

# **DISARM™ 480 SC FUNGICIDE**

**FOR CONTROL OF DISEASES IN TURF**

**SUSPENSION**

**COMMERCIAL**

**GUARANTEE: fluoxastrobin.....480 g/L**

Contains 1,2-benzisothiazolin-3-one at 0.0193%, 5-chloro-2-methyl-4-isothiazolin-3-one at 0.00113% and 2-methyl-4-isothiazolin-3-one at 0.00037% as preservatives

**REGISTRATION NUMBER 30811 PEST CONTROL PRODUCTS ACT**

**READ THE LABEL AND ATTACHED BOOKLET BEFORE USING  
KEEP OUT OF REACH OF CHILDREN**

**POTENTIAL SKIN SENSITIZER**

**NET CONTENTS: 250 mL to 750 L**

**For product information call: 1-866-761-9397**

**Arysta LifeScience North America LLC  
15401 Weston Parkway, Suite 150  
Cary, NC 27513  
U.S.A.**

## **NOTICE TO USER**

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *PEST CONTROL PRODUCTS ACT* to use this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use of this product.

## **PRECAUTIONS**

Potential skin sensitizer. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid contact with skin, eyes or clothing.

Applicators and other handlers must wear long-sleeved shirt and long pants, shoes plus socks, and chemical resistant gloves made of any waterproof material, such as nitrile, butyl, neoprene and/or barrier laminate. These are only some of the glove materials that are chemically resistant to this product.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining equipment. If there are no such instructions for washables, use detergent and hot water. Keep and wash clothing separately from other laundry.

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Do not enter or allow entry into treated turf until residues are dry.

## **FIRST AID**

**IF SWALLOWED:** Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

**IF ON SKIN OR CLOTHING:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15–20 minutes. Call a poison control centre or doctor for treatment advice.

**IF INHALED:** Move person 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 centre or doctor for further treatment advice.

**IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15–20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

**TOXICOLOGICAL INFORMATION:** Treat symptomatically

## **ENVIRONMENTAL HAZARDS**

This pesticide is toxic to aquatic organisms. Observe buffer zones specified under

**DIRECTIONS FOR USE.** Fluoxastrobin is persistent and may carryover. It is recommended that any products containing fluoxastrobin not be used in areas treated with this product during the previous season

To reduce runoff from treated areas into aquatic habitats avoid application to areas with a moderate to steep slope, compacted soil, or clay.

Avoid application when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body.

Toxic to certain beneficial insects. Minimize spray drift to reduce harmful effects on beneficial insects in habitats next to the application site such as hedgerows and woodland.

Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark, or other sensitive areas that may be exposed to spray drift. Do not contaminate water when disposing of equipment washwater or rinsate.

#### **STORAGE AND DISPOSAL**

**PESTICIDE STORAGE:** Store in cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, or feed. Store in original container and out of reach of children, preferably in a locked storage area. DISARM 480 SC Fungicide is not affected by freezing.

**SPILL CLEAN-UP:** Follow safety precautions as directed for handling the product. If on a floor or hard surface, wash the surface or floor with detergent and water, then rinse. If on soil, collect surface soil contaminated with the product.

#### **DISPOSAL:**

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instructions for any required additional cleaning of the container prior to its disposal.
3. Make the empty container unsuitable for further use.
4. Dispose of the container in accordance with provincial requirements.
5. For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

<p><b>In case of emergency involving a major spill, fire or poisoning Call CHEMTREC 24-hours at 1-800-424-9300 or (703) 527-3887</b></p>
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Avoid application when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body.

Toxic to certain beneficial insects. Minimize spray drift to reduce harmful effects on beneficial insects in habitats next to the application site such as hedgerows and woodland.

Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark, or other sensitive areas that may be exposed to spray drift. Do not contaminate water when disposing of equipment washwater or rinsate.

#### **STORAGE AND DISPOSAL**

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**SPILL CLEAN-UP:** Follow safety precautions as directed for handling the product. If on a floor or hard surface, wash the surface or floor with detergent and water, then rinse. If on soil, collect surface soil contaminated with the product.

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#### **GENERAL INFORMATION**

DISARM™ 480 SC Fungicide is a broad-spectrum fungicide for the control of diseases in turf. DISARM 480 SC Fungicide works by interfering with respiration in plant-pathogenic fungi, and is a potent inhibitor of spore germination and mycelial growth.

**UNDER CERTAIN CONDITIONS CONDUCIVE TO EXTENDED INFECTION PERIODS, ADDITIONAL FUNGICIDE APPLICATIONS BEYOND THE NUMBER ALLOWED BY THIS LABEL MAY BE NEEDED. UNDER THESE CONDITIONS, USE ANOTHER FUNGICIDE FROM A DIFFERENT MODE OF ACTION GROUP REGISTERED FOR THE DISEASE.**

## **RESISTANCE MANAGEMENT RECOMMENDATIONS**

For resistance management, please note that DI SARM 480 SC Fungicide contains a Group 11 fungicide. Any fungal population may contain individuals naturally resistant to DISARM 480 SC Fungicide and other Group 11 fungicides. A gradual or total loss of pest control may occur over time if these fungicides are used repeatedly in the same fields. Other resistance mechanisms that are not linked to site of action but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay fungicide resistance:

- Where possible, rotate the use of DI SARM 480 SC Fungicide or other Group 11 fungicides with different groups that control the same pathogens.
- For control of pythium blight and anthracnose, do not apply more than 1 application of Disarm 480 SC Fungicide before alternating with a fungicide having a different mode of action registered for the same disease or pathogen. For control of diseases other than pythium blight and anthracnose, do not apply more than 2 sequential applications before alternating with a fungicide having a different mode of action registered for the same disease or pathogen.
- Use tank mixtures with fungicides from a different group when such use is permitted.
- Fungicide use should be based on an IPM program that includes scouting, historical information related to pesticide use and crop rotation and considers cultural, biological and other chemical control practices.
- Monitor treated fungal populations for resistance development.
- If disease continues to progress after treatment with this product, do not increase the use rate. Discontinue use of this product, and switch to another fungicide with a different target site of action, if available.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or IPM recommendations for specific crops and pathogens.
- For further information and to report suspected resistance, contact Arysta LifeScience North America LLC at 1-866-761-9397.

## **APPLICATION GUIDELINES**

### **Broadcast Ground Sprayers**

Thorough coverage is necessary to provide good disease control. Applications using sufficient water volume to provide thorough and uniform coverage generally provide the most effective disease control.

Equip sprayers with nozzles that provide accurate and uniform application. Be certain that nozzles are the same size and uniformly spaced across the boom. Calibrate the sprayer before use. Use a pump with the capacity to: (1) maintain a minimum of 240 kPa at nozzles, and (2) provide sufficient agitation in the tank to keep the mixture in suspension (this requires recirculation of 10% of the tank volume per minute). Use jet agitators or a liquid sparge tube for

vigorous agitation. Use screens to protect the pump and to prevent nozzles from clogging. Screens placed on the suction side of the pump should be 16-mesh or coarser. Do not place a screen in the recirculation line. Use 50-mesh screens at the nozzles. Check nozzle manufacturer's recommendations. For information on spray equipment and calibration, consult sprayer manufacturer's and/or provincial recommendations. For specific local directions and spray schedules, consult the current provincial recommendations.

### **Mixing Procedures**

Prepare no more spray mixture than is needed for the immediate operation. Thoroughly clean spray equipment before using this product. Agitation is necessary for proper dispersal of the product. Maintain maximum agitation throughout the spraying operation. Do not let the spray mixture stand overnight in the spray tank. Flush the spray equipment thoroughly following each use and apply the rinsate to a previously treated area.

Add 1/2 of the required amount of water to the mix tank. With the agitator running, add the DISARM 480 SC Fungicide to the tank. Continue agitation while adding the remainder of the water. Begin application of the solution after the DISARM 480 SC Fungicide has completely and uniformly dispersed into the mix water. Maintain agitation until all of the mixture has been applied.

### **SENSITIVE AREAS**

This pesticide must only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitats for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

### **INFORMATION ON DROPLET SIZE**

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions below).

### **CONTROLLING DROPLET SIZE**

- Volume - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of nozzles - Use the minimum number of nozzles that provide uniform coverage.
- Nozzle Orientation - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.

- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

**Ground boom application:** **DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty. **DO NOT** apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) medium classification. Boom height must be 60 cm or less above the crop or ground.

**DO NOT** apply by air.

As this product is not registered for the control of pests in aquatic systems, **DO NOT** use to control aquatic pests.

**DO NOT** contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

**Buffer zones:**

Use of the following spray methods or equipment **DO NOT** require a buffer zone: hand-held or backpack sprayer and spot treatment.

The buffer zones specified in the table below are required between the point of direct application and the closest downwind edge of sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands) and estuarine/marine habitats.

Method of application	Crop	Buffer Zones (metres) Required for the Protection of:			
		Freshwater Habitat of Depths:		Estuarine/Marine Habitats of Depths:	
		Less than 1 m	Greater than 1 m	Less than 1 m	Greater than 1 m
Ground boom sprayer	Turf	1	1	10	5

For tank mixes, consult the labels of the tank-mix partners and observe the largest (most restrictive) buffer zone of the products involved in the tank mixture and apply using the coarsest spray (ASAE) category indicated on the labels for those tank mix partners.

**TURF**

For use to control disease in turf on sod farms, golf courses, lawns and landscape areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas and athletic fields.

Keep children and pets out of treated area until spray has dried.

**UNDER CERTAIN CONDITIONS CONDUCIVE TO EXTENDED INFECTION PERIODS, ADDITIONAL FUNGICIDE APPLICATIONS BEYOND THE NUMBER ALLOWED BY THIS LABEL MAY BE NEEDED. UNDER THESE CONDITIONS, USE ANOTHER FUNGICIDE FROM A DIFFERENT MODE OF ACTION GROUP REGISTERED FOR THE DISEASE.**

## **APPLICATION GUIDELINES**

### **Ground Boom Sprayers**

Thorough coverage is necessary to provide good disease control. Applications using sufficient water volume to provide thorough and uniform coverage provide the most effective disease control. For ground application equipment, 4 - 16 litres of water/1000m<sup>2</sup> is recommended.

Equip sprayers with nozzles that provide accurate and uniform application. Be certain that nozzles are the same size and uniformly spaced across the boom. Calibrate the sprayer before use. Use a pump with the capacity to: (1) maintain a minimum of 240 KPa at nozzles, and (2) provide sufficient agitation in the tank to keep the mixture in suspension (this requires recirculation of 10% of the tank volume per minute). Use jet agitators or a liquid sparge tube for vigorous agitation. Use screens to protect the pump and to prevent nozzles from clogging. Screens placed on the suction side of the pump should be 16-mesh or coarser. Do not place a screen in the recirculation line. Use 50-mesh screens at the nozzles. Check nozzle manufacturer's recommendations. For information on spray equipment and calibration, consult sprayer manufacturer's and/or provincial recommendations. For specific local directions and spray schedules, consult the provincial recommendations.

## **SPRAY PREPARATION**

Remove scale, pesticide residues, and other foreign matter from the chemical tank and entire injector system. Flush with clean water.

**NOTE:** When treatment with DISARM 480 SC Fungicide has been completed, further field irrigation over the treated area should be avoided for 24 hours to prevent washing the chemical off the turf.

## **USE DIRECTIONS FOR TURF**

DISARM 480 SC Fungicide provides control of diseases in turf. DISARM 480 SC Fungicide should be used in conjunction with cultural practices that promote healthy, vigorous turf. These practices include nutrient management, thatch management, water management and judicious use of other fungicides and cultural practices.

**Rate Ranges:** Use the shorter specified application interval and/or the higher specified rate when prolonged favorable disease conditions exist.

## DIRECTIONS FOR APPLICATION TO TURF

Disease Control	Use Rate (mL of product per 100 m <sup>2</sup> )	App Interval (days)	Remarks
Anthracnose – Foliar Blight ( <i>Colletotrichum cereale</i> )	5.8-11.5	14-28	Use preventatively. Begin applications when conditions are favourable for disease development. Under severe conditions, tank-mix with Banner 130 EC Fungicide or Daconil 2787 Flowable Fungicide at labelled rates.
Anthracnose -Basal Rot ( <i>Colletotrichum cereale</i> )	11.5	14-21	Use preventatively. Begin applications when conditions are favourable for disease development. Under severe conditions, tank-mix with Banner 130 EC Fungicide or Daconil 2787 Flowable Fungicide at labelled rates.
Dollar Spot ( <i>Sclerotinia homoeocarpa</i> )	5.00 - 11.5	14 - 21	DISARM 480 SC Fungicide provides control of light to moderate dollar spot pressure. Under heavy dollar spot pressure use a Group 3 (DMI) fungicide labeled for control of Dollar Spot with DISARM 480 SC Fungicide applications.
Pink Snow Mould ( <i>Microdochium nivale</i> )	11.5	n/a	Apply 1 application prior to permanent snow cover and before turf dormancy. Tank-mix with Banner 130 EC Fungicide or Daconil 2787 Flowable Fungicide at labelled rates to improve efficacy against grey snow mould caused by <i>Typhula ishikariensis</i> .
Grey Snow Mould ( <i>Typhula incarnata</i> )	11.5	n/a	
Summer Patch ( <i>Magnaporthe poae</i> )	5.8- 11.5	14-28	Start applications in the spring when the soil temperatures at 5 cm depth reach 15.5-18 °C or as prescribed by local turf specialists.
Take All Patch ( <i>Gaeumannomyces graminis</i> )	11.5	28	Begin applications before disease is present and continue applications while conditions are favourable for disease development. Make up to 2 applications in the spring and/or fall. Maximum 3 applications per season.

Pythium Foliar Blight ( <i>Pythium aphanidermatum</i> )	11.5	7-14	Use preventatively. Begin applications when conditions are favourable for disease infection, prior to disease symptom development. During periods of prolonged favourable conditions, treat on the 14-day application interval. Maximum 3 applications per season.
Brown Ring Patch (Waitea Patch) ( <i>Waitea circinata</i> var. <i>circinata</i> )	5.8-11.5	14-21	Use preventatively. Begin applications when conditions are favourable for disease infection, prior to disease symptom development. Use the higher rate under high disease pressure.
Melting out and Leaf Spot ( <i>Bipolaris sorokiniana</i> , <i>Drechslera poae</i> )	5.8-11.5	14-21	Apply when conditions are favourable for disease development. Applications should be made preventatively. The high rate should be used for curative applications, when disease pressure is high and/or when environmental conditions are favourable for disease development.
Brown Patch ( <i>Rhizoctonia solani</i> )	5.8-11.5	14-28	Apply when conditions are favourable for disease development.

For control of pythium blight and anthracnose, do not apply more than 1 application of Disarm 480 SC Fungicide before alternating with a fungicide having a different mode of action registered for the same disease or pathogen. For control of diseases other than pythium blight and anthracnose, do not apply more than 2 sequential applications before alternating with a fungicide having a different mode of action registered for the same disease or pathogen.

### Restrictions and Other Information

- Do not apply more than 40 mL/100m<sup>2</sup> of DISARM 480 SC Fungicide per year, or more than 11.5 mL/100m<sup>2</sup> per application.
- There is a maximum number of 4 applications per season.
- Not for home owner use. May only be applied to residential turf by a certified pest control operator.
- Under conditions of high disease pressure, use the higher rate, the shortest application interval or both.
- DISARM 480 SC Fungicide may be tank mixed with BANNER MAXX Fungicide at table rates to increase the spectrum of controlled diseases. Refer to the BANNER MAXX Fungicide label for use directions, restrictions and precautions.
- DISARM 480 SC Fungicide may be tank mixed with DA CONIL ULTREX Fungicide at

table rates to increase the spectrum of controlled diseases. Refer to the DACO NIL ULTREX Fungicide label for use directions, restrictions and precautions.

- DISARM 480 SC Fungicide may be tank mixed with ROVRAL GREEN GT Flowable Fungicide at 62 to 375 mL/100m<sup>2</sup> in turf to increase the spectrum of controlled diseases. Refer to the ROVRAL GREEN GT Flowable Fungicide label for use directions, restrictions and precautions.
- When DISARM 480 SC Fungicide is used in combination with other fungicides, always follow the most restrictive label restrictions and precautions.

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