

# MATERIAL SAFETY DATA SHEET

## MustangMAX™ EC Insecticide



MSDS Ref. No.: 52315-07-8-86

Date Approved: 03/04/2008

Revision No.: 4

---

This document has been prepared to meet the requirements of the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200 and Canada's Workplace Hazardous Materials Information System (WHMIS) requirements.

---

## 1. PRODUCT AND COMPANY IDENTIFICATION

<b>PRODUCT NAME:</b>	MustangMAX™ EC Insecticide
<b>PRODUCT CODE:</b>	6366
<b>ACTIVE INGREDIENT(S):</b>	Zeta-cypermethrin (F2700)
<b>CHEMICAL FAMILY:</b>	Pyrethroid Pesticide
<b>MOLECULAR FORMULA:</b>	C <sub>22</sub> H <sub>19</sub> Cl <sub>2</sub> NO <sub>3</sub> (zeta-cypermethrin)
<b>SYNONYMS:</b>	FMC 233570; Cyclopropanecarboxylic acid, cis-(+)-3-(2,2-dichloroethenyl)-2,2-dimethyl-, (S)-cyano(3-phenoxyphenyl)methyl ester, AND Cyclopropanecarboxylic acid, trans-(+)-3-(2,2-dichloroethenyl)-2,2-dimethyl-, (S)-cyano(3-phenoxyphenyl)methyl ester)

### 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:

- Brown to reddish-brown viscous liquid, with an aromatic solvent odor.
- Slightly combustible. May support combustion at elevated temperatures.
- Thermal decomposition and burning may form toxic by-products.
- Highly toxic to fish and aquatic organisms. Keep out of drains and water courses.
- Moderately irritating to the skin and eyes.

**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.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Wt. %	EC No.	EC Class
Zeta-cypermethrin (F2700)	52315-07-8	9.6	257-842-9	Xn-Xi-N; R20/22-43-50/53
Aromatic Hydrocarbons	64742-94-5	<42	265-198-5	Xn; R65
Light paraffinic distillates	64742-55-8	<=25	265-158-7	T; R45
Light paraffinic distillate	64741-89-5	<=20	265-091-33	T; R45
Surfactant Blend		<=7	None	Not classified
Heavy paraffinic distillates	64741-88-4	<=5	265-090-8	T; R45

### 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:** Do not induce vomiting and do not give liquids of any kind to the person. 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 moderately irritating to the skin and eyes. Contains aromatic hydrocarbons and light paraffinic distillates that may produce a severe pneumonitis if aspirated during vomiting. 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, CO<sub>2</sub> 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. Keep out of reach of children and animals. Do not store below -6.6°C (20°F). If solids are observed, warm above 4.4°C (40°F) and roll or shake containers to re-dissolve. Do not use or store near heat, open flame or hot surfaces. Store in original containers only. Carefully open containers. After partial use, replace lids and close tightly. 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
Aromatic Hydrocarbons			18 ppm
Heavy paraffinic distillates	5 mg/m <sup>3</sup> (TWA) 10 mg/m <sup>3</sup> (STEL)	500 ppm (PEL) 2,000 mg/m <sup>3</sup> (PEL)	
Light paraffinic distillates	5 mg/m <sup>3</sup> (TWA) 10 mg/m <sup>3</sup> (STEL)		

**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 nitrile, neoprene 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.

### COMMENTS:

Personal protective recommendations for mixing or applying this product are prescribed on the product label. Information stated above provides useful, additional guidance for individuals whose use or handling of this product is not guided by the product label.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>ODOR:</b>	Aromatic solvent
<b>APPEARANCE:</b>	Brown to reddish-brown viscous liquid
<b>DENSITY / WEIGHT PER VOLUME:</b>	8.32 lb/gal @ 20°C
<b>FLASH POINT:</b>	> 110 °C (> 230 °F)
<b>MOLECULAR WEIGHT:</b>	416.3 (zeta-cypermethrin)
<b>pH:</b>	4.4 @ 25 °C

---

## 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:** Moderately irritating (rabbit)

**SKIN EFFECTS:** Moderately irritating (rabbit)

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

**ORAL LD<sub>50</sub>:** 810 mg/kg (rat)

**INHALATION LC<sub>50</sub>:** 0.798 mg/l (4 h) (rat)

**SENSITIZATION:** (Skin) Non-sensitizing (guinea pig)

**ACUTE EFFECTS FROM OVEREXPOSURE:** This product has low oral, dermal and inhalation toxicity. It is moderately irritating to the skin and eyes. Signs of toxicity in laboratory animals included tremors, tonic - clonic convulsions, loss of muscle control, rales, bloody oral discharge, hypersensitivity to touch and ataxia. Experience to date indicates that contact with this product may produce skin sensations such as numbing, burning or tingling. These sensations are reversible and usually subside within 12 hours. Inhalation of aromatic hydrocarbon vapors may cause dizziness, disturbances in vision, drowsiness, respiratory irritation, and eye, skin and mucous membrane irritation. Vomiting after

ingestion of this product may cause aspiration of aromatic hydrocarbons into the lungs, which may result in fatal pulmonary edema.

**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. Chronic exposure to aromatic hydrocarbons may cause headaches, dizziness, loss of sensations or feelings (such as numbness), and liver and kidney damage.

---

## 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.

---

## 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)

<b>PACKAGING TYPE:</b>	Non-Bulk
<b>ADDITIONAL INFORMATION:</b>	This material is not a hazardous material as defined by US Department of Transportation at 49 CFR Parts 100 through 185.
<b>PACKAGING TYPE:</b>	Bulk
<b>PROPER SHIPPING NAME:</b>	Environmentally hazardous substance, liquid, n.o.s.
<b>TECHNICAL NAME(S):</b>	Zeta-cypermethrin
<b>PRIMARY HAZARD CLASS / DIVISION:</b>	9
<b>UN/NA NUMBER:</b>	UN 3082
<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>	3082

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

<b>PACKAGING TYPE:</b>	Non-Bulk
<b>PROPER SHIPPING NAME:</b>	Environmentally hazardous substance, liquid, n.o.s.
<b>TECHNICAL NAME(S):</b>	Zeta-cypermethrin
<b>PRIMARY HAZARD CLASS / DIVISION:</b>	9
<b>UN/NA NUMBER:</b>	UN 3082
<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, liquid, n.o.s. (zeta-cypermethrin), UN3082 + Marine Pollutant
<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, liquid, n.o.s.
<b>TECHNICAL NAME(S):</b>	Zeta-cypermethrin
<b>PRIMARY HAZARD CLASS / DIVISION:</b>	9
<b>CLASSIFICATION CODE:</b>	M6
<b>UN/NA NUMBER:</b>	UN3082
<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>	UN3082 + Marine Pollutant

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

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

##### 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):

Not listed

#### CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT)

##### CERCLA DESIGNATION & REPORTABLE QUANTITIES (RQ) (40 CFR 302.4):

Not listed

#### FEDERAL INSECTICIDE FUNGICIDE RODENTICIDE ACT

U.S. EPA Signal Word: CAUTION

### INTERNATIONAL LISTINGS

Australian Hazard Code: 3Z

### HAZARD AND RISK PHRASE DESCRIPTIONS:

EC Symbols:	T	(Toxic)
	Xn	(Harmful)
	Xi	(Irritant)
	N	(Dangerous for the environment)

EC Risk Phrases: R20/22 (Harmful by inhalation and if swallowed.)  
R43 (May cause sensitization by skin contact.)  
R45 (May cause cancer.)  
R50/53 (Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.)  
R65 (Harmful: may cause lung damage if swallowed.)

---

## 16. OTHER INFORMATION

### REVISION SUMMARY:

This MSDS replaces Revision #3, dated November 8, 2007.

Changes in information are as follows:

Section 14 (Transport Information)

Section 15 (Regulatory Information)

Section 16 (Other Information)

MustangMAX 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

© 2008 FMC Corporation. All Rights Reserved.

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 PROVIDED HEREIN. The information provided herein relates only to the specific product designated and may not be applicable where such product is used in combination with any other materials or in any process. Use of this product is regulated by the U.S. Environmental Protection Agency (EPA). It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Further, since the conditions and methods of use are beyond the control of FMC Corporation, FMC Corporation expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information.