

# MATERIAL SAFETY DATA SHEET

## MUSTANG® 25 g/L EC INSECTICIDE

Revision Date: 2012-11-25



This MSDS has been prepared to meet 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>	MUSTANG® 25 EC INSECTICIDE
<b>Active Ingredient(s)</b>	Zeta-cypermethrin
<b>Alternate Commercial Name</b>	FURY® 25 EC
<b>Synonyms</b>	FMC 56701; A mixture of the stereoisomers (S)- $\alpha$ -cyano-3-phenoxybenzyl (1RS,3RS;1RS,3SR)-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate where the ratio of the (S):(1RS,3RS) isomeric pair to the (S):(1RS,3SR) isomeric pair lies in the ratio range 45–55 to 55–45; (S)-cyano(3-phenoxyphenyl)methyl ( $\pm$ )-cis-trans-3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate
<b>Chemical Family</b>	Pyrethroid Pesticide
<b><u>Manufacturer</u></b>	<b>Emergency telephone number</b>
FMC Corporation Agricultural Products Group 1735 Market Street Philadelphia, PA 19103 General Information: Phone: (215) 299-6000 E-mail: <a href="mailto:msdsinfo@fmc.com">msdsinfo@fmc.com</a>	Medical Emergencies: (800) 331-3148 (U.S.A. & Canada) +1 (651) 632-6793 (All Other Countries – Collect) For leak, fire, spill or accident emergencies, call: +1 800 / 424 9300 (CHEMTREC – U.S.A.) +1 703 / 527 3887 (CHEMTREC – Collect – All Other Countries)

### 2. HAZARDS IDENTIFICATION

<b><u>Appearance</u></b>	Yellow liquid
<b><u>Physical state</u></b>	Liquid
<b><u>Odor</u></b>	Hydrocarbon-like
<b><u>Physical or Chemical Hazards</u></b>	
<b><u>Flammable properties</u></b>	Combustible liquid
<b><u>Potential health effects</u></b>	
<b>Acute effects</b>	
<b>Eyes</b>	May cause slight irritation
<b>Skin</b>	Irritating to skin
<b>Inhalation</b>	Toxic by inhalation. May cause irritation of respiratory tract. May cause drowsiness and

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dizziness.

<b>Ingestion</b>	Harmful if swallowed. Potential for aspiration if swallowed. May cause central nervous system depression.
<b>Chronic effects</b>	Repeated or prolonged exposure may cause central nervous system effects. May cause adverse liver effects. May cause adverse kidney effects.
<b><u>Environmental hazard</u></b>	Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

### Hazardous ingredients

Chemical Name	CAS No	Weight %
Aromatic Hydrocarbons	Proprietary	> 80
Zeta-cypermethrin	52315-07-8	2.8

## 4. FIRST AID MEASURES

<b>Eye contact</b>	Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.
<b>Skin contact</b>	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
<b>Inhalation</b>	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
<b>Ingestion</b>	Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not induce vomiting or give anything by mouth to an unconscious person.
<b>Notes to physician</b>	Contains petroleum distillate. Vomiting may cause aspiration pneumonia. This product is a pyrethroid. If large amounts have been ingested, the stomach and intestines should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and so should be avoided.

## 5. FIRE-FIGHTING MEASURES

<b><u>Flammable properties</u></b>	Combustible liquid
<b>Flash Point Method</b>	> 82 °C /180 °F Tag closed cup
<b>Sensitivity to Mechanical Impact</b>	Not applicable
<b>Sensitivity to Static Discharge</b>	Not applicable
<b>Suitable extinguishing media</b>	Foam. Carbon dioxide (CO <sub>2</sub> ), Dry chemical, Soft stream or water fog only if necessary.
<b>Protective equipment and precautions for firefighters</b>	Wear self-contained breathing apparatus and protective suit.

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## NFPA

Health Hazard	2
Flammability	2
Stability	0
Special Hazards	-

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions</b>	Isolate and post spill area. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see section 8.
<b>Environmental precautions</b>	Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains.
<b>Methods for containment</b>	Dike to prevent runoff. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
<b>Methods for cleaning up</b>	Clean and neutralize spill area, tools and equipment by washing with bleach water and soap. Absorb rinsate and add to the collected waste. Waste must be classified and labeled prior to recycling or disposal. Dispose of waste as indicated in Section 13.
<b>Other</b>	For further clean-up instructions call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.

## 7. HANDLING AND STORAGE

<b>Handling</b>	Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.
<b>Storage</b>	Keep in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep out of reach of children and animals. Store in original container only.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure guidelines** This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

### **Occupational exposure controls**

**Engineering measures** Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

### **Personal Protective Equipment**

**General Information** If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers. These recommendations apply to the product as supplied.

**Respiratory protection** For dust, splash, mist or spray exposures wear a filtering mask.

**Eye/Face protection** For dust, splash, mist or spray exposure, wear chemical protective goggles or a face-shield.

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<b>Skin and body protection</b>	Wear long-sleeved shirt, long pants, socks, shoes, and gloves.
<b>Hand protection</b>	Protective gloves
<b>Hygiene measures</b>	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 or bathe at the end of working. Remove and wash contaminated clothing before re-use. Launder work clothing separately from regular household laundry.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Yellow liquid
<b>Color</b>	Yellow
<b>Physical state</b>	Liquid
<b>Odor</b>	Hydrocarbon-like
<b>pH</b>	4.2 – 4.3 @ 22 °C
<b>Melting Point/Range</b>	No information available
<b>Freezing point</b>	No information available
<b>Boiling Point/Range</b>	Not applicable
<b>Flash Point</b>	82 °C / 180 °F Tag closed cup
<b>Evaporation rate</b>	Not applicable
<b>Autoignition Temperature</b>	Not applicable
<b>Flammable properties</b>	Combustible liquid
<b>Vapor pressure</b>	No information available
<b>Vapor density</b>	No information available
<b>Density</b>	8.24 lb/gal
<b>Specific Gravity</b>	0.996
<b>Water solubility</b>	Emulsifies
<b>Percent volatile</b>	No information available
<b>Partition coefficient</b>	Not applicable
<b>Viscosity</b>	No information available
<b>Oxidizing properties</b>	Not applicable

### 10. STABILITY AND REACTIVITY

<b>Stability</b>	Stable
<b>Conditions to avoid</b>	Heat, flames and sparks
<b>Hazardous decomposition products</b>	Carbon oxides. Hydrogen chloride. Hydrogen fluoride
<b>Hazardous polymerization</b>	Hazardous polymerization does not occur.

### 11. TOXICOLOGICAL INFORMATION

<b><u>Acute Toxicity</u></b>	Signs of toxicity in laboratory animals included tremors, tonic-clonic convulsions, loss of muscle control, rales, bloody oral discharge, hypersensitivity to touch and ataxia
<b>Eye contact</b>	May cause slight irritation

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<b>Skin contact</b>	Irritation to skin
<b>Ingestion</b>	Potential for aspiration if swallowed. Vomiting after ingestion of this product may cause aspiration of aromatic hydrocarbons into the lungs, which may result in fatal pulmonary edema.
<b>Inhalation</b>	Inhalation of aromatic hydrocarbon vapors may cause dizziness, disturbances in vision, drowsiness, respiratory irritation, and eye, skin and mucous membrane irritation.
<b>LD<sub>50</sub> Oral</b>	278 mg/kg (rat)
<b>LD<sub>50</sub> Dermal</b>	> 2,000 mg/kg (rabbit)
<b>LC<sub>50</sub> Inhalation</b>	> 1.36 mg/L 4 hr (rat)
<b>Sensitization</b>	May cause sensitization by skin contact

### Chronic Toxicity – Other Ingredients(s)

<b>Chronic Toxicity</b>	Repeated or prolonged exposure may cause central nervous system effects. Chronic exposure to aromatic hydrocarbons may cause headaches, dizziness, loss of sensations or feelings (such as numbness), and liver and kidney damage.
<b>Carcinogenicity</b>	Cypermethrin cause an increase in benign lung tumors in mice, but not in rats, and was negative for genotoxicity. EPA has classified Zeta-cypermethrin as a possible human carcinogen based on this information, but does not regulate based on its low cancer risk. Not recognized as carcinogenic by Research Agencies (IARC, NTP, OSHA, ACGIH).
<b>Mutagenicity</b>	Zeta-cypermethrin: Not genotoxic
<b>Reproductive toxicity</b>	Zeta-cypermethrin: No toxicity to reproduction
<b>Neurological Effects</b>	Cypermethrin is known to induce neuromuscular effects (i.e. gait abnormalities, tremors, reduced motor activity, changes in functional observation battery parameters and convulsions) in mammals, but does not generally induce neuropathologic lesions. These clinical signs occurred following an acute exposure and appeared to be transient in nature. Effects occurred via oral and inhalation exposure but not by the dermal exposure route.
<b>Developmental Toxicity</b>	Zeta-cypermethrin: Not teratogenic in animal studies.

## 12. ECOLOGICAL INFORMATION

**Marine pollutant** Zeta-cypermethrin

### Ecotoxicity

#### Zeta-cypermethrin (52315-07-8)

Active Ingredient(s)	Duration	Species	Value	Units
Zeta-cypermethrin	EC <sub>50</sub>	Aquatic organisms	0.005 – 0.15	µg/L
	96h LC <sub>50</sub>	Fish	0.07 – 2.37	µg/L
	LD <sub>50</sub> Oral	Bobwhite quail	> 2000	mg/kg
	LD <sub>50</sub>	Bee	0.0014 – 0.043	mg/kg

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Aromatic hydrocarbons	2.5 mg/L EC <sub>50</sub> 72h (Skeletonema costatum)	LC <sub>50</sub> 19 mg/L Pimephales promelas 96h LC <sub>50</sub> 2.34		EC <sub>50</sub> 0.95 mg/L 48h

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		mg/L Oncorhynchus mykiss 96h LC <sub>50</sub> 1740 mg/L Lepomis macrochirus 96h LC <sub>50</sub> 45 mg/L Pimephales promelas 96h LC <sub>50</sub> 41 mg/L Pimephales promelas 96h		
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## Environmental Fate

### Zeta-cypermethrin (52315-07-8)

Active Ingredient(s)	Type of Test	Result
Zeta-cypermethrin	Bioconcentration factor (BCF)	443
	Half-life in soil	2-4 weeks
	log Pow	5
	Mobility in soil	Not expected to reach groundwater
	Stability in water	Hydrolysis unstable at pH 9, half life 20-29 days at pH 5 and 7

Chemical Name	low Pow
Aromatic hydrocarbons	2.9 – 6.1

## 13. DISPOSAL CONSIDERATIONS

### Waste disposal methods

Improper disposal of excess pesticide, spray mixture, or rinsate is prohibited. If these wastes cannot be disposed of by use according to label instructions, contact appropriate disposal authorities for guidance.

### Contaminated packaging

Containers must be disposed of in accordance with local, state and federal regulations. Refer to the product label for container disposal instructions.

## 14. TRANSPORT INFORMATION

### DOT

<b>Packaging Type</b>	Bulk, Non-Bulk
<b>Proper shipping name</b>	Combustible liquid, n.o.s.
<b>Hazard Class</b>	Combustible
<b>UN/ID No</b>	NA1993
<b>Packing group</b>	III
<b>Marine pollutant</b>	Zeta-cypermethrin

### TDG

	Classification below is only applicable when shipped by vessel and is not applicable when shipped by road or rail only.
<b>Proper shipping name</b>	Environmentally hazardous substance, liquid, n.o.s.
<b>Hazard Class</b>	9
<b>UN/ID No</b>	UN 3082
<b>Packing group</b>	III
<b>Marine pollutant</b>	Zeta-cypermethrin
<b>Description</b>	UN 3082, Environmentally hazardous substance, liquid, n.o.s. (zeta-cypermethrin), 9 PG III, Marine pollutant

### ICAO/IATA

<b>UN/ID No</b>	UN 3082
<b>Proper shipping name</b>	Environmentally hazardous substance, liquid, n.o.s.
<b>Hazard Class</b>	9
<b>Packing group</b>	III
<b>Marine pollutant</b>	Zeta-cypermethrin

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**Description** UN 3082, Environmentally hazardous substance, liquid, n.o.s. (zeta-cypermethrin), 9 PG III  
**Limited quantity** 30 kg G

## IMDG/IMO

**Proper shipping name** Environmentally hazardous substance, liquid, n.o.s.  
**Hazard Class** 9  
**UN/ID No** UN 3082  
**Packing group** III  
**EmS No.** F-A, S-F  
**Marine pollutant** Zeta-cypermethrin

## 15. REGULATORY INFORMATION

### U.S. Federal Regulations

#### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

#### **SARA 311/312 Hazard Categories**

<b>Acute health hazard</b>	Yes
<b>Chronic Health hazard</b>	Yes
<b>Fire Hazard</b>	Yes
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	No

#### **CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

### International Regulations

**Mexico – Grade** Moderate risk, Grade 2

#### Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**WHMIS Hazard Class** B3 Combustible liquid  
D1B Toxic materials  
D2B Toxic materials



## 16. OTHER INFORMATION

**Revision Date:** 2012-11-25  
**Reason for revision:** (M)SDS sections updated

## MUSTANG® 25 EC INSECTICIDE

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