

SAFETY DATA SHEET
Disarm™ C Fungicide

SDS # : FO001139-A
Revision date: 2016-05-26
Format: NA
Version 1.02



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Disarm™ C Fungicide

Other means of identification

Product Code(s) FO001139-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)

CHLOROTHALONIL: tetrachloroisophthalonitrile (IUPAC name);
2,4,5,6-tetrachloro-1,3-benzenedicarbonitrile (CAS name)

Active Ingredient(s) Fluoxastrobin, Chlorothalonil

Chemical Family Strobiluron fungicide, Broad spectrum, non-systemic fungicide

Recommended use of the chemical and restrictions on use

Recommended Use: Fungicide

Restrictions on Use: Use as recommended by the label

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)

Acute toxicity - Oral

Category 4

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Serious eye damage/eye irritation	Category 2B
Skin sensitization	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure)	Category 3

GHS Label elements, including precautionary statements**EMERGENCY OVERVIEW****Warning****Hazard Statements**

H302 - Harmful if swallowed
H317 - May cause an allergic skin reaction
H320 - Causes eye irritation
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H351 - Suspected of causing cancer

**Precautionary Statements - Prevention**

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P281 - Use personal protective equipment as required
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves

Precautionary Statements - Response

P308 + P313 - If exposed or concerned: Get medical advice/attention
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/ attention
P302 + P352 - IF ON SKIN: Wash with plenty of water and soap
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P363 - Wash contaminated clothing before reuse
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
P330 - Rinse mouth

Precautionary Statements - Storage

P405 - Store locked up
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

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

Very toxic to aquatic life with long lasting effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family Strobiluron fungicide, Broad spectrum, nonsystemic fungicide.

Chemical name	CAS-No	Weight %
Chlorothalonil	1897-45-6	38.4
Fluoxastrobin	361377-29-9	2.44
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	Call a poison control center or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by a poison control center or doctor. Have person sip a glass of water if able to swallow.
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 chemical, Carbon dioxide (CO ₂).
Specific Hazards Arising from the Chemical	Not flammable
Hazardous Combustion Products	May decompose at high temperatures forming toxic gases.
Explosion data	
Sensitivity to Mechanical Impact	Not sensitive.
Sensitivity to Static Discharge	Not sensitive.
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

Strong oxidizing agents, Strong acids, Strong bases

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

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

Appearance	Off-white Gray Suspension
Physical State	Liquid
Color	Off-white light gray
Odor	Slight
Odor threshold	No information available
pH	4.0 - 5.0
Melting point/freezing point	Not applicable
Boiling Point/Range	100 °C / 212 °F
Flash point	Not flammable
Evaporation Rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor pressure	No information available
Vapor density	No information available
Density	No information available
Specific gravity	1.25
Water solubility	Miscible with water
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity, kinematic	No information available
Viscosity, dynamic	No information available
Explosive properties	No information available
Oxidizing properties	No information available
Molecular weight	No information available
Bulk density	10.43 lb/gal

10. STABILITY AND REACTIVITY

Reactivity	Not applicable
Chemical Stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Heating or temperatures to decomposition
Incompatible materials	Strong oxidizing agents, Strong acids, Strong bases.
Hazardous Decomposition Products	None known based on information supplied.

11. TOXICOLOGICAL INFORMATION**Product Information**

LD50 Oral	1,750 mg/kg
LD50 Dermal	> 5,000 mg/kg
LC50 Inhalation	> 1.08 mg/L 4 hr
Serious eye damage/eye irritation	Moderately irritating.
Skin corrosion/irritation	Minimally irritating.
Sensitization	Sensitizer

Information on toxicological effects

Symptoms	No information available.
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Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic toxicity	Chlorothalonil: In dogs, 1 year administration caused a significant decrease in body weight gain and increases in absolute liver and kidney weights. Fluoxastrobin showed reduced body weight and hepatocytomegaly and cytoplasmic changes associated with increased serum liver alkaline phosphatase indicative of cholestasis.
Mutagenicity	Chlorothalonil: Not a mutagen based on the evaluated studies Fluoxastrobin: Not genotoxic in animal studies
Carcinogenicity	Chlorothalonil: Fore-stomach tumours in rats and mice, kidney tumours in rats ("likely" to be a human carcinogen by US EPA standards) Fluoxastrobin: Not carcinogenic
Neurological effects	Chlorothalonil: No evidence in regulatory studies. Fluoxastrobin: No neurotoxicity observed in animal studies.
Reproductive toxicity	Chlorothalonil: No toxicity to reproduction in animal studies. Fluoxastrobin. In the reproduction study, there was evidence of decreased body weight in offspring, delayed preputial separation, and incomplete ossification.
Developmental toxicity	Chlorothalonil: No evidence of effects from animal studies. Fluoxastrobin: Evidence of transient body weight loss and decreased food consumption.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Target organ effects	Chlorothalonil: Stomach and kidneys (histopathological changes and increased organ weights in kidneys)
Neurological effects	Chlorothalonil: No evidence in regulatory studies. Fluoxastrobin: No neurotoxicity observed in animal studies.
Aspiration hazard	No information available.

Chemical name	ACGIH	IARC	NTP	OSHA
Chlorothalonil 1897-45-6		Group 2B		X

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chlorothalonil (1897-45-6)				
Active Ingredient(s)	Duration	Species	Value	Units
	96 h EC50	Algae	0.116	mg/L
	96 h LC50	Fish	0.038	mg/L
	48 h EC50	Daphnia magna	0.084	mg/L
	96 h NOEC	Algae	0.033	mg/L
	28 d NOEC	Fish	0.033	mg/L
	21 d NOEC	Daphnia magna	0.0085	mg/L

Persistence and degradability	Chlorothalonil: Moderately persistent. Hydrolytically stable. Not readily biodegradable. Fluoxastrobin: Biodegradation under aerobic conditions could take several months to several years, depending on the soil texture (half life of 29.4 days in sandy loam to 393 days in loamy sand; average half-life of 141 days).
Bioaccumulation	Chlorothalonil: The substance has a low potential to bioaccumulate in the environment.
Mobility	Chlorothalonil: Not expected to reach groundwater. Fluoxastrobin: Low mobility in soil.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods	It must undergo special treatment, e.g. at suitable disposal site, to comply with local regulations.
Contaminated Packaging	Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION

DOT This material is not a hazardous material as defined by U.S. Department of Transportation at 49 CFR Parts 100 through 185.

TDG Classification below is only applicable when shipped by vessel and is not applicable when shipped by road or rail only.

UN/ID no UN3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s.
Hazard class 9
Packing Group III
Marine Pollutant Fluoxastrobin, Chlorothalonil.
Description UN3082, Environmentally hazardous substance, liquid, n.o.s. (Chlorothalonil, Fluoxastrobin), 9, III, Marine Pollutant

ICAO/IATA

UN/ID no UN3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s.
Hazard class 9
Packing Group III
Description UN3082, Environmentally hazardous substance, liquid, n.o.s. (Chlorothalonil, Fluoxastrobin), 9, III, Marine Pollutant

IMDG/IMO

UN/ID no UN3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s.
Hazard class 9
Packing Group III
EmS No. F-A, S-F
Marine Pollutant Fluoxastrobin Chlorothalonil
Description UN3082, Environmentally hazardous substance, liquid, n.o.s. (Chlorothalonil, 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 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

Chemical name	CAS-No	Weight %	SARA 313 - Threshold Values %
Chlorothalonil - 1897-45-6	1897-45-6	38.4	0.1

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

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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.

Harmful if inhaled.

Causes moderate eye irritation.

Repeated or prolonged contact with skin may cause allergic reactions in some people.

This pesticide is toxic to fish, wildlife and aquatic invertebrates.

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

Chemical name	California Prop. 65
Chlorothalonil - 1897-45-6	Carcinogen

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated by state right-to-know regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Chlorothalonil 1897-45-6	X	X	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)
Chlorothalonil 1897-45-6	X	X	X	X	X	X	X	X
Propylene glycol 57-55-6	X	X	X	X	X	X	X	X

Chemical name	Mexico - Pollutant Release and Transfer Register - Reporting Emissions for Fabrication, Process or Use -Threshold Quantities	Pollutant Release and Transfer Register - Reporting Emissions - Threshold Quantities
Chlorothalonil	100 2500 kg/yr	100 kg/yr

16. OTHER INFORMATION

NFPA	Health Hazards 1	Flammability 1	Instability 0	Special Hazards -
HMIS	Health Hazards 1	Flammability 1	Physical hazard 0	Personal Protection X

Revision date: 2016-05-26

Reason for revision: Initial Release

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Prepared By:

FMC Corporation

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End of Safety Data Sheet