

MATERIAL SAFETY DATA SHEET

MustangMAX™ Insecticide



MSDS Ref. No: 52315-07-8-52

Version: Global

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Revision No: 7

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: MustangMAX™ Insecticide

PRODUCT CODE: 6084

ACTIVE INGREDIENT: Zeta-cypermethrin (2S)

CHEMICAL FAMILY: Pyrethroid Pesticide

MOLECULAR FORMULA: C₂₂H₁₉CL₂NO₃ (zeta-cypermethrin)

SYNONYMS: FMC 291799; (S)-Cyano-(3-phenoxyphenyl)methyl (+)cis-3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate and (S)-cyano-(3-phenoxyphenyl)methyl (+)trans-3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate

MANUFACTURER

FMC CORPORATION
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Emergency Telephone Numbers:

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(U.S.A. & Canada)

Emergency Phone (FMC) 716-735-3765
(Reverse charges)

CHEMTREC (U.S.): (800) 424-9300
(U.S.A. & Canada)
(202) 483-7616 (All other countries)

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS#</u>	<u>Wt.%</u>	<u>PEL/TLV</u>	<u>EC No.</u>	<u>EC Class</u>
Zeta-cypermethrin (2S)	052315-07-8	9.6	None	None	None
Aromatic Hydrocarbons	64742-95-6	<32.1	100 ppm (supplier)	650-001-00-0	R45, 65
Surfactant Blend	0000-00-0	<6.5	None	None	None
Naphthalene	91-20-3	<5.2	10 ppm 15 ppm STEL	202-049-5	R49; R22-50/53
1-butanol	71-36-3	<1	50 ppm (skin) (ceiling)	603-004-00-6	R10-20

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

IMMEDIATE CONCERNS:

- Brown liquid with an aromatic solvent odor.
- Moderately combustible. May support combustion if heated above the product's flash point (see Section 5, "Fire Fighting Measures" below).
- 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 irritating if swallowed and moderately irritating to the skin.

POTENTIAL HEALTH EFFECTS: Effects from overexposure result from either swallowing or inhaling this product. Symptoms of overexposure include tremors, convulsions, increased sensitivity to touch, 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.

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 has moderate oral, and low dermal and inhalation toxicity. It is moderately irritating to the skin and mildly irritating to the eyes. Contains aromatic hydrocarbons 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

FLASH POINT AND METHOD: >98°C (>208°F) (TCC)

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

FIRE / EXPLOSION HAZARDS: Moderately combustible. When heated above the flash point, this material releases vapors which, when mixed with air, can burn or be explosive.

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.

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

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 spill area, tools and equipment, wash with a suitable solution of caustic or soda ash, and an appropriate alcohol (i.e., methanol, ethanol or isopropanol). Follow this by washing with a strong soap and water solution. Absorb, as above, any

excess liquid and add to the drums of waste already collected. Repeat if necessary. Dispose of drummed waste according to the method outlined in Section 13, "Disposal Considerations".

7. HANDLING AND STORAGE

GENERAL PROCEDURES: 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 redissolve. 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

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 exposure 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).

WORK HYGIENIC PRACTICES: Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking or using tobacco. Shower at the end of the workday.

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.

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

ODOR: Aromatic solvent

APPEARANCE: Brown liquid

pH: 3.9

SOLUBILITY IN WATER: Emulsifies

SPECIFIC GRAVITY: 1.0 g/mL @ 20°C

MOLECULAR WEIGHT: 416.3 (zeta-cypermethrin)

WEIGHT PER VOLUME: 8.3 lb/gal. (1000 g/L)

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Excessive heat and fire.

STABILITY: Stable

POLYMERIZATION: Will not occur

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS: Mildly irritating (rabbit)

SKIN EFFECTS: Moderately irritating (rabbit)

DERMAL LD₅₀: >5000 mg/kg (rat)

ORAL LD₅₀: 157 mg/kg (rat)

INHALATION LC₅₀: 3.3 mg/L/4 hr (rat)

SENSITIZATION: This product is not a skin sensitizer.

ACUTE EFFECTS FROM OVEREXPOSURE: This product has moderate oral, and low dermal and inhalation toxicity. It is moderately irritating to the skin and mildly irritating to the 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. 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. Naphthalene, if ingested, may cause red blood cell hemolysis, especially in individuals with glucose-6-phosphate dehydrogenase deficiency.

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. In 2-year inhalation studies conducted by the National Toxicology Program (NTP), there was no evidence of carcinogenic activity of naphthalene in male mice exposed to 10 or 30 ppm. There was some evidence of carcinogenic activity in female mice, based on increased incidences of pulmonary alveolar / bronchiolar adenomas. In another 2-year inhalation study conducted by the NTP, there was clear evidence of carcinogenic activity in male and female rats based on increased incidences of respiratory epithelial adenoma and olfactory epithelial neuroblastoma of the nose. The International Agency for Research on Cancer (IARC) has evaluated naphthalene and found that in inhalation studies in rodents, naphthalene caused an increase in the incidence of bronchio-alveolar adenomas in female mice, and of neuroblastomas of the olfactory epithelium and adenomas of the nasal respiratory epithelium in male and female rats. No relevant data were available on the carcinogenicity of naphthalene to humans; however, IARC has classified naphthalene as a Group 2B (possible human carcinogen). Disturbances in hearing and balance have been reported in workers exposed to butanol vapors.

<u>Chemical Name</u>	<u>NTP Status</u>	<u>IARC Status</u>	<u>OSHA Status</u>	<u>Other</u>
Naphthalene	Listed	Listed	Not listed	Not listed (ACGIH)

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 = 17) and is not mobile in soil.

ECOTOXICOLOGICAL INFORMATION: Zeta-cypermethrin is considered highly toxic to fish and aquatic arthropods and has LC50 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 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 which 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

SPECIAL SHIPPING NOTES:

U.S. DEPARTMENT OF TRANSPORTATION (DOT):

Non-bulk Packages:

Proper Shipping Name: Pyrethroid pesticide, liquid, toxic

Technical Name: zeta-cypermethrin

Class or Division: 6.1

ID Number: UN3352

Packing Group: III

Reportable Quantity (RQ): Not listed

Marine Pollutant: zeta-cypermethrin 9.6%

Label(s): Toxic, 6

Placards: Toxic, 3352, 6

Marking: Pyrethroid pesticide, liquid, toxic (zeta-cypermethrin), UN3352

ERG No.: 151

Notes: Marine pollutants are not regulated in the USA when in non-bulk packages and transportation is other than by water.

Bulk Packages:

Proper Shipping Name: Pyrethroid pesticide, liquid, toxic

Technical Name: zeta-cypermethrin

Class or Division: 6.1

ID Number: UN3352

Packing Group: III

Reportable Quantity (RQ): Naphthalene

Marine Pollutant: zeta-cypermethrin 9.6%

Label(s): Toxic, 6

Placards: Toxic, 3352, 6

Marking: Pyrethroid pesticide, liquid, toxic (zeta-cypermethrin), UN3352, RQ (naphthalene)

ERG No.: 151

Notes: Depending on the bulk package used, it is necessary to select either placarding or labeling - never do both.

INTERNATIONAL MARITIME DANGEROUS GOODS CODE:

Substance or Article: Pyrethroid pesticide, liquid, toxic

Technical Name(s): zeta-cypermethrin

Class or Division: 6.1

ID Number: UN3352

Packing Group: III

Reportable Quantity (RQ): Not listed

Marine Pollutant(s): zeta-cypermethrin 9.6%

Label(s): Toxic, 6

Placard(s): Toxic, 3352, 6

Mark(s): Pyrethroid pesticide, liquid, toxic (zeta-cypermethrin 9.6%), UN3352, MARINE POLLUTANT

EmS No.: 6.1-02

Flash Point: <98°C

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

UN Number: UN3352

Name and Description: Pyrethroid pesticide, liquid, toxic

Technical Name(s): zeta-cypermethrin

Class or Division: 6.1

Classification Code: T6

Packing Group: III

Label(s): Toxic, 6

Marine Pollutant: zeta-cypermethrin 9.6%

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

Proper Shipping Name: Pyrethroid, pesticide, liquid, toxic (zeta-cypermethrin)

Class or Division: 6.1

UN or ID Number: UN3352

Packing Group: III

Packing Instruction:

Ltd. Qty: Y611/2L

Passenger and Cargo: 611/60L

Cargo Aircraft Only: 618/220L

HARMONIZED SYSTEM:

Import to the U.S.A.: 3808.10.2500

Export from the U.S.A.: 3808.10.0000

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

**SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR
355):** 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. 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 contains the following ingredients subject to Section 313 reporting
requirements: (naphthalene)

**CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE
COMPENSATION AND LIABILITY ACT):** Listed.

<u>Chemical Name</u>	<u>Wt.%</u>	<u>RQ</u>
Naphthalene	<5.2	100 lbs.
1-butanol	<1	5000 lbs.

COMMENTS:

Australian Hazard Code : 3XE

U.S. EPA Signal Word : WARNING

16. OTHER INFORMATION**REVISION SUMMARY**

This MSDS replaces Revision #6, dated November 20, 2002. Changes in information are as follows:

Section 1 (Product and Company Identification)

Section 2 (Composition / Information on Ingredients)

Viton - E.I. du Pont de Nemours and Co. Trademark;
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