

# MATERIAL SAFETY DATA SHEET

## MUSTANG™ INSECTICIDE



MSDS Ref. No.: 52315-07-8-13

Date Approved: 01/13/2010

Revision No.: 11

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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.

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## 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** MUSTANG™ INSECTICIDE  
**PRODUCT CODE:** 1495  
**ACTIVE INGREDIENT(S):** Zeta-cypermethrin  
**CHEMICAL FAMILY:** Pyrethroid Pesticide  
**MOLECULAR FORMULA:** C<sub>22</sub>H<sub>19</sub>Cl<sub>2</sub>NO<sub>3</sub> (zeta-cypermethrin)  
**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

**ALTERNATE PRODUCT NAME(S):** Mustang 1.5 EW

### 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)

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## 2. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW:

- White liquid with a faint, sharp and acrid 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.
- Moderately toxic if swallowed.

**POTENTIAL HEALTH EFFECTS:** Effects from overexposure result from either swallowing or inhaling this product. Symptoms of overexposure include salivation, tremors, convulsions, decreased activity and incoordination. Contact with this product may produce skin sensations such as numbing, burning or tingling. These skin 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	17.1	257-842-9	Xn, Xi, N; R20/22-43-50/53
Surfactant Blend		<7.5	None	Not classified
Propylene Glycol	57-55-6	<6	200-338-0	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:** Wash with plenty of soap and water. Get medical attention if irritation occurs and persists.

**INGESTION:** Drink 1 or 2 glasses of water and induce vomiting by touching the back of the throat with a finger. Never induce vomiting or give anything by mouth to an unconscious person. Contact a medical doctor.

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

**NOTES TO MEDICAL DOCTOR:** This product has moderate oral, and low dermal and inhalation toxicity. It is mildly irritating to the eyes, and slightly irritating 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:** 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.

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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. 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.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**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 neoprene. 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.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>ODOR:</b>	Faint, sharp and acrid
<b>APPEARANCE:</b>	White liquid
<b>DENSITY / WEIGHT PER VOLUME:</b>	8.66 lb/gal (1040 g/L)
<b>MOLECULAR WEIGHT:</b>	416.3 (zeta-cypermethrin)
<b>pH:</b>	4.4 - 4.5 @ 22°C (5% in water)
<b>SOLUBILITY IN WATER:</b>	Emulsifies
<b>SPECIFIC GRAVITY:</b>	1.04 (water = 1)

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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

**HAZARDOUS DECOMPOSITION PRODUCTS:** Carbon monoxide, carbon dioxide, hydrogen cyanide, chlorine and hydrogen chloride.

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## 11. TOXICOLOGICAL INFORMATION

**EYE EFFECTS:** Mildly irritating

**SKIN EFFECTS:** Slightly irritating

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

**ORAL LD<sub>50</sub>:** 234 mg/kg (rat)

**INHALATION LC<sub>50</sub>:** > 0.89 mg/l (4 h) (rat)

**ACUTE EFFECTS FROM OVEREXPOSURE:** This product has moderate oral, and low dermal and inhalation toxicity. It is mildly irritating to the eyes, and slightly irritating to the skin. Signs of toxicity in laboratory animals included tremors, decreased locomotion, rales, tonic-clonic convulsions, and oral discharge. 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. In humans, ingestion of large amounts of propylene glycol has resulted in symptoms of reversible central nervous system depression including stupor, rapid breathing and heartbeat, profuse sweating and seizures.

**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. Repeated overexposure to propylene glycol can produce central nervous system depression, hemolysis and minimal kidney damage.

### CARCINOGENICITY:

<b>NTP:</b>	Not listed
<b>IARC:</b>	Not listed
<b>OSHA:</b>	Not listed
<b>OTHER:</b>	(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.

## 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>PROPER SHIPPING NAME:</b>	Pyrethroid pesticide, liquid, toxic
<b>TECHNICAL NAME(S):</b>	Zeta-cypermethrin
<b>PRIMARY HAZARD CLASS / DIVISION:</b>	6.1
<b>UN/NA NUMBER:</b>	UN 3352
<b>PACKING GROUP:</b>	III
<b>MARINE POLLUTANT:</b>	Zeta-cypermethrin
<b>ADDITIONAL INFORMATION:</b>	Marine Pollutant mark is not required unless shipped by vessel.
<b>PACKAGING TYPE:</b>	Bulk
<b>PROPER SHIPPING NAME:</b>	Pyrethroid pesticide, liquid, toxic
<b>TECHNICAL NAME(S):</b>	Zeta-cypermethrin

**PRIMARY HAZARD CLASS / DIVISION:** 6.1  
**UN/NA NUMBER:** UN 3352  
**PACKING GROUP:** III  
**MARINE POLLUTANT:** Zeta-cypermethrin

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

**PROPER SHIPPING NAME:** Pyrethroid pesticide, liquid, toxic  
**TECHNICAL NAME(S):** Zeta-cypermethrin  
**PRIMARY HAZARD CLASS / DIVISION:** 6.1  
**UN/NA NUMBER:** UN 3352  
**PACKING GROUP:** III  
**MARINE POLLUTANT:** Zeta-cypermethrin  
**ADDITIONAL INFORMATION:** EmS Number: F-A, S-A

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

**PROPER SHIPPING NAME:** Pyrethroid pesticide, liquid, toxic  
**TECHNICAL NAME(S):** Zeta-cypermethrin  
**PRIMARY HAZARD CLASS / DIVISION:** 6.1  
**CLASSIFICATION CODE:** T6  
**UN/NA NUMBER:** UN3352  
**PACKING GROUP:** III  
**HAZARD IDENTIFICATION NUMBER:** 60  
**ADDITIONAL INFORMATION:** Environmentally Hazardous Substance:  
Zeta-cypermethrin

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

**PROPER SHIPPING NAME:** Pyrethroid pesticide, liquid, toxic  
**TECHNICAL NAME(S):** Zeta-cypermethrin  
**PRIMARY HAZARD CLASS / DIVISION:** 6.1  
**UN/NA NUMBER:** UN3352

**PACKING GROUP:** III  
**LABEL(S):** 6.1  
**ADDITIONAL INFORMATION:** Environmentally hazardous substance mark may be required depending on packaging and country of destination.

**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, 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):**  
Not listed

**FEDERAL INSECTICIDE FUNGICIDE RODENTICIDE ACT**  
U.S. EPA Signal Word: WARNING

### HAZARD AND RISK PHRASE DESCRIPTIONS:

EC Symbols: Xn (Harmful)  
N (Dangerous for the environment)

EC Risk Phrases:                    R20/22 (Harmful by inhalation and if swallowed.)  
    R43     (May cause sensitization by skin contact.)  
    R50     (Very toxic to aquatic organisms.)

## 16. OTHER INFORMATION

### NFPA

Health	2
Flammability	1
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 #10, dated May 28, 2009.

Changes in information are as follows:

Section 14 (Transport Information)

Section 16 (Other Information)

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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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