}]]pentacosa-10,14,16,22-tetraene)-6-spiro-2'-(5',6'-dihydro-2'H-pyran)-12-yl 2,6-dideoxy-4-O-(2,6-dideoxy-3-O-methyl- α -L-arabino-hexopyranosyl)-3-O-methyl- α -L-arabino-hexopyranoside

Active Ingredient(s) Zeta-cypermethrin, Abamectin

Chemical Family Pyrethroid Pesticide, Glycoside Insecticide

Recommended use of the chemical and restrictions on use

Recommended Use: Insecticide

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
Carcinogenicity	Category 2
Reproductive toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Danger

Hazard Statements
 H302 - Harmful if swallowed
 H332 - Harmful if inhaled
 H351 - Suspected of causing cancer
 H361 - Suspected of damaging fertility or the unborn child
 H335 - May cause respiratory irritation
 H373 - May cause 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 + 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 Pesticide, Glycoside Insecticide.

Chemical name	CAS-No	Weight %
Naphtha (petroleum), heavy aromatic	64742-94-5	5-10
Glycerin	56-81-5	5-10
2-Methylnaphthalene	91-57-6	<6
Zeta-cypermethrin (F2700)	52315-07-8	4.7
1-Methylnaphthalene	90-12-0	<4
Naphthalene	91-20-3	0.1-1
Abamectin	71751-41-2	0.86

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 poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so by a poison control center or doctor. Vomiting may cause aspiration pneumonia. 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	This product contains a pyrethroid. Contains avermectins. Contains petroleum distillate. Vomiting may cause aspiration pneumonia. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and so should be avoided. If toxicity from exposure has progressed to severe vomiting, the extent of resultant fluid and electrolyte imbalance should be gauged. Since avermectins are believed to enhance GABA activity in animals, it is probably wise to avoid drugs that enhance GABA activity (barbiturates, benzodiazepines, and valproic acid).

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Foam, Carbon dioxide (CO ₂), Dry chemical, Soft stream or water fog only if necessary.
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	As in any fire, wear self-contained breathing apparatus and full protective gear. Isolate fire

precautions for firefighters area. Evaluate upwind.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Isolate and post spill 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 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 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	-	-	-
Naphthalene (91-20-3)	TWA: 10 ppm	TWA: 10 ppm TWA: 50 mg/m ³	IDLH: 250 ppm TWA: 10 ppm TWA: 50 mg/m ³ STEL: 15 ppm STEL: 75 mg/m ³	Mexico: TWA 10 ppm Mexico: TWA 50 mg/m ³ Mexico: STEL 15 ppm Mexico: STEL 75 mg/m ³
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	-
Naphthalene (91-20-3)	TWA: 10 ppm STEL: 15 ppm Skin	TWA: 10 ppm TWA: 52 mg/m ³ STEL: 15 ppm	TWA: 10 ppm	TWA: 10 ppm TWA: 52 mg/m ³ STEL: 15 ppm

		STEL: 79 mg/m ³	STEL: 15 ppm Skin	STEL: 79 mg/m ³ Skin
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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 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. 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	White to off-white Liquid
Physical State	Liquid
Color	White to off white
Odor	Slight Aromatic
Odor threshold	No information available
pH	4.65
Melting point/freezing point	Not applicable
Boiling Point/Range	No information available
Flash point	> 100 °C
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	No information available
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	7 lb/gal

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 cyanide, Hydrogen chloride, Chlorine.

11. TOXICOLOGICAL INFORMATION

Product Information

LD50 Oral 550 mg/kg (rat)
LD50 Dermal > 5,000 mg/kg (rat)
LC50 Inhalation 2.03 mg/L (4-hr) (rat)

Serious eye damage/eye irritation Mild Irritant.
Skin corrosion/irritation May cause slight irritation.
Sensitization Non-sensitizing

Information on toxicological effects

Symptoms 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 Zeta-cypermethrin: Long-term exposure caused neurotoxicity (body tremors, decreased motor activity), decreased body weight and increased liver weight.

Mutagenicity Zeta-cypermethrin, Abamectin: Not genotoxic in laboratory studies

Carcinogenicity 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. Abamectin: No evidence of carcinogenicity from animal studies.

Neurological effects Zeta-cypermethrin: Causes neurotoxicity (tremors and decreased motor activity) following acute, subchronic or chronic exposure. Abamectin has produced central nervous system effects in animals.

Reproductive toxicity Zeta-cypermethrin: No toxicity to reproduction in animal studies. Abamectin: Reproductive toxin in animal studies only at doses acutely toxic to the maternal animal.

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

STOT - single exposure May cause respiratory irritation. 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 Zeta-cypermethrin: Central Nervous System (CNS),

Neurological effects Zeta-cypermethrin: Causes neurotoxicity (tremors and decreased motor activity) following acute, subchronic or chronic exposure. Abamectin has produced central nervous system effects in animals.

Aspiration hazard This product presents an aspiration pneumonia hazard.

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

Naphthalene 91-20-3	A3	Group 2B	Reasonably Anticipated	X
Abamectin 71751-41-2		Group 2A		

Legend:

ACGIH (American Conference of Governmental Industrial Hygienists)
 A3 - Animal Carcinogen
 IARC (International Agency for Research on Cancer)
 Group 2A - Probably Carcinogenic to Humans
 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

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

Abamectin (71751-41-2)				
Active Ingredient(s)	Duration	Species	Value	Units
Abamectin	EC50	Daphnia	0.00037	mg/L
	LC50	Fish	0.0036	mg/L
	LD50	Bee	0.002	µg/bee
	LD50 Dietary	Bobwhite quail	3102	ppm
	LD50 Dietary	Mallard duck	383	ppm

Persistence and degradability Zeta-cypermethrin: Non-persistent. Readily hydrolyzed. Not readily biodegradable.
 Abamectin: Non-persistent.

Bioaccumulation Zeta-cypermethrin, Abamectin: The substance does not have a potential for bioconcentration.

Mobility Zeta-cypermethrin, Abamectin: 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 Not regulated for transportation if shipped in Non Bulk packaging. The classification below pertains to the shipment in Bulk packaging.

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

TDG Classification below is only applicable when shipped by vessel and is not applicable when shipped by road or rail only.

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

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 Zeta-cypermethrin
Description UN3082 Environmentally hazardous substance, liquid, n.o.s. (zeta-cypermethrin, abamectin), 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 %
Naphthalene - 91-20-3	91-20-3	0.1-1	0.1
Abamectin - 71751-41-2	71751-41-2	0.86	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	CWA - Toxic Pollutants	CWA - Priority	CWA - Hazardous

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	Quantities		Pollutants	Substances
Ammonium hydroxide 1336-21-6	1000 lb			X
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
Ammonium hydroxide 1336-21-6	1000 lb 454 kg	
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:

CAUTION

Harmful if swallowed. Causes mild eye irritation.

This pesticide is extremely toxic to fish, aquatic invertebrates, oysters and shrimp, and terrestrial wildlife.

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical name	California Prop. 65
Naphthalene - 91-20-3	Carcinogen
Abamectin - 71751-41-2	Developmental

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Glycerin 56-81-5	X	X	X
2-Methylnaphthalene 91-57-6	X		
Zeta-cypermethrin (F2700) 52315-07-8		X	
1-Methylnaphthalene 90-12-0	X	X	X
Naphthalene 91-20-3	X	X	X
Abamectin 71751-41-2	X		

International Inventories

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINCS (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Naphtha (petroleum), heavy aromatic 64742-94-5	X	X	X		X	X	X	X

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Glycerin 56-81-5	X	X	X	X	X	X	X	X
2-Methylnaphthalene 91-57-6	X	X	X	X	X		X	X
Zeta-cypermethrin (F2700) 52315-07-8			X		X	X	X	X
1-Methylnaphthalene 90-12-0	X	X	X	X	X		X	X
Naphthalene 91-20-3	X	X	X	X	X	X	X	X
Abamectin 71751-41-2						X		

Mexico - Grade Slight risk, Grade 1

Chemical name	Carcinogen Status	Mexico
Glycerin		Mexico: TWA 10 mg/m ³
Naphthalene		Mexico: TWA 10 ppm Mexico: TWA 50 mg/m ³ Mexico: STEL 15 ppm Mexico: STEL 75 mg/m ³

WHMIS Statement

This product has been classified in accordance with the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

WHMIS Hazard Class

D1B - Toxic materials
 D2A - Very toxic materials
 D2B - Toxic materials



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

Revision date: 2018-05-31
 Reason for revision: (M)SDS sections updated

Disclaimer

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Prepared By:

FMC Corporation

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End of Safety Data Sheet