

MATERIAL SAFETY DATA SHEET

CYNOFF® EC INSECTICIDE



MSDS Ref. No.: 52315-07-8-4

Date Approved: 10/15/2007

Revision No.: 13

This document has been prepared to meet the requirements of the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200; the EC directive, 2001/58/EC and other regulatory requirements. The information contained herein is for the concentrate as packaged, unless otherwise noted.

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME:	CYNOFF® EC INSECTICIDE
PRODUCT CODE:	1167
ACTIVE INGREDIENT(S):	Cypermethrin
CHEMICAL FAMILY:	Pyrethroid Insecticide
MOLECULAR FORMULA:	$C_{22}H_{19}Cl_2NO_2$ (cypermethrin)
SYNONYMS:	FMC 30980; (+/-)-a-cyano(3-phenoxyphenyl)methyl (+/-) cis, trans-3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate; IUPAC: (RS)-a-cyano-3-phenoxybenzyl (1RS)-cis-trans-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate

MANUFACTURER

FMC CORPORATION
Agricultural Products Group
1735 Market Street
Philadelphia, PA 19103
(800) 321-1362 (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:

- Amber liquid with a soapy odor.
- Slightly combustible. May support combustion at elevated temperatures.
- Thermal decomposition and burning may form toxic by-products.
- For large exposures or fire, wear personal protective equipment.
- Highly toxic to fish and aquatic organisms. Keep out of drains and water courses.
- Expected to be moderately irritating to the skin and eyes.

POTENTIAL HEALTH EFFECTS: Effects from overexposure result from inhalation or coming into contact with the eyes or skin. Symptoms of overexposure include decreased activity, tremors, convulsions, loss of bladder control, incoordination, and increased sensitivity to sound. Contact with cypermethrin may produce skin sensations such as numbing, burning and tingling. These skin sensations are reversible and usually subside within 12 hours.

MEDICAL CONDITIONS AGGRAVATED: None presently known.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Wt. %	EC No.	EC Class
Cypermethrin	52315-07-8	24.8	257-842-9	R20/22-37-50/53; S2-24-36/37/39-60-61
Surfactant Blend		<9.6	None	Not classified
Phenylsulfonate	70528-83-5	<1.7	274-654-2	Not classified
Isobutyl alcohol	78-83-1	<0.7	201-148-0	R10-37/38-41-67; S2-7/9-13-26-37/39-46

4. FIRST AID MEASURES

EYES: Flush with water for at least 15 minutes. If irritation occurs and persists, contact a medical doctor.

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 has low oral, dermal and inhalation toxicity. It is expected to be moderately irritating to the eyes and skin. It contains cypermethrin, a pyrethroid insecticide. Do not administer milk, cream or other substances which contain vegetable or animal fats, as they enhance absorption. Central nervous system stimulation should be controlled with sedation by, e.g., barbiturates. The formulation contains phenylsulfonate, a corrosive material. Consideration should be given to gastric lavage with an endotracheal tube in place. 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.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Foam, CO₂ or dry chemical. Soft stream water fog only if necessary. Contain all runoff.

FIRE / EXPLOSION HAZARDS: Slightly combustible. This material may support combustion at elevated temperatures.

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.

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.

7. HANDLING AND STORAGE

HANDLING AND STORAGE: Store in a cool, dry, well-ventilated place. Do not use or store near heat, open flame or hot surfaces. 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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS

Chemical Name	ACGIH	OSHA	Supplier
Isobutyl alcohol	50 ppm (TWA)		

ENGINEERING CONTROLS: Use local exhaust at all process locations where vapor or mist may be emitted. Ventilate all transport vehicles prior to unloading.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: For splash, mist or spray exposure, wear chemical protective goggles or a face shield.

RESPIRATORY: For splash, mist or spray exposures wear, as a minimum, a properly fitted half-face or full-face air-purifying respirator which is approved for pesticides (U.S. NIOSH/MSHA, EU CEN or comparable certification organization). Respirator use and selection must be based on airborne concentrations.

PROTECTIVE CLOTHING: Depending upon concentrations encountered, wear coveralls or long-sleeved uniform and head covering. For larger exposures as in the case of spills, wear full body cover barrier suit, such as a PVC suit. Leather items - such as shoes, belts and watchbands - that become contaminated should be removed and destroyed. Launder all work clothing before reuse (separately from household laundry).

GLOVES: Wear chemical protective gloves made of materials such as butyl rubber, nitrile or Viton® brand. Thoroughly wash the outside of gloves with soap and water prior to removal. Inspect regularly for leaks.

WORK HYGIENIC PRACTICES: 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 at the end of the workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

ODOR:	Soapy
APPEARANCE:	Amber liquid
DENSITY / WEIGHT PER VOLUME:	8.04 lb/gal. (964 g/L)
FLASH POINT:	115 °C (239 °F)
MELTING POINT:	0°C (32°F)
MOLECULAR WEIGHT:	416.3 (cypermethrin)

pH:	5.5 as 5% emulsion
SOLUBILITY IN WATER:	Emulsion
SPECIFIC GRAVITY:	0.96 at 20°C

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID:	Excessive heat and fire.
STABILITY:	Stable
POLYMERIZATION:	Will not occur
HAZARDOUS DECOMPOSITION PRODUCTS:	Heat and fire may result in thermal decomposition and the release of carbon monoxide, carbon dioxide, hydrogen cyanide, chlorine and hydrogen chloride.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS: Expected to be moderately irritating.

SKIN EFFECTS: Expected to be moderately irritating.

DERMAL LD₅₀: > 2,000 mg/kg (rabbit)

ORAL LD₅₀: 1,085 mg/kg (rat)

INHALATION LC₅₀: 12.35 mg/l (1 h) (rat) Maximum attainable concentration - zero mortality

ACUTE EFFECTS FROM OVEREXPOSURE: This product has low oral, dermal and inhalation toxicity. It is expected to be moderately irritating to the eyes and skin. Large doses of cypermethrin ingested by laboratory animals produced signs of toxicity including loss of motor control, tremors, decreased activity, urinary incontinence, incoordination, increased sensitivity to sound and convulsions. Experience to date indicates that contact with cypermethrin may produce skin sensations such as numbing, burning or tingling. These sensations are reversible and usually subside within 12 hours. Contact with phenylsulfonate may be corrosive to the skin and severely irritating to the eyes. Exposure to butanol vapors may produce headaches, drowsiness and irritation of the nose and throat. Excessive exposures to butanol liquid or vapors may result in contact dermatitis and irritation of the mucous membranes.

CHRONIC EFFECTS FROM OVEREXPOSURE: No data available for the formulation. In studies with laboratory animals, cypermethrin did not cause reproductive toxicity, teratogenicity, neurotoxicity or carcinogenicity in male and female rats and male mice. Cypermethrin caused an increase in benign lung tumors in female mice at 1600 ppm in the diet. The EPA concluded on a weight of evidence approach that cypermethrin represents a low oncogenic potential to female mice at this dose level (approximately 228 mg/kg/day). Liver enlargement is often noted in laboratory animals that have ingested large doses of cypermethrin during their life span. An overall absence of genotoxicity has been

demonstrated in tests of mutagenicity, DNA damage and chromosome aberrations. Disturbances in hearing and balance have been reported in workers exposed to butanol vapors.

CARCINOGENICITY:

NTP:	Not listed
IARC:	Not listed
OSHA:	Not listed
OTHER:	(ACGIH) Not listed

12. ECOLOGICAL INFORMATION

Unless otherwise indicated, the data presented below are for the active ingredient.

ENVIRONMENTAL DATA: When applied at agricultural use rates, cypermethrin has a moderate rate of degradation in the soil. At termiticidal use rates, cypermethrin degrades at a slower rate that is governed by soil characteristics (e.g., pH). The rate of cypermethrin hydrolysis is somewhat faster under alkaline conditions than at neutral or acidic pH. Cypermethrin has a high affinity for organic matter and a Log Pow of 5.0, but has demonstrated a low potential for bioconcentration (BCF = 17). Cypermethrin is not mobile in soil.

ECOTOXICOLOGICAL INFORMATION: Cypermethrin is considered highly toxic to fish and aquatic arthropods, and has LC₅₀ values which range from 0.004 µg/L to 3.6 µg/L. The aquatic arthropods tended to be some of the more sensitive species. Care should be taken to avoid contamination of the aquatic environment. Cypermethrin is slightly toxic to birds and oral LD₅₀ values are greater than 10,248 mg/kg.

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.

14. TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT)

ADDITIONAL INFORMATION:	This material is not a hazardous material as defined by US Department of Transportation at 49 CFR Parts 100 through 185.
PACKAGING TYPE:	Bulk
PROPER SHIPPING NAME:	Environmentally hazardous substance, liquid, n.o.s.
TECHNICAL NAME(S):	Cypermethrin
PRIMARY HAZARD CLASS / DIVISION:	9
UN/NA NUMBER:	UN 3082
PACKING GROUP:	III
MARINE POLLUTANT:	Cypermethrin
LABEL(S):	9
PLACARD(S):	9
MARKING(S):	3082

INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG)

PACKAGING TYPE:	Non-Bulk
PROPER SHIPPING NAME:	Environmentally hazardous substance, liquid, n.o.s.
TECHNICAL NAME(S):	Cypermethrin
PRIMARY HAZARD CLASS / DIVISION:	9
UN/NA NUMBER:	UN 3082
PACKING GROUP:	III
MARINE POLLUTANT:	Cypermethrin
LABEL(S):	9
PLACARD(S):	9
MARKING(S):	Environmentally hazardous substance, liquid, n.o.s. (cypermethrin), UN3082 + Marine Pollutant

ADDITIONAL INFORMATION:

EmS Number: F-A, S-F

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

PACKAGING TYPE:	Non-Bulk
PROPER SHIPPING NAME:	Environmentally hazardous substance, liquid, n.o.s.
TECHNICAL NAME(S):	Cypermethrin
PRIMARY HAZARD CLASS / DIVISION:	9
CLASSIFICATION CODE:	M6
UN/NA NUMBER:	UN3082
PACKING GROUP:	III
HAZARD IDENTIFICATION NUMBER:	90
MARINE POLLUTANT:	Cypermethrin
LABEL(S):	9
PLACARD(S):	9
MARKING(S):	UN3082 + Marine Pollutant

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

PACKAGING TYPE:	Non-Bulk
PROPER SHIPPING NAME:	Environmentally hazardous substance, liquid, n.o.s.
TECHNICAL NAME(S):	Cypermethrin
PRIMARY HAZARD CLASS / DIVISION:	9
UN/NA NUMBER:	UN3082
PACKING GROUP:	III
LABEL(S):	9
LIMITED QUANTITY:	Y914 / 30 kg G
LIMITED QUANTITY: PASSENGER / CARGO:	914 / 450 L
LIMITED QUANTITY: CARGO:	914 / 450 L
ADDITIONAL INFORMATION:	Marks: Environmentally hazardous substance, liquid, n.o.s. (cypermethrin), UN 3082 + Marine Pollutant.

OTHER INFORMATION:

HARMONIZED SYSTEM:

Import to the U.S.A.: 3808.91.2500

Export from the U.S.A.: 3808.91.0000

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, Delayed

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):

There are no ingredients in this product, which are subject to Section 313 reporting requirements.

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

Listed

<u>Chemical Name</u>	<u>RQ</u>
Isobutyl alcohol	5,000 lb

FEDERAL INSECTICIDE FUNGICIDE RODENTICIDE ACT

U.S. EPA Signal Word: CAUTION

INTERNATIONAL LISTINGS

Australian Hazard Code: 3Z

HAZARD, RISK AND SAFETY PHRASE DESCRIPTIONS:Cypermethrin:

EC Symbols: Xn (Harmful)

	N	(Dangerous for the environment)
EC Risk Phrases:	R20/22	(Harmful by inhalation and if swallowed.)
	R36/38	(Irritating to eyes and skin.)
	R43	(May cause sensitization by skin contact.)
	R50/53	(Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.)
	R57	(Toxic to bees.)
EC Safety Phrases:	S2	(Keep out of the reach of children.)
	S46	(If swallowed, seek medical advice immediately and show this container or label.)
	S24	(Avoid contact with skin.)
	S37	(Wear suitable gloves.)
	S26	(In case of contact with eyes, rinse immediately with plenty of water and seek medical advice)
	S29	(Do not empty into drains.)

Notes For Preparation:

CLASSIFICATION: Mandatory labeling (self-classification) of hazardous substances: applicable

Additional Information:

Prescribed phrase on label: Follow instructions' use to avoid risk to man and the environment.

Isobutyl alcohol:

EC Symbols:	Xi	(Irritant)
EC Risk Phrases:	R10	(Flammable)
	R37/38	(Irritating to respiratory system and to skin.)
	R41	(Risk of serious damage to eyes.)
	R67	(Vapors may cause drowsiness and dizziness.)
EC Safety Phrases:	S2	(Keep out of the reach of children.)
	S7/9	(Keep container tightly closed and in a well-ventilated place.)
	S13	(Keep away from food, drink and animal feeding stuffs.)
	S26	(In case of contact with eyes, rinse immediately with plenty of water and seek medical advice)
	S37/39	(Wear suitable gloves and eye/face protection.)
	S46	(If swallowed, seek medical advice immediately and show this container or label.)

16. OTHER INFORMATION

NEPA

Health	1
Flammability	1
Reactivity	0
Special	

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 #12, dated December 4, 2006.

Changes in information are as follows:

Section 1 (Product and Company Identification)

Section 15 (Regulatory Information)

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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