Material Safety Data Sheet
MustangMAX™ Insecticide

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-dichloroethyl)-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
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 Method: > 98 °C / > 208 °F Tag Closed Cup

Sensitivity to Mechanical Impact: not applicable
Sensitivity to Static Discharge: not applicable

Suitable extinguishing media: Foam, Carbon dioxide (CO₂), 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.
MustangMAX™ Insecticide

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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methylnaphthalene</td>
<td>S*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>91-57-6</td>
<td>TWA: 0.5 ppm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-Methylnaphthalene</td>
<td>S*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>90-12-0</td>
<td>TWA: 0.5 ppm</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>British Columbia</th>
<th>Quebec</th>
<th>Ontario TWAEV</th>
<th>Alberta</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methylnaphthalene</td>
<td>TWA: 0.5 ppm</td>
<td>Skin</td>
<td>TWA: 0.5 ppm</td>
<td></td>
</tr>
<tr>
<td>91-57-6</td>
<td></td>
<td></td>
<td>Skin</td>
<td></td>
</tr>
<tr>
<td>1-Methylnaphthalene</td>
<td>TWA: 0.5 ppm</td>
<td>Skin</td>
<td>TWA: 0.5 ppm</td>
<td></td>
</tr>
<tr>
<td>90-12-0</td>
<td></td>
<td></td>
<td>Skin</td>
<td></td>
</tr>
</tbody>
</table>

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.

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.
9. Physical and chemical properties

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

10. Stability and reactivity

Stability: Stable

Conditions to avoid: Excessive heat.


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.
MustangMAX™ Insecticide

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%.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
<th>NIOSH - Target Organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>hydrotreated light parrafinic oil</td>
<td>A2</td>
<td>1</td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Active Ingredient(s)</th>
<th>Duration</th>
<th>Species</th>
<th>Value</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zeta-cypermethrin</td>
<td>LC50</td>
<td>Aquatic organisms</td>
<td>0.005 - 0.15</td>
<td>µg/L</td>
</tr>
<tr>
<td></td>
<td>LC50</td>
<td>Fish</td>
<td>0.07 - 2.37</td>
<td>µg/L</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Bobwhite quail</td>
<td>&gt;2000</td>
<td>mg/kg</td>
</tr>
<tr>
<td></td>
<td>LD50</td>
<td>Bee</td>
<td>0.0014 - 0.043</td>
<td>µg/bee</td>
</tr>
</tbody>
</table>

Environmental Fate
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
MustangMAX™ Insecticide

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)

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

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.