

# MATERIAL SAFETY DATA SHEET

## CYNOFF® Insecticide



MSDS Ref. No.: 100000015827

Date Approved: 01/18/2010

Revision No.: 3

This document has been prepared to meet the requirements of the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200. The information contained herein is for the concentrate as packaged, unless otherwise noted.

## 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** CYNOFF® Insecticide  
**PRODUCT CODE:** 6520  
**ACTIVE INGREDIENT(S):** Zeta-cypermethrin\*; Piperonyl butoxide (PBO)\*\*  
**CHEMICAL FAMILY:** Pyrethroid Pesticide  
**MOLECULAR FORMULA:** C<sub>22</sub>H<sub>19</sub>Cl<sub>2</sub>NO<sub>3</sub> (zeta-cypermethrin); C<sub>19</sub>H<sub>30</sub>O<sub>5</sub> (piperonyl butoxide)  
**SYNONYMS:** FMC 56701; (S)-cyano (3-phenoxyphenyl)methyl (+/-)cis/trans 3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate; IUPAC: (S)-a-cyano-3-phenoxybenzyl-(1R)cis-trans-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate or (S)-a-cyano-3-phenoxybenzyl (1RS,3RS,1SR, 3SR)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate\*;  
Butylcarbityl(6-propylpiperonyl) ether, 1,3-Benzodioxole, 5-[[2-(2-butoxyethoxy)ethoxy]methyl]-6-propyl-\*\*\*

**ALTERNATE PRODUCT NAME(S):** ZETA-CYP DUST INSECTICIDE

### MANUFACTURER

FMC CORPORATION  
Agricultural Products Group  
1735 Market Street  
Philadelphia, PA 19103  
(215) 299-6000 (General Information)  
msdsinfo@fmc.com (Email - General Information)

### EMERGENCY TELEPHONE NUMBERS

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

For leak, fire, spill, or accident emergencies, call:  
(800) 424-9300 (CHEMTREC - U.S.A. & Canada)  
(703) 527-3887 (CHEMTREC - Collect - All Other Countries)

## 2. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW:

- Off-white, free-flowing, odorless powder.
- Thermal decomposition may produce toxic by-products.

- Highly toxic to fish and aquatic organisms. Keep out of drains and water courses.
- Expected to be moderately irritating to the skin.

**POTENTIAL HEALTH EFFECTS:** Effects from overexposure result from either swallowing, inhaling, or coming into contact with the eyes or skin. Symptoms of overexposure include tremors, convulsions, increased sensitivity to touch, and incoordination. Contact with zeta-cypermethrin may produce skin sensations such as numbing, burning and tingling. These sensations are reversible and usually subside within 12 hours.

**MEDICAL CONDITIONS AGGRAVATED:** None presently known.

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### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Wt.%	EC No.	EC Class
Zeta-cypermethrin	52315-07-8	0.075	257-842-9	Xn, Xi, N; R20/22-43-50/53
Piperonyl butoxide (PBO)	51-03-6	0.15	200-076-7	Not classified per Annex I of Directive 67/548/EEC
Calcium Carbonate (limestone)	1317-65-3	>90	215-279-6	Not classified

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### 4. FIRST AID MEASURES

**EYES:** Flush with water for at least 15 minutes. If irritation occurs and persists, obtain medical attention.

**SKIN:** Remove contaminated clothing and thoroughly wash with soap and water. If irritation occurs and persists, contact a medical doctor.

**INGESTION:** Rinse mouth with water. Dilute by giving 1 or 2 glasses of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. See a medical doctor immediately.

**INHALATION:** Remove to fresh air. If breathing difficulty or discomfort occurs and persists, contact a medical doctor.

**NOTES TO MEDICAL DOCTOR:** This product is expected to have low oral and dermal toxicity. It is expected to be moderately irritating to the skin and mildly irritating to the eyes. Expected to be mildly sensitizing to the skin. Reversible skin sensations (paresthesia) may occur and ordinary skin salves have been found useful in reducing discomfort. Treatment is otherwise controlled removal of exposure followed by symptomatic and supportive care.

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## 5. FIRE FIGHTING MEASURES

**EXTINGUISHING MEDIA:** Extinguish fire using agents suitable for nearby fires.

**FIRE / EXPLOSION HAZARDS:** Non-combustible.

**FIRE FIGHTING PROCEDURES:** Isolate fire area. Evacuate downwind. Wear full protective clothing and self-contained breathing apparatus. Do not breathe smoke, gases or vapors generated.

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## 6. ACCIDENTAL RELEASE MEASURES

**RELEASE NOTES:** Isolate and post spill area. Wear protective clothing and personal protective equipment as prescribed in Section 8, "Exposure Controls/Personal Protection". Keep unprotected persons and animals out of the area.

Keep material out of lakes, streams, ponds and sewer drains. Dike to confine spill and absorb with a non-combustible absorbent such as clay, sand or soil. Vacuum, shovel or pump waste into a drum and label contents for disposal.

To clean and neutralize contaminated area, scrub area with a solution of detergent (e.g. commercial product such as SuperSoap™, Tide®, Spic and Span®, or other high pH detergent) and water. Let solution sit for 5 minutes. Use a stiff brush to scrub affected area. Repeat if necessary to remove visible staining. Additional decontamination can be made by applying bleach (Clorox® or equivalent) to affected area.

Absorb wash-liquid as noted above, remove visibly contaminated soil and place into recovery / disposal container (plastic, open-top steel drum or equivalent). Place all clean-up material in a container, seal and dispose of in accordance with the method outlined in Section 13 "Disposal Considerations" below.

For further information on spill clean-up, waste disposal, or return of salvaged product, call the FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.

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## 7. HANDLING AND STORAGE

**HANDLING AND STORAGE:** Store in a cool, dry, well-ventilated place. Store in original containers only. Keep out of reach of children and animals. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE LIMITS

Chemical Name	ACGIH	OSHA	Supplier
Calcium Carbonate (limestone)	10 mg/m <sup>3</sup> (TWA)	15 mg/m <sup>3</sup> (PEL) (inhalable dust) 5 mg/m <sup>3</sup> (PEL) (respirable dust)	

**ENGINEERING CONTROLS:** General air replacement or dilution ventilation is sufficient for material handling and storage, but local ventilation should be used when removing this product from containers. Ventilate all transport vehicles prior to unloading.

**WORK HYGIENIC PRACTICES:** Wash thoroughly with soap and water after handling and before eating or smoking.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>ODOR:</b>	Faint, slightly sweet
<b>APPEARANCE:</b>	Blue granules
<b>DENSITY / WEIGHT PER VOLUME:</b>	(Bulk) 1.57 g/mL (98.0 lbs/cu ft)
<b>FLASH POINT:</b>	Not applicable
<b>MOLECULAR WEIGHT:</b>	416.3 (zeta-cypermethrin)
<b>pH:</b>	7.0 @ 24°C (1% dispersion in water)

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## 10. STABILITY AND REACTIVITY

<b>CONDITIONS TO AVOID:</b>	Excessive heat and fire.
<b>STABILITY:</b>	Stable
<b>POLYMERIZATION:</b>	Will not occur
<b>HAZARDOUS DECOMPOSITION PRODUCTS:</b>	Carbon monoxide, carbon dioxide, hydrogen cyanide, chlorine and hydrogen chloride.

## 11. TOXICOLOGICAL INFORMATION

**EYE EFFECTS:** Expected to be mildly irritating. (rabbit)

**SKIN EFFECTS:** Expected to be moderately irritating. (rabbit)

**DERMAL LD<sub>50</sub>:** > 2,000 mg/kg (rabbit)

**ORAL LD<sub>50</sub>:** > 5,000 mg/kg (rat)

**INHALATION LC<sub>50</sub>:** No data available for the formulation.

Zeta-cypermethrin: 2.5 mg/l (4 h) (rat)

**SENSITIZATION:** No data available for the formulation.

Zeta-cypermethrin: (Skin) Mildly sensitizing (guinea pig)

**ACUTE EFFECTS FROM OVEREXPOSURE:** This product is expected to have low oral and dermal toxicity. It is expected to be moderately irritating to the skin and mildly irritating to the eyes. Expected to be mildly sensitizing to the skin. Large doses of zeta-cypermethrin, ingested by laboratory animals, may produce signs of toxicity including tremors, incoordination, convulsions, staggered gait, and oral discharge. Experience to date indicates that contact with zeta-cypermethrin may produce skin sensations such as numbing, burning or tingling. These sensations are reversible and usually subside within 12 hours. Large oral doses of piperonyl butoxide ether may cause vomiting and diarrhea, while repeated skin contact may cause slight irritation. Clinical signs of piperonyl butoxide poisoning include nausea, vomiting, diarrhea, loss of appetite, and mild CNS depression. Reported effects on the blood include pancytopenia, thrombocytopenia, leukopenia, polycythemia, and anemias. A single oral dose of 50 mg PBO produced no ill effects in 8 male volunteers. This product is expected to have low oral, dermal and inhalation toxicity. It is expected to be moderately irritating to the eyes and skin.

**CHRONIC EFFECTS FROM OVEREXPOSURE:** No data available for the formulation. In studies with laboratory animals, zeta-cypermethrin did not cause reproductive effects or teratogenicity in laboratory animals. An overall absence of genotoxicity has been demonstrated in tests of mutagenicity, DNA damage and chromosome aberrations. Piperonyl butoxide ether may affect mammalian liver microsomal detoxification enzymes. Mice fed 0.3 or 0.9% piperonyl butoxide in the diet for 20 days had increased liver weight and other signs of liver toxicity. Male rats given up to 2.4% of piperonyl butoxide in the diet for up to 12 weeks had clinical and histologic signs of liver damage; the highest dose group showed preneoplastic changes, including enlargement of hepatocyte nuclei and multinucleated cells. Kidney damage was also seen. Chronic exposure to respirable calcium carbonate may increase the risk of developing pneumoconiosis.

### CARCINOGENICITY:

Chemical Name	IARC	NTP	OSHA	Other
Piperonyl butoxide (PBO)	3	Not listed	Not listed	(ACGIH) Not listed

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## 12. ECOLOGICAL INFORMATION

The physical and environmental properties, as well as the environmental toxicology of zeta-cypermethrin, are similar to cypermethrin. Unless otherwise indicated, the data presented below pertains to cypermethrin.

**ENVIRONMENTAL DATA:** Cypermethrin is rapidly degraded in soil with a half-life of 2 to 4 weeks. It is readily hydrolyzed under basic conditions (pH = 9), but under acidic and neutral conditions, hydrolysis half-life can be 20 to 29 days. Cypermethrin has a high affinity for organic matter and a Log Pow of 5.0; yet because of the ease with which the material undergoes degradation, it has a very low potential for bioconcentration (BCF = 443) and is not mobile in soil.

**ECOTOXICOLOGICAL INFORMATION:** Zeta-cypermethrin is considered highly toxic to fish and aquatic arthropods and has LC<sub>50</sub> values which range from 0.002 µg/L to 2.37 µg/L. These values are comparable to cypermethrin. Care should be taken to avoid contamination of the aquatic environment. Cypermethrin is slightly toxic to birds, and oral LD<sub>50</sub> values are greater than 10,248 mg/kg.

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## 13. DISPOSAL CONSIDERATIONS

**DISPOSAL METHOD:** Open dumping or burning of this material or its packaging is prohibited. If spilled material cannot be disposed of by use according to label instructions, an acceptable method of disposal is to incinerate in accordance with local, state and national environmental laws, rules, standards and regulations. However, because acceptable methods of disposal may vary by location and regulatory requirements may change, the appropriate agencies should be contacted prior to disposal.

**EMPTY CONTAINER:** Non-returnable containers that held this material should be cleaned, prior to disposal, by triple rinsing. Containers which held this material may be cleaned by being triple-rinsed, and recycled, with the rinsate being incinerated. Do not cut or weld metal containers. Vapors that form may create an explosion hazard.

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## 14. TRANSPORT INFORMATION

### U.S. DEPARTMENT OF TRANSPORTATION (DOT)

<b>PACKAGING TYPE:</b>	Non-Bulk
<b>ADDITIONAL INFORMATION:</b>	This material is not regulated in transportation.
<b>PACKAGING TYPE:</b>	Bulk
<b>PROPER SHIPPING NAME:</b>	Environmentally hazardous substance, solid, n.o.s.

<b>TECHNICAL NAME(S):</b>	Zeta-cypermethrin
<b>PRIMARY HAZARD CLASS / DIVISION:</b>	9
<b>UN/NA NUMBER:</b>	UN 3077
<b>PACKING GROUP:</b>	III
<b>MARINE POLLUTANT:</b>	Zeta-cypermethrin (2S)
<b>LABEL(S):</b>	9
<b>PLACARD(S):</b>	9
<b>MARKING(S):</b>	3077

### **INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG)**

<b>PACKAGING TYPE:</b>	Non-Bulk
<b>PROPER SHIPPING NAME:</b>	Environmentally hazardous substance, solid, n.o.s.
<b>TECHNICAL NAME(S):</b>	Zeta-cypermethrin
<b>PRIMARY HAZARD CLASS / DIVISION:</b>	9
<b>UN/NA NUMBER:</b>	UN 3077
<b>PACKING GROUP:</b>	III
<b>MARINE POLLUTANT:</b>	Zeta-cypermethrin
<b>LABEL(S):</b>	9
<b>PLACARD(S):</b>	9
<b>MARKING(S):</b>	Environmentally hazardous substance, solid, n.o.s. (zeta-cypermethrin), UN 3077 + Marine Pollutants
<b>ADDITIONAL INFORMATION:</b>	EmS Number: F-A, S-F

### **ADR - EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD**

<b>PACKAGING TYPE:</b>	Non-Bulk
<b>PROPER SHIPPING NAME:</b>	Environmentally hazardous substance, solid, n.o.s.
<b>TECHNICAL NAME(S):</b>	Zeta-cypermethrin
<b>PRIMARY HAZARD CLASS / DIVISION:</b>	9
<b>CLASSIFICATION CODE:</b>	M7
<b>UN/NA NUMBER:</b>	UN3077
<b>PACKING GROUP:</b>	III

<b>HAZARD IDENTIFICATION NUMBER:</b>	90
<b>MARINE POLLUTANT:</b>	Zeta-cypermethrin
<b>LABEL(S):</b>	9
<b>PLACARD(S):</b>	9
<b>MARKING(S):</b>	UN 3077

**INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) /  
INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA)**

<b>PACKAGING TYPE:</b>	Non-Bulk
<b>PROPER SHIPPING NAME:</b>	Environmentally hazardous substance, solid, n.o.s.
<b>TECHNICAL NAME(S):</b>	Zeta-cypermethrin
<b>PRIMARY HAZARD CLASS / DIVISION:</b>	9
<b>UN/NA NUMBER:</b>	UN3077
<b>PACKING GROUP:</b>	III
<b>LABEL(S):</b>	9
<b>ADDITIONAL INFORMATION:</b>	Marks: Environmentally hazardous substance, solid, n.o.s. (zeta-cypermethrin), UN3077 + Marine Pollutant.

**OTHER INFORMATION:**

HARMONIZED SYSTEM  
Import to the U.S.A.: 3808.91.2500  
Export from the U.S.A.: 3808.91.0000

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## 15. REGULATORY INFORMATION

### UNITED STATES

**SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)**

**SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355, APPENDIX A):**

Not listed

**SECTION 311 HAZARD CATEGORIES (40 CFR 370):**

Immediate



**SECTION 312 THRESHOLD PLANNING QUANTITY (40 CFR 370):**

The Threshold Planning Quantity (TPQ) for this product, if treated as a mixture, is 10,000 lbs; however, this product contains the following ingredients with a TPQ of less than 10,000 lbs.:  
None

**SECTION 313 REPORTABLE INGREDIENTS (40 CFR 372):**

This product does not contain any toxic chemicals subject to the reporting requirements of Section 313, Title III of the SARA (Superfund Amendments and Reauthorization Act) of 1986.

**CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT)****CERCLA DESIGNATION & REPORTABLE QUANTITIES (RQ) (40 CFR 302.4):**

Not listed

## 16. OTHER INFORMATION

**NFPA**

Health	1
Flammability	0
Reactivity	0
Special	None

No special requirements

NFPA (National Fire Protection Association)

Degree of Hazard Code:

4 = Extreme

3 = High

2 = Moderate

1 = Slight

0 = Insignificant

**REVISION SUMMARY:**

This MSDS replaces Revision #2, dated August 18, 2009.

Changes in information are as follows:

Section 1 (Product and Company Identification)

Section 16 (Other Information)

Cynoff and FMC - FMC Trademarks

Viton - E.I. du Pont de Nemours & Co. Trademark

SuperSoap - Trademark of Weba Technologies, Inc.; Tide - Trademark of Proctor and Gamble; Spic and

Span: Trademark of The Spic and Span Company; Clorox - Trademark of The Clorox Company

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