

# SAFETY DATA SHEET

## CAYENNE

SDS # : 6322-2-A  
Revision date: 2016-05-12  
Format: NA  
Version 1



### 1. PRODUCT AND COMPANY IDENTIFICATION

#### Product Identifier

**Product Name** CAYENNE

#### Other means of identification

**Product Code(s)** 6322-2-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: (+/-)- $\alpha$ -cyano(3-phenoxyphenyl)methyl (+/-) cis, trans-3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate (CAS name); (RS)-  $\alpha$ -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  
1735 Market Street  
Philadelphia, PA 19103  
(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 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin sensitization	Category 1
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

H302 - Harmful if swallowed  
H304 - May be fatal if swallowed and enters airways  
H317 - May cause an allergic skin reaction  
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  
P260 - Do not breathe 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

#### **Precautionary Statements - Response**

P308 + P311 - If exposed or concerned: Call a POISON CENTER or doctor  
P302 + P352 - IF ON SKIN: Wash with plenty of water and soap  
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention  
P363 - Wash contaminated clothing before reuse  
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	11.25
Zeta-cypermethrin (F2700)	52315-07-8	3.75
Naphtha (petroleum), heavy aromatic	64742-94-5	40-50
Petroleum distillates, solvent dewaxed light paraffinic	64742-56-9	15-25
2-Methylnaphthalene	91-57-6	10-20
Naphthalene	91-20-3	5-10
1-Methylnaphthalene	90-12-0	5-10
Petroleum distillates, solvent dewaxed heavy paraffinic	64742-65-0	1-10

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>	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
<b>Most important symptoms and effects, both acute and delayed</b>	Central nervous system effects. Allergic skin reactions.
<b>Indication of immediate medical attention and special treatment needed, if necessary</b>	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. 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. Water spray or fog.
<b>Specific Hazards Arising from the Chemical</b>	
<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. Isolate fire area. Evaluate downwind.

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	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.
<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>	See Section 12 for additional Ecological Information.
<b>Methods for Containment</b>	Dike to prevent runoff. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
<b>Methods for cleaning up</b>	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

<b>Handling</b>	Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.
<b>Storage</b>	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.
<b>Incompatible products</b>	None known

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH	Mexico
2-Methylnaphthalene (91-57-6)	TWA: 0.5 ppm	-	-	-
Naphthalene (91-20-3)	TWA: 10 ppm	TWA: 10 ppm TWA: 50 mg/m <sup>3</sup>	-	Mexico: TWA 10 ppm Mexico: TWA 50 mg/m <sup>3</sup> Mexico: STEL 15 ppm Mexico: STEL 75 mg/m <sup>3</sup>
1-Methylnaphthalene (90-12-0)	TWA: 0.5 ppm	-	-	-
Chemical name	British Columbia	Quebec	Ontario TWAEV	Alberta
2-Methylnaphthalene (91-57-6)	-	-	TWA: 0.5 ppm  Skin	-
Naphthalene (91-20-3)	-	TWA: 10 ppm TWA: 52 mg/m <sup>3</sup> STEL: 15 ppm STEL: 79 mg/m <sup>3</sup>	TWA: 10 ppm  STEL: 15 ppm Skin	-
1-Methylnaphthalene (90-12-0)	-	-	TWA: 0.5 ppm  Skin	-

### Appropriate engineering controls

<b>Engineering measures</b>	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.
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### Individual protection measures, such as personal protective equipment

<b>Eye/Face Protection</b>	For dust, splash, mist or spray exposure, wear chemical protective goggles.
<b>Skin and Body Protection</b>	Wear long-sleeved shirt, long pants, socks, shoes, chemical-resistant gloves and headgear.
<b>Hand Protection</b>	Protective gloves
<b>Respiratory Protection</b>	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).
<b>Hygiene measures</b>	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.
<b>General information</b>	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

<b>Appearance</b>	Amber liquid
<b>Physical State</b>	Liquid
<b>Color</b>	Amber
<b>Odor</b>	Hydrocarbon-like
<b>Odor threshold</b>	No information available
<b>pH</b>	4.2 (1% solution) at 24°C (75.2°F)
<b>Melting point/freezing point</b>	Not applicable
<b>Boiling Point/Range</b>	No information available
<b>Flash point</b>	110 °C / 230 °F
<b>Evaporation Rate</b>	No information available
<b>Flammability (solid, gas)</b>	No information available
<b>Flammability Limit in Air</b>	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
<b>Vapor pressure</b>	No information available
<b>Vapor density</b>	No information available
<b>Density</b>	8.26 lbs/gal (990.4 g/L)
<b>Specific gravity</b>	0.9224 @ 20 °C
<b>Water solubility</b>	No information available
<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>	Heat, flames and sparks

**Incompatible materials** None known.  
**Hazardous Decomposition Products** Carbon oxides (COx). Hydrogen chloride. Hydrogen fluoride.

## 11. TOXICOLOGICAL INFORMATION

### Product Information

**LD50 Oral** 550 mg/kg (rat)  
**LD50 Dermal** > 5000 mg/kg (rat)  
**LC50 Inhalation** 1.8 mg/L (rat) (4-hr)

**Serious eye damage/eye irritation** Mild Irritant.  
**Skin corrosion/irritation** Moderately irritating (rabbit).  
**Sensitization** Sensitizer.

### 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
Petroleum distillates, solvent dewaxed light paraffinic 64742-56-9	A2			
Naphthalene 91-20-3	A3		Reasonably Anticipated	X
Petroleum distillates, solvent dewaxed heavy paraffinic 64742-65-0	A2			

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

<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

<b>Zeta-cypermethrin (F2700) (52315-07-8)</b>				
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** Containers must be disposed of in accordance with local, state and federal regulations. Refer to the product label for container disposal instructions. Do not reuse or refill this container.

### 14. TRANSPORT INFORMATION

**DOT** Not regulated for transportation if shipped in Non Bulk packaging. The classification below pertains to the shipment in Bulk packaging.

<b>UN/ID no</b>	UN3082
<b>Proper Shipping Name</b>	Environmentally hazardous substance, liquid, n.o.s.
<b>Hazard class</b>	9
<b>Packing Group</b>	III
<b>Reportable Quantity (RQ)</b>	Naphthalene: RQ = 191 gal (1532 lb)
<b>Marine Pollutant</b>	Zeta-cypermethrin.
<b>Description</b>	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Zeta-cypermethrin), 9, PGIII, Marine Pollutant

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

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

**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, Bifenthrin  
Description UN3082, Environmentally hazardous substance, liquid, n.o.s. (Zeta-cypermethrin, 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	11.25	1.0
Naphthalene - 91-20-3	91-20-3	5-10	0.1

**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):

**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):

**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, inhaled or absorbed through the skin. 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	
Petroleum distillates, solvent dewaxed light paraffinic 64742-56-9		X	
2-Methylnaphthalene 91-57-6	X		
Naphthalene 91-20-3	X	X	X
1-Methylnaphthalene 90-12-0	X	X	X

International Inventories**Mexico - Grade**

Serious risk, Grade 3

Chemical name	Carcinogen Status	Mexico
Naphthalene		Mexico: TWA 10 ppm Mexico: TWA 50 mg/m <sup>3</sup> Mexico: STEL 15 ppm Mexico: STEL 75 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
Bifenthrin	100 2500 kg/yr	100 kg/yr

**WHMIS Hazard Class**

D1B - Toxic materials  
D2A - Very toxic materials

**16. OTHER INFORMATION**

NFPA	Health Hazards 3	Flammability 1	Instability 0	Special Hazards -
HMIS	Health Hazards 2*	Flammability 1	Physical hazard 0	Personal Protection X

Revision date: 2016-05-12  
Reason for revision: (M)SDS sections updated

Disclaimer

FMC Corporation believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION

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Version 1

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Prepared By:

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**End of Safety Data Sheet**