



MATERIAL SAFETY DATA SHEET

**Novartis Crop Protection, Inc
Post Office Box 18300
Greensboro, NC 27419**

In Case of Emergency, Call

**Novartis : 1-800-888-8372
CHEMTREC : 1-800-424-9300**

1. CHEMICAL IDENTIFICATION

Product Name:	MEDALLION	Product No.:	A-7850 A
EPA Signal Word:	Caution		
Active Ingredient(%):	Fludioxonil (50%)	CAS No.:	131341-86-1
Chemical Name:	4-(2,2-difluoro-1,3-benzodioxol-4-yl)-1H-pyrrole-3-carbonitrile		
Chemical Class:	Substituted Benzodioxalcarbonitrile Fungicide		

2. COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Surfactant	Not Established	Not Established	Not Established	No
Sodium Sulfate	Not Established	Not Established	15 mg/m3 (Total Dust)	No
Dispersing Agent	15 mg/m3 (Total Dust)	10 mg/m3 (Total Dust)	Not Established	No
Solid Diluent	20 mppcf (containing <1% quartz)	2 mg/m3	2 mg/m3 (Respirable)**	No
Crystalline Silica, Quartz	10 mg/m3/% SiO ₂ +2 (Respirable)	0.1 mg/m3 (Respirable)	Not Established	IARC, 2A
Wetting Agent	Not Established	Not Established	Not Established	No
Fludioxonil (50%)	Not Established	Not Established	Not Established	No

** recommended by NIOSH

3. HAZARDS IDENTIFICATION

Notes to Physician

There is no specific antidote if this product is ingested.

If a large amount has been ingested and emesis is inadequate, lavage stomach.

Treat symptomatically.

Symptoms of Acute Exposure

Exposure can result in slight eye or skin irritation.

Hazardous Decomposition Products

None Known

Physical Properties

Appearance: Off-White Powder

Odor: Sweet, Soap-Like

Unusual Fire, Explosion and Reactivity Hazards

None Known

4. FIRST AID MEASURES

If poisoning is suspected, immediately contact a physician, the nearest hospital, or the nearest Poison Control Center. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given.

- Ingestion: If victim is fully conscious, give large quantities of water to drink and induce vomiting. Never give anything by mouth to an unconscious person.
- Eye Contact: Immediately rinse eyes with a large amount of running water. Hold eye lids apart to rinse the entire surface of the eyes and lids. Do not apply any medicating agents except on the advice of a physician.
- Skin Contact: Wash with plenty of soap and water, including hair and under fingernails. Do not apply any medicating agents except on the advice of a physician. Remove contaminated clothing and decontaminate prior to use.
- Inhalation: Move victim from contaminated area to fresh air. Apply artificial respiration if necessary.

Notes to Physician

There is no specific antidote if this product is ingested.

If a large amount has been ingested and emesis is inadequate, lavage stomach.

Treat symptomatically.

Medical Condition Likely to be Aggravated by Exposure

None Known

5. FIRE FIGHTING MEASURES

Fire and Explosion

- Flash Point (Test Method): Not Applicable
- Flammable Limits (% in Air): Lower: %; Upper: % Not Applicable
- Autoignition Temperature: Not Available
- Flammability: Not Flammable

Unusual Fire, Explosion and Reactivity Hazards

None Known

In Case of Fire

Use dry chemical, foam, or CO₂ extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated.

6. ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Wear chemical safety glasses with side shields or chemical goggles, rubber gloves, rubber boots, long-sleeved shirt, long pants, head covering, and use a particulate filter, NIOSH approved per 42 CFR Part 84. Select N or R or P type as appropriate for the oil characteristics of any other air contaminants present. Filter efficiency may range from 95 - 99.97% as appropriate for the size distribution of dusts present. For small spills, sweep up, keeping dust to a minimum, and place in an approved chemical container. Wash the spill area with water containing a strong detergent, absorb with pet litter or other absorbent material, sweep up and place in a chemical container. Seal the container and handle in an approved manner. Flush the area with water to remove any residue. Do not allow wash water to contaminate water supplies.

7. HANDLING AND STORAGE

Store the material in a well-ventilated, secure area out of the reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco usage, and cosmetic application in areas where there is a potential for exposure to the material. Always wash thoroughly after handling.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS.

Ingestion: Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Always wash thoroughly after handling.

Eye Contact: To avoid eye contact, wear safety glasses with side shields or chemical goggles.

Skin Contact: To avoid skin contact, wear rubber gloves, rubber boots, long-sleeved shirt, long pants and a head covering.

Inhalation: To avoid breathing dust, use a particulate filter, NIOSH approved per 42 CFR Part 84. Select N or R or P type as appropriate for the oil characteristics of any other air contaminants present. Filter efficiency may range from 95 - 99.97% as appropriate for the size distribution of dusts present.

Applicators/Handlers: Please refer to the product label for personal protective clothing/equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Off-White Powder

Odor: Sweet, Soap-Like

Melting Point: 199.8°C

Boiling Point: Not Applicable

Specific Gravity/Density: 0.37 g/cc

pH: 8-9(1% solution in H₂O @ 25°C)

Solubility in H₂O

Fludioxonil : 1.8 mg/L @ 25°C

Vapor Pressure

Fludioxonil : 3.90E-04 mPA @ 25°C

10. STABILITY AND REACTIVITY

Reactivity

Stability: Stable

Hazardous Polymerization: Will Not Occur

Conditions to Avoid: None Known

Hazardous Decomposition Products

None Known

11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies

Ingestion: practically non-toxic
Oral LD50 (Rat) : > 5,050 mg/kg body weight

Dermal: slightly toxic
Dermal LD50 (Rabbit) : > 2,020 mg/kg body weight

Inhalation: practically non-toxic
Inhalation LC50 (Rat) : > 6.5 mg/l air - 4 hours

Eye Contact: slightly irritating (Rabbit)

Skin Contact: slightly irritating (Rabbit)

Skin Sensitization: Not a sensitizer (Guinea Pig)

Mutagenic Potential

Fludioxonil: Genotoxic in one study; negative in five others

Reproductive Hazard Potential

Fludioxonil: Delayed development at doses causing maternal toxicity

Chronic/Subchronic Toxicity Studies

Fludioxonil: Liver and kidneys toxicity high dose levels

Carcinogenic Potential

Fludioxonil: Marginal increase (7%) of liver tumors (female, rats: 3,000 ppm); Within historical control range

(1 to 10%).

Other Toxicity Information

Not Available

Toxicity of Other Components

Dispersing Agent

Dust may produce a respiratory allergenic response and/or irritation in some individuals. May cause severe eye injury but the damage is reversible.

Sodium Sulfate

Exposure may cause irritation of the nose, throat and lungs. Repeated or prolonged contact to the skin results in dermatitis. May cause mild irritation to the eyes.

Solid Diluent

May cause irritation to upper respiratory tract. Long term excessive exposures may cause a pulmonary fibrosis and may lead to severe and permanent damage to lungs. Abrasion may cause eye and skin irritation.

Surfactant

Exposure can result in eye, skin and respiratory tract irritation.

Wetting Agent

Exposure to skin and eyes may result in irritation.

Target Organs

Active Ingredients

Fludioxonil : Liver and Kidneys

Inert Ingredients

Dispersing Agent : Not Available

Sodium Sulfate : Respiratory Tract, Skin and Eyes

Solid Diluent : Lungs

Surfactant : Eyes, Skin and Respiratory Tract

Wetting Agent : None Known

12. ECOLOGICAL INFORMATION

Summary of Effects

Fludioxonil:

Practically nontoxic to birds, but highly toxic to aquatic invertebrates and fish.

Eco-Acute Toxicity

Fludioxonil: Rainbow Trout 96-hour LC50 0.47 mg/l

Bluegill Sunfish 96-hour LC50 0.74 mg/l

Daphnia magna 48-hour LC50 0.90 mg/l

Bobwhite Oral LD50 >2,000 mg/kg

Mallard Oral LD50 >2,000 mg/kg

Bobwhite 8-day Dietary LC50 >5,200 ppm

Mallard 8-day Dietary LC50 >5,200 ppm

Eco-Chronic Toxicity

Fludioxonil: Fish (Fathead minnow) Early Life Stage MATC 0.028 mg/l

Invertebrate (Daphnia Magna) Life Cycle MATC 0.025 mg/l

Mallard Reproduction NOEC 700 ppm

Bobwhite Reproduction NOEC 125 ppm

Environmental Fate

Fludioxonil:

Not Available

13. DISPOSAL CONSIDERATION

Disposal

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste Not Applicable

Listed Waste: Not Applicable

14. TRANSPORT INFORMATION

DOT Classification:

Not Applicable; No Label or Placard Required

B/L Freight Classification

Insecticides or Fungicides; Agricultural, N.O.S.

International Transportation

Not Applicable

15. REGULATORY INFORMATION

SARA Title III Classification

Section 311/312: Acute Health Hazard
 Chronic Health Hazard

Section 313 chemical(s): Not Applicable

Proposition 65

Not Applicable

CERCLA Reportable Quantity (RQ)

None

RCRA Classification

Not Applicable

TSCA Status

Exempt from TSCA

16. OTHER INFORMATION

NFPA Hazard Ratings

Health: 1
Flammability: 0
Reactivity: 0

0	Least
1	Slight
2	Moderate
3	High
4	Severe

Questions concerning the safe handling of the product should be referred to:

Industrial Health

1-800-334-9481

Issued Date: 6/28/94

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Supersedes: 1/21/98

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

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