

**SAFETY DATA SHEET**  
Disarm M Fungicide

SDS #: FO001138-A  
Revision date: 2016-05-26  
Format: NA  
Version 1.02



**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product Identifier**

**Product Name** Disarm M Fungicide

**Other means of identification**

**Product Code(s)** FO001138-A

**Synonyms** FLUOXASTROBIN: (E)-{ 2-[6-(2-chlorophenoxy)-5-fluoropyrimidin-4-yloxy]phenyl} (5,6-dihydro-1,4,2-dioxazin-3-yl)methanone O-methyloxime (IUPAC name); (1E)-[2-[[6-(2-chlorophenoxy)-5-fluoro-4-pyrimidinyl]oxy]phenyl](5,6-dihydro-1,4,2-dioxazin-3-yl)methanone O-methyloxime (CAS name)

MYCLOBUTANIL: 2-(4-Chlorophenyl)-2-(1,2,4-triazol-1-ylmethyl)hexanenitrile (IUPAC name); 1H-1,2,4-Triazole-1-propanenitrile,  $\alpha$ -butyl- $\alpha$ -(4-chlorophenyl)- (CAS name)

**Active Ingredient(s)** Fluoxastrobin, Myclobutanil

**Chemical Family** Strobiluron fungicide, Triazole fungicide

**Recommended use of the chemical and restrictions on use**

**Recommended Use:** Fungicide

**Restrictions on Use:** See section 16 for more information

**Manufacturer Address**

FMC Corporation  
2929 Walnut Street  
Philadelphia, PA 19104  
(215) 299-6000 (General Information)  
msdsinfo@fmc.com (E-Mail General Information)

**Emergency telephone number**

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)

Medical Emergencies:  
1 800 / 331-3148 (PROSAR - U.S.A. & Canada)  
1 651 / 632-6793 (PROSAR - All Other Countries - Collect)

**2. HAZARDS IDENTIFICATION**

**Classification**

**OSHA Regulatory Status**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Reproductive toxicity	Category 2
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Specific target organ toxicity (repeated exposure)	Category 2
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**GHS Label elements, including precautionary statements****EMERGENCY OVERVIEW****Warning****Hazard Statements**

H361 - Suspected of damaging fertility or the unborn child

**Precautionary Statements - Prevention**

P201 - Obtain special instructions before use

P202 - Do not handle until all safety precautions have been read and understood

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

**Precautionary Statements - Response**

P308 + P313 - If exposed or concerned: Get medical advice/attention

**Precautionary Statements - Storage**

P405 - Store locked up

**Precautionary Statements - Disposal**

P501 - Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

No hazards not otherwise classified were identified.

**Other Information**

Toxic to aquatic life with long lasting effects.

**3. COMPOSITION/INFORMATION ON INGREDIENTS****Chemical Family** Strobiluron fungicide, Triazole fungicide.

Chemical name	CAS-No	Weight %
Fluoxastrobin	361377-29-9	15.8
Myclobutanil	88671-89-0	25.6
Propylene glycol	57-55-6	5-10

Synonyms are provided in Section 1.

**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 further treatment advice.

**Inhalation**

Move to fresh air. If person is not breathing, call 911 (within the U.S. and Canada) or an ambulance, then give artificial respiration, preferably 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. 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.

**Most important symptoms and effects, both acute and delayed** None known.

**Indication of immediate medical attention and special treatment needed, if necessary** Treat symptomatically.

**5. FIRE-FIGHTING MEASURES**

**Suitable Extinguishing Media** Water spray, Foam, Dry powder, Carbon dioxide (CO<sub>2</sub>), Sand.

**Specific Hazards Arising from the Chemical** Not flammable

**Hazardous Combustion Products** In the event of a fire, the formation of hydrogen cyanide, carbon monoxide and nitrogen oxides must be anticipated.

**Explosion data**  
**Sensitivity to Mechanical Impact** Not sensitive.  
**Sensitivity to Static Discharge** Static electricity might be sufficient to ignite dust clouds. Possibility of ignition will depend on the minimum ignition energy (MIE) and the type of operations undertaken with the material. MIE values are not provided in this SDS.

**Protective equipment and precautions for firefighters** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal Precautions** Isolate and post spill area. Remove all sources of ignition. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see section 8.

**Other** For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.

**Environmental Precautions** See Section 12 for additional Ecological Information.

**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** Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. To clean the floor and all objects contaminated by this material, use damp cloth. Place used cleaning materials into closed receptacles.

**7. HANDLING AND STORAGE**

**Handling** Handle in accordance with good industrial hygiene and safety practice. Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.

**Storage** Keep away from open flames, hot surfaces and sources of ignition. Keep in a dry, cool and well-ventilated place. Keep out of reach of children and animals. Keep/store only in original container.

**Incompatible products** No information available None in particular

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Control parameters

Chemical name	British Columbia	Quebec	Ontario TWAEV	Alberta
Propylene glycol (57-55-6)	-	-	TWA: 10 mg/m <sup>3</sup> aerosol only  TWA: 50 ppm aerosol and vapor  TWA: 155 mg/m <sup>3</sup> aerosol and vapor	-

#### Appropriate engineering 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.

#### Individual protection measures, such as personal protective equipment

**Eye/Face Protection** If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

**Skin and Body Protection** Wear long-sleeved shirt, long pants, socks, and shoes.

**Hand Protection** Rubber/latex/neoprene or other suitable chemical resistant gloves. Use protective gloves made of chemical materials such as nitrile or neoprene. Wash the outside of gloves with soap and water before reuse. Check regularly for leaks.

**Respiratory Protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations.

**Hygiene measures** Clean water should be available for washing in case of eye or skin contamination. Remove and wash contaminated clothing before re-use. Wash skin prior to eating, drinking, chewing gum or using tobacco. Shower or bathe at the end of working. Launder work clothing separately from regular household laundry.

**General information** If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

#### Information on basic physical and chemical properties

<b>Appearance</b>	Viscous liquid
<b>Physical State</b>	Liquid Suspension
<b>Color</b>	Off-white to beige
<b>Odor</b>	Faint hydrocarbon
<b>Odor threshold</b>	No information available
<b>pH</b>	7.23 (1% solution)
<b>Melting point/freezing point</b>	Not applicable
<b>Boiling Point/Range</b>	No information available
<b>Flash point</b>	> 93 °C
<b>Evaporation Rate</b>	No information available
<b>Flammability (solid, gas)</b>	No information available
<b>Flammability Limit in Air</b>	
<b>Upper flammability limit:</b>	No information available
<b>Lower flammability limit:</b>	No information available
<b>Vapor pressure</b>	No information available
<b>Vapor density</b>	No information available
<b>Density</b>	No information available
<b>Specific gravity</b>	1.13

<b>Water solubility</b>	No information available
<b>Solubility in other solvents</b>	No information available
<b>Partition coefficient</b>	No information available
<b>Autoignition temperature</b>	No information available
<b>Decomposition temperature</b>	No information available
<b>Viscosity, kinematic</b>	No information available
<b>Viscosity, dynamic</b>	800-1200 cps @ 25°C
<b>Explosive properties</b>	No information available
<b>Oxidizing properties</b>	No information available
<b>Molecular weight</b>	No information available
<b>Bulk density</b>	No information available
<b>K<sub>st</sub></b>	>0 bar m/s

## 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	Not applicable
<b>Chemical Stability</b>	Stable under recommended storage conditions.
<b>Possibility of Hazardous Reactions</b>	None under normal processing.
<b>Hazardous polymerization</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Heat, flames and sparks.
<b>Incompatible materials</b>	No information available.
<b>Hazardous Decomposition Products</b>	In the event of fire, the formation of hydrogen chloride, hydrogen cyanide, hydrogen fluoride, carbon monoxide, and nitrogen oxide must be anticipated.

## 11. TOXICOLOGICAL INFORMATION

### Product Information

<b>LD50 Oral</b>	3129 mg/kg (rat)
<b>LD50 Dermal</b>	> 5000 mg/kg (rat)
<b>LC50 Inhalation</b>	2.0 mg/L (rat)
<b>Serious eye damage/eye irritation</b>	Mildly irritating.
<b>Skin corrosion/irritation</b>	Slightly irritating.
<b>Sensitization</b>	Non-sensitizing

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation
2-Bromo-2-nitro-1,3-propanediol (52-51-7)	= 180 mg/kg ( Rat )	= 1600 mg/kg ( Rat )	= 800 mg/m <sup>3</sup> ( Rat ) 4 h > 5 g/m <sup>3</sup> ( Rat ) 6 h
Mixture, 3(2H)-isothiazolone, 5-chloro-2-methyl- with 2-methyl-3(2H)-isothiazolone (55965-84-9)	= 53 mg/kg ( Rat )		
Propylene glycol (57-55-6)	= 20 g/kg ( Rat )		
Myclobutanil (88671-89-0)	= 1600 mg/kg ( Rat )	= 7500 mg/kg ( Rabbit )	
Poloxamer (9003-11-6)	= 16 g/kg ( Rat ) = 5700 mg/kg ( Rat )		

### Information on toxicological effects

<b>Symptoms</b>	No information available.
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### Delayed and immediate effects as well as chronic effects from short and long-term exposure

<b>Chronic toxicity</b>	Fluoxastrobin showed reduced body weight and hepatocytomegaly and cytoplasmic changes associated with increased serum liver alkaline phosphatase indicative of cholestasis. Myclobutanil increased liver mixed function oxidase (at 39.2 mg/kg/day) and caused hepatocyte hypertrophy at 125 mg/kg/day.
<b>Mutagenicity</b>	Fluoxastrobin Technical is negative in the following genotoxicity assays: In vitro bacterial

<p><b>Carcinogenicity</b>  <b>Neurological effects</b>  <b>Reproductive toxicity</b></p>	<p>reverse gene mutation, In vitro mammalian chromosome aberration in Chinese hamster lung (V79) cells, mammalian cytogenetics-micronucleus assay (mouse). For Myclobutanil, in laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.                  Fluoxastrobin, Myclobutanil: No evidence of carcinogenicity from animal studies.                  Fluoxastrobin, Myclobutanil: No neurotoxicity observed in animal studies.                  Fluoxastrobin: No toxicity to reproduction in animal studies. Myclobutanil: In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animal. In the livers of male rats from reproductive studies, myclobutanil caused hepatocyte hypertrophy at 9.84 mg/kg/day and more generalized hepatotoxicity at 46.4 mg/kg/day.                  Fluoxastrobin: Evidence of transient body weight loss and decreased food consumption.                  None known.</p>
<p><b>Developmental toxicity</b>  <b>STOT - single exposure</b>  <b>STOT - repeated exposure</b>  <b>Neurological effects</b>  <b>Aspiration hazard</b></p>	<p>Liver, Kidney, Adrenal glands.                  Fluoxastrobin, Myclobutanil: No neurotoxicity observed in animal studies.                  No information available.</p>

**12. ECOLOGICAL INFORMATION**

Ecotoxicity

<b>Persistence and degradability</b>	Fluoxastrobin: Half-life is 29 to 393 days depending on soil type.
<b>Bioaccumulation</b>	Fluoxastrobin: Material may have some potential to bioaccumulate.
<b>Mobility</b>	Fluoxastrobin: Low mobility in soil.

**13. DISPOSAL CONSIDERATIONS**

<b>Waste disposal methods</b>	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.
<b>Contaminated Packaging</b>	Containers must be disposed of in accordance with local, state and federal regulations. Refer to the product label for container disposal instructions. Do not re-use empty containers.

**14. TRANSPORT INFORMATION**

<u>DOT</u>	NOT REGULATED This material is not a hazardous material as defined by U.S. Department of Transportation at 49 CFR Parts 100 through 185.
<u>TDG</u>	NOT REGULATED Classification below is only applicable when shipped by vessel and is not applicable when shipped by road or rail only.
<p><b>UN/ID no</b>  <b>Proper Shipping Name</b>  <b>Hazard class</b>  <b>Packing Group</b>  <b>Description</b></p>	<p>UN3082                  Environmentally hazardous substance, solid, n.o.s.                  9                  III                  UN3082, Environmentally hazardous substance, solid, n.o.s. (Fluoxastrobin), 9, III, Marine Pollutant</p>
<u>ICAO/IATA</u>	NOT REGULATED
<p><b>UN/ID no</b>  <b>Proper Shipping Name</b>  <b>Hazard class</b></p>	<p>UN3082                  Environmentally hazardous substance, solid, n.o.s.                  9</p>

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**Packing Group** III  
**Description** UN3082, Environmentally hazardous substance, solid, n.o.s. (Fluoxastrobin), 9, III, Marine Pollutant

**IMDG/IMO** NOT REGULATED  
**UN/ID no** UN3082  
**Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s.  
**Hazard class** 9  
**Packing Group** III  
**EmS No.** F-A, S-F  
**Description** UN3082, Environmentally hazardous substance, solid, n.o.s. (Fluoxastrobin), 9, 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 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:

Chemical name	CAS-No	Weight %	SARA 313 - Threshold Values %
Myclobutanil - 88671-89-0	88671-89-0	25.6	1.0

##### 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

##### Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

##### 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

##### FIFRA Information

*This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:*

##### **CAUTION:**

*Harmful if swallowed. Causes moderate eye irritation.*

*This pesticide is toxic to fish and aquatic invertebrates.*

#### US State Regulations

##### California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical name	California Prop. 65
Myclobutanil - 88671-89-0	Developmental Male Reproductive

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**U.S. State Right-to-Know Regulations**

Chemical name	New Jersey	Massachusetts	Pennsylvania
Myclobutanil 88671-89-0	X		
Propylene glycol 57-55-6	X		X

**International Inventories**

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINC S (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Myclobutanil 88671-89-0					X	X		
Propylene glycol 57-55-6	X	X	X	X	X	X	X	X

**WHMIS Statement**

This product has been classified in accordance with the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR

**WHMIS Hazard Class**

See section 2 for more information

**16. OTHER INFORMATION**

<b>NFPA</b>	<b>Health Hazards</b> 1	<b>Flammability</b> 0	<b>Instability</b> 0	<b>Special Hazards</b> -
<b>HMIS</b>	<b>Health Hazards</b> 1	<b>Flammability</b> 0	<b>Physical hazard</b> 0	<b>Personal Protection</b> X

Revision date: 2016-05-26  
 Reason for revision: Initial Release

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FMC Corporation

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**End of Safety Data Sheet**