

Material Safety Data Sheet

MustangMAX™ Insecticide

SDS #: 6209-A
Revision Date: 2012-03-25
Version 1



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

Product name	MustangMAX™ Insecticide
Formula code	6084, 6209
Active Ingredient(s)	Zeta-cypermethrin (2S)
Synonyms	FMC 233570; (+/-)- α -cyano(3-phenoxyphenyl)methyl (+/-) cis, trans-3-(2,2-dichloroethenyl)-2,2-dimethylcyclopropanecarboxylate; IUPAC: (RS)- α -cyano-3-phenoxybenzyl (1RS)-cis-trans-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate
Chemical Family	Pyrethroid Pesticide
Manufacturer FMC Corporation Agricultural Products Group 1735 Market Street Philadelphia, PA 19103 General Information: Phone: (215) 299-6000 E-Mail: msdsinfo@fmc.com	Emergency telephone number 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

Appearance	brown liquid
Physical state	liquid
Odor	hydrocarbon-like
Potential health effects	
Acute effects	
Eyes	Irritating to eyes.
Skin	Irritating to skin.
Inhalation	Toxic by inhalation. May cause irritation of respiratory tract. May cause drowsiness and dizziness.
Ingestion	Harmful if swallowed. Potential for aspiration if swallowed. May cause central nervous system depression.
Chronic effects	Repeated or prolonged exposure may cause central nervous system effects. Chronic exposure to aromatic hydrocarbons may cause liver and kidney damage.
Environmental hazard	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 %
Naphtha (petroleum), heavy aromatic	64742-94-5	40-50
hydrotreated light paraffinic oil	64742-55-8	20-30
2-Methylnaphthalene	91-57-6	<17
1-Methylnaphthalene	90-12-0	<11
Zeta-cypermethrin	52315-07-8	9.6

4. First aid measures

Eye contact	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.
Skin contact	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.
Inhalation	Move 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.
Ingestion	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 give anything by mouth to an unconscious person.
Notes to physician	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. Contains petroleum distillate. Vomiting may cause aspiration pneumonia.

5. Fire-fighting measures

Flash Point	> 98 °C / > 208 °F
Method	Tag Closed Cup
Sensitivity to Mechanical Impact	not applicable
Sensitivity to Static Discharge	not applicable
Suitable extinguishing media	Foam, Carbon dioxide (CO ₂), Dry chemical, Soft stream or water fog only if necessary.
Protective equipment and precautions for firefighters	Wear self-contained breathing apparatus and protective suit.

NFPA

Health Hazard	2
Flammability	1
Stability	0
Special Hazards	-

6. Accidental release measures

Personal precautions	Isolate and post spill area. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see section 8.
Environmental precautions	Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains.

Methods for containment	Dike to prevent runoff. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
Methods for cleaning up	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.
Other	For further clean-up instructions call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.

7. Handling and storage

Handling	Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.
Storage	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

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH	Mexico
2-Methylnaphthalene 91-57-6	S* TWA: 0.5 ppm			
1-Methylnaphthalene 90-12-0	S* TWA: 0.5 ppm			

Chemical Name	British Columbia	Quebec	Ontario TWAEV	Alberta
2-Methylnaphthalene 91-57-6	TWA: 0.5 ppm Skin		TWA: 0.5 ppm Skin	
1-Methylnaphthalene 90-12-0	TWA: 0.5 ppm Skin		TWA: 0.5 ppm Skin	

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.
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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.
Skin and body protection	Wear long-sleeved shirt, long pants, socks, shoes, chemical-resistant gloves and headgear.
Hand protection	Rubber/latex/neoprene or other suitable chemical resistant gloves.

Hygiene measures	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.
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9. Physical and chemical properties

Appearance	brown liquid
Color	brown
Physical state	liquid
Odor	hydrocarbon-like
pH	3.9
Melting Point/Range	No information available.
Freezing point	No information available
Boiling Point/Range	not applicable
Flash Point	> 98 °C / > 208 °F Tag Closed Cup
Evaporation rate	not applicable
Autoignition Temperature	not applicable
Vapor pressure	No information available
Vapor density	No information available
Density	8.32 lb/gal
Specific Gravity	1 @ 20 °C
Water solubility	Emulsifies
Percent volatile	No information available
Partition coefficient:	not applicable
Viscosity	No information available
Oxidizing properties	not applicable

10. Stability and reactivity

Stability	Stable
Conditions to avoid	Excessive heat.
Hazardous decomposition products	Carbon oxides, Hydrogen cyanide, Hydrogen chloride, Chlorine.
Hazardous polymerization	Hazardous polymerization does not occur

11. Toxicological information

Acute Toxicity

Signs of toxicity in laboratory animals included tremors, tonic - clonic convulsions, loss of muscle control, rales, bloody oral discharge, hypersensitivity to touch and ataxia.

Eye contact	Slightly or non-irritating (rabbit)
Skin contact	Moderately irritating (rabbit).
Ingestion	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.
Inhalation	Inhalation of aromatic hydrocarbon vapors may cause dizziness, disturbances in vision, drowsiness, respiratory irritation, and eye, skin and mucous membrane irritation.
LD50 Dermal	> 5,000 mg/kg (rat)
LD50 Oral	157 mg/kg (rat)
LC50 Inhalation:	3.3 mg/L 4 hr (rat)
Sensitization	Non-sensitizing.

Chronic Toxicity - Other Ingredient(s)

Chronic Toxicity Repeated or prolonged exposure may cause central nervous system effects. Chronic exposure to aromatic hydrocarbons may cause liver and kidney damage.

Carcinogenicity	Not recognized as carcinogenic by Research Agencies (IARC, NTP, OSHA, ACGIH). Cypermethrin caused 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.
Mutagenicity	Zeta-cypermethrin: Not genotoxic.
Reproductive toxicity	Zeta-cypermethrin: No toxicity to reproduction.
Neurological Effects	Cypermethrin did not cause neurotoxicity in animal experiments.
Developmental Toxicity	Zeta-cypermethrin: Not teratogenic in animal studies.
Chronic Toxicity - Other Ingredient(s)	Chronic exposure to aromatic hydrocarbons may cause headaches, dizziness, loss of sensations or feelings (such as numbness), and liver and kidney damage. The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3 % DMSO extract as measured by IP 346. The oil present in this product is highly refined and is not expected to contain DMSO at concentrations >3%.

Chemical Name	ACGIH	IARC	NTP	OSHA	NIOSH - Target Organs
hydrotreated light paraffinic oil	A2	1		X	

ACGIH: (American Conference of Governmental Industrial Hygienists)

A2 - Suspected Human Carcinogen

IARC: (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

OSHA: (Occupational Safety & Health Administration)

X - Present

12. Ecological information

Marine pollutant Zeta-cypermethrin
Ecotoxicity

Zeta-cypermethrin (52315-07-8)

Active Ingredient(s)	Duration	Species	Value	Units
Zeta-cypermethrin	LC50	Aquatic organisms	0.005 - 0.15	µg/L
	LC50	Fish	0.07 - 2.37	µg/L
	LD50 Oral	Bobwhite quail	>2000	mg/kg
	LD50	Bee	0.0014 - 0.043	µg/bee

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Naphtha (petroleum), heavy aromatic	2.5 mg/L EC50 72 h (Skeletonema costatum)	LC50 19 mg/L Pimephales promelas 96 h LC50 2.34 mg/L Oncorhynchus mykiss 96 h LC50 1740 mg/L Lepomis macrochirus 96 h LC50 45 mg/L Pimephales promelas 96 h LC50 41 mg/L Pimephales promelas 96 h		EC50 0.95 mg/L 48 h
hydrotreated light paraffinic oil		LC50 > >5000 mg/L Oncorhynchus mykiss 96 h		EC50 > >1000 mg/L 48 h

Environmental Fate

Zeta-cypermethrin (52315-07-8)

Active Ingredient(s)	Type of Test	Result
Zeta-cypermethrin	Bioconcentration factor (BCF), Bluefill sunfish (Lepomis macrochirus)	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	log Pow
Naphtha (petroleum), heavy aromatic	2.9 - 6.1
2-Methylnaphthalene	3.86

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**

Packaging Type	Bulk, Non-Bulk
Proper shipping name	Pyrethroid pesticide, liquid, toxic
Hazard Class	6.1
UN/ID No	UN3352
Packing group	III
Marine pollutant	Zeta-cypermethrin
Description	UN3352, Pyrethroid pesticide, liquid, toxic (Zeta-cypermethrin (2s)), 6.1, PG III, Marine Pollutant
Additional information	Marine Pollutant mark is applicable to BULK packages only.

TDG

Proper shipping name	Pyrethroid pesticide, liquid, toxic
Hazard Class	6.1
UN/ID No	UN3352
Packing group	III
Marine pollutant	Zeta-cypermethrin.
Description	UN3352, Pyrethroid pesticide, liquid, toxic (Zeta-cypermethrin (2s)), 6.1, PG III, Marine Pollutant

ICAO/IATA

UN/ID No	UN3352
Proper shipping name	Pyrethroid pesticide, liquid, toxic
Hazard Class	6.1
Packing group	III
Marine pollutant	Zeta-cypermethrin
Description	UN3352, Pyrethroid pesticide, liquid, toxic (Zeta-cypermethrin (2s)), 6.1, PG III, Marine Pollutant

IMDG/IMO

Proper shipping name	Pyrethroid pesticide, liquid, toxic
Hazard Class	6.1
UN/ID No	UN3352

Packing group	III
EmS No.	F-A, S-A
Marine pollutant	Zeta-cypermethrin
Description	UN3352, Pyrethroid pesticide, liquid, toxic (Zeta-cypermethrin (2s)), 6.1, PG III, Marine Pollutant

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 does not contain any 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

Acute Health Hazard	yes
Chronic Health Hazard	yes
Fire Hazard	no
Sudden Release of Pressure Hazard	no
Reactive Hazard	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.

TSCA Inventory (United States of America)

Chemical Name	U.S. - TSCA (Toxic Substances Control Act) - Section 8(a) - Chemical-Specific Reporting and Recordkeeping
Naphtha (petroleum), heavy aromatic	Partially exempt chemical substance termed Petroleum Process Stream
hydrotreated light paraffinic oil	Partially exempt chemical substance termed Petroleum Process Stream

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

D1B Toxic materials
D2B Toxic materials



16. Other information

Revision Date: 2012-03-25
Reason for revision: (M)SDS sections updated.

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End of Material Safety Data Sheet