



# Daconil Zn<sup>®</sup>

## Flowable Fungicide

For control of turf and ornamental diseases

*Active Ingredient:*

Chlorothalonil (tetrachloroisophthalonitrile) . . . . . 38.5%

*Other Ingredients:* . . . . . 61.5%

*Total:* . . . . . 100.0%

Contains 4.16 pounds chlorothalonil active ingredient per gallon (500 grams per liter)

**KEEP OUT OF REACH OF CHILDREN.**

**WARNING/AVISO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See additional precautionary statements and directions for use inside booklet.

EPA Reg. No. 100-1696

EPA Est. 86555-MO-001

SCP 1696A-L1 0321

**2.5 gallons**

Net Contents



FIRST AID	
<b>If inhaled</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>• Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> <li>• Call a poison control center or doctor immediately for treatment advice.</li> </ul>
<b>If on skin or clothing</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>NOTE TO PHYSICIAN</b>	
Persons suffering with temporary allergic skin reactions may respond to treatment with oral antihistamines and topical or oral steroids.	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
<b>HOT LINE NUMBER</b>	
For 24-Hour Medical Emergency Assistance (Human or Animal) or Chemical Emergency Assistance (Spill, Leak, Fire, or Accident), Call <b>1-800-888-8372</b>	

**PRECAUTIONARY STATEMENTS**

**Hazards to Humans and Domestic Animals**

**WARNING/AVISO**

Harmful if absorbed through skin. Harmful if inhaled. Harmful if swallowed. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Wear long-sleeved shirt and long pants, socks, shoes, and chemical-resistant gloves (such as natural rubber, Selection Category A). Remove and wash contaminated clothing before reuse. Avoid breathing spray mist. Avoid contact with eyes or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

**Personal Protective Equipment (PPE)**

Some materials that are chemical-resistant to this product are made of any waterproof material. If you want more options, follow the instructions for Category A on an EPA chemical resistance category selection chart.

**Mixers, loaders, applicators and all other handlers must wear:**

- long-sleeved shirt and long pants
- chemical-resistant gloves made of any waterproof material
- shoes plus socks
- protective eyewear

In addition, Applicators and Handlers in enclosed areas such as a greenhouse must wear:

- NIOSH approved dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C) or a NIOSH approved respirator with any N, R, P or HE filter.

*continued...*

## PRECAUTIONARY STATEMENTS (continued)

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 PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

### Engineering Control Statements

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240(d)(4-6)), the handler PPE requirements may be reduced or modified as specified in the WPS.

### User Safety Recommendations

#### Users should:

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

### Environmental Hazards

This product is toxic to aquatic invertebrates and wildlife. DO NOT apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. DO NOT contaminate water when disposing of equipment wash water or rinsate.

This chemical is known to leach through soil into groundwater under certain conditions as a result of label use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

This chemical can contaminate surface water through spray drift. Under some conditions, it may have a high potential for runoff into surface water for several days to weeks after application. These include poorly draining or wet soils with readily visible slopes towards adjacent surface waters, frequently flooded areas, areas overlaying extremely shallow ground water, areas with infield canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas over-laying tile drainage systems that drain to surface water.

## CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, LLC or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of this product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and, (2) Buyer and User assume the risk of any such use. TO THE EXTENT PERMITTED BY APPLICABLE LAW, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Daconil Zn should be used only in accordance with recommendations on this label or in separately published SYNGENTA supplemental labeling recommendations for this product.

DO NOT apply this product in a way that will contact workers, other persons, or pets either directly or through drift. Only protected handlers may be in the area during application. For any requirement specific to your State or Tribe, consult the agency responsible for pesticide regulation.

### Agricultural Uses:

Sod farms, ornamental nurseries and greenhouses, and conifers (conifer nursery beds, Christmas tree and bough production plantations, and tree seed orchards).

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard (WPS), 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval (REI). **The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.**

**DO NOT enter or allow worker entry into treated areas during the REI of 12 hours.**

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- coveralls
- chemical-resistant gloves made of any waterproof material
- shoes plus socks
- protective eyewear

**Special Eye Irritation Provisions:** This product is a severe eye irritant. Although the restricted-entry interval expires after 12 hours, for the next 6.5 days entry is permitted only when the following safety measures are provided:

- (1) At least one container designed specifically for flushing eyes must be available in operating condition at the WPS-required decontamination site intended for workers entering the treated area.
- (2) Workers must be informed, in a manner they can understand:
  - that residues in the treated area may be highly irritating to their eyes
  - that they should take precautions, such as refraining from rubbing their eyes, to keep the residues out of their eyes
  - that if they do get residues in their eyes, they should immediately flush their eyes using the eyeflush container that is located at the decontamination site or using other readily available clean water
  - how to operate the eyeflush container

## Non-Agricultural Uses

For use to control turf diseases on golf courses, on lawns around commercial (nonresidential) and industrial buildings, and on professional and collegiate athletic fields.

For use to control diseases on ornamentals on golf courses and landscape areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas and athletic fields.

### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

**DO NOT enter or allow others to enter the treated area until sprays have dried.**

## PRODUCT USE INFORMATION

### PRODUCT USE PRECAUTIONS AND RESTRICTIONS

**Do not use on home lawns and turf sites associated with apartment buildings, daycare centers, playgrounds, playfields, recreational park athletic fields, athletic fields located on or next to schools (e.g., elementary, middle and high schools), campgrounds, churches and theme parks.**

**Do not apply to forests.**

**Agricultural Use Sites:** Sod farms, ornamental nurseries and greenhouses, and conifers (conifer nursery beds, Christmas tree and bough production plantations, and tree seed orchards)

This product must not be applied within 150 feet for aerial applications, or 25 feet for ground applications of marine/estuarine water bodies, unless there is an untreated buffer area of that width between the area to be treated and the water body.

### Non-Agricultural Use Sites:

For use to control turf diseases on golf courses, on lawns around commercial (nonresidential) and industrial buildings, and on professional and collegiate athletic fields.

For use to control diseases on ornamentals on golf courses and landscape areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas and athletic fields.

### Tank Mix Precautions and Instructions

DO NOT combine Daconil Zn in the spray tank with pesticides, surfactants or fertilizers, unless your prior use has shown the combination physically compatible, effective and noninjurious under your conditions of use. DO NOT combine Daconil Zn with Dipel®, Latron B-1956® or Latron AG-98®, horticultural oil, and products containing xylene as phytotoxicity may result from the combination when applied to some species on this label.

A tank mix of Daconil Zn with Chipco® Signature® can result in physical antagonism if not mixed properly. Always fill the spray tank with water to near capacity first. Then, with the agitator running, add the desired amount of Daconil Zn followed by the desired amount of Chipco Signature and/or other tank mix partners.

### Spray Drift Precautions

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.

The following drift management requirements must be followed to avoid off target drift movement from aerial applications to agricultural field crops. These requirements do not apply to public health uses or applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed  $\frac{3}{4}$  the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they should be observed.

The applicator should be familiar with and take into account the information covered in the **Aerial Drift Reduction Advisory Information**.

### Aerial Drift Reduction Advisory Information

This section is advisory in nature and does not supersede the mandatory label requirements.

#### 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 conditions (See Wind, Temperature).

### 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 the 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 potential.

### Boom Length

For some use patterns, reducing the effective boom length to less than  $\frac{3}{4}$  of the wingspan or rotor length may further reduce drift without reducing swath width.

### Application Height

Applications should not be made at a height greater than 10 ft above the top of the largest plants, unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

### Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the upwind and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

### Wind

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

### Temperature and Humidity

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

### Temperature Inversions

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

### Sensitive Areas

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

## APPLICATION

The required amount of Daconil Zn should be added slowly into the spray tank during filling. With concentrate sprays, pre-mix the required amount of Daconil Zn in a clean container and add to the spray tank as it is being filled. Keep agitator running when filling spray tank and during spray operations.

### Application and Calibration Techniques for Sprinkler Irrigation - Chemigation

Apply this product only through center pivot, motorized lateral move, solid set or portable (wheel move, side roll, end tow, or hand move) irrigation system(s). DO NOT apply this product through any other type of irrigation system. DO NOT use Daconil Zn through sprinkler irrigation equipment on golf courses.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

DO NOT apply this product through irrigation systems connected to a public water system. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections, or regularly serves an average of at least 25 individuals daily at least 60 days per year.

Controls for both irrigation water and pesticide injection systems must be functionally interlocked, so as to automatically terminate pesticide injection when the irrigation water pump motor stops. A person knowledgeable of the irrigation system and responsible for its operation shall be present so as to discontinue pesticide injection and make necessary adjustments, should the need arise.

The irrigation water pipeline must be fitted with a functional, automatic, quick-closing check valve to prevent the flow of treated irrigation water back toward the water source. The pipeline must also be fitted with a vacuum relief valve and low pressure drain, located between the irrigation water pump and the check valve, to prevent back-siphoning of treated irrigation water into the water source.

**Always inject Daconil Zn into irrigation water after it discharges from the irrigation pump and after it passes through the check valve. Never inject pesticides into the intake line on the suction side of the pump.**

Pesticide injection equipment must be fitted with a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump. Interlock this valve to the power system, so as to prevent fluid from being withdrawn from the chemical supply tank when the irrigation system is either automatically or manually turned off.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Spray mixture in the chemical supply tank must be agitated at all times, otherwise settling and uneven application may occur. DO NOT apply when wind speed favors drift beyond the area intended for treatment.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Daconil Zn may be used through two basic types of sprinkler irrigation systems as outlined in Sections A and B below. Determine which type of system is in place, then refer to the appropriate directions provided for each type.

#### **A. Center Pivot, Motorized Lateral Move and Traveling Gun Irrigation Equipment**

For injection of pesticides, these continuously moving systems must use a positive displacement injection pump, of either diaphragm or piston type, constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock and capable of injection at pressures approximately 2-3 times those encountered within the irrigation water line. Venturi applicator units cannot be used on these systems.

Thoroughly mix recommended amount of Daconil Zn for acreage to be covered into same amount of water used during calibration and inject into system continuously for one revolution or run. Mixture in the chemical supply tank must be continuously agitated during the injection run. Shut off injection equipment after one revolution or run, but continue to operate irrigation system until Daconil Zn has been cleared from last sprinkler head.

#### **B. Solid Set and Portable (Wheel Move, Side Roll, End Tow, or Hand Move) Irrigation Equipment**

With stationary systems, an effectively designed in-line venturi applicator unit is preferred which is constructed of materials that are compatible with pesticides; however, a positive-displacement pump can also be used.

Determine acreage covered by sprinkler. Fill tank of injection equipment with water and adjust flow to use contents over a thirty to forty-five minute period. Mix desired amount of Daconil Zn for acreage to be covered with water so that the total mixture of Daconil Zn plus water in the injection tank is equal to the quantity of water used during calibration, and operate entire system at normal pressures recommended by the manufacturer of injection equipment used, for amount of time established during calibration. Agitation is recommended. Daconil Zn can be injected at the beginning or end of the irrigation cycle or as a separate application. Stop injection equipment after treatment is completed and continue to operate irrigation system until Daconil Zn has been cleared from last sprinkler head.

## **DIRECTIONS FOR APPLICATION**

### **TURF**

**Do not use on home lawns and turf sites associated with apartment buildings, daycare centers, playgrounds, playfields, recreational park athletic fields, athletic fields located on or next to schools (e.g., elementary, middle and high schools), campgrounds, churches, and theme parks.**

Do not use Daconil Zn on fine fescue turf due to the potential for phytotoxicity or turfgrass injury.

DO NOT mow or water after treatment until spray deposited on turfgrass is thoroughly dry; Daconil Zn should always be used in conjunction with good turf management practices.

**Group A. Golf Course Fairways and Roughs, Lawns around Commercial (nonresidential) and Industrial Buildings, and Professional and Collegiate Athletic Field Turf:**

**Spray Volumes:** Apply Daconil Zn in 30 to 450 gallons of water per acre (0.7 to 10 gallons of water per 1000 sq ft).

#### **Restrictions:**

- Do not apply more than 52 pints/acre (18.4 fl oz/1000 sq ft) of Daconil Zn per growing season (26 lb ai/acre) per growing season.
- The minimum re-treatment interval for single application rates up to 14 pints/acre (5 fl oz/1000 sq ft) of Daconil Zn (7.3 lb ai/acre) is 7 days.
- Do not apply more than one application of a rate greater than 14 pints/acre (5 fl oz/1000 sq ft) of Daconil Zn (7.3 lb ai/acre) per growing season.
- The maximum single application rate is 22 pints/acre (8 fl oz/1000 sq ft) of Daconil Zn (11.3 lb ai/acre).

#### **Group B. Golf Course Tees and Greens**

**Spray Volumes:** Apply Daconil Zn in an adequate amount of water to provide complete coverage. This amount may vary from 90 to 450 gallons of water per acre (2.0 to 10 gallons of water per 1000 sq ft).

#### **Restrictions:**

##### **Golf Course Tees:**

- Do not apply more than 100 pints/acre (37 fl oz/1000 sq ft) of Daconil Zn (52 lb ai/acre) per growing season.
- The minimum re-treatment interval for single application rates up to 14 pints/acre (5 fl oz/1000 sq ft) of Daconil Zn (7.3 lb ai/acre) is 7 days.
- The minimum re-treatment interval after an application of a rate greater than 14 pints/acre (5 fl oz/1000 sq ft) of Daconil Zn (7.3 lb ai/acre) is 14 days.
- Do not apply more than two applications of a rate greater than 14 pints/acre (5 fl oz/1000 sq ft) of Daconil Zn (7.3 lb ai/acre) per growing season.
- The maximum single application rate is 22 pints/acre (8 fl oz/1000 sq ft) of Daconil Zn (11.3 lb ai/acre).

##### **Golf Course Greens:**

- Do not apply more than 140 pints/acre (52 fl oz/1000 sq ft) of Daconil Zn (73 lb ai/acre) per growing season.
- The minimum re-treatment interval for single application rates up to 14 pints/acre (5 fl oz/1000 sq ft) of Daconil Zn (7.3 lb ai/acre) is 7 days and the minimum re-treatment interval after an application of a rate greater than 14 pints/acre (5 fl oz/1000 sq ft) of Daconil Zn (7.3 lb ai/acre) is 14 days.
- Do not apply more than two applications of a rate greater than 14 pints/acre (5 fl oz/1000 sq ft) of Daconil Zn (7.3 lb ai/acre) per growing season.
- The maximum single application rate is 22 pints/acre (8 fl oz/1000 sq ft) of Daconil Zn (11.3 lb ai/acre).

##### **Sod Farms:**

**Spray Volumes:** Apply Daconil Zn in 30 to 450 gallons of water per acre (0.7 to 10 gallons of water per 1000 sq ft).

#### **Restrictions:**

- Sod farm turf treated with chlorothalonil prior to harvest must be mechanically cut, rolled and palletized.
- **Do not use for sod farms at application rates greater than 13 pounds of active ingredient per acre per year.**
- Do not apply more than 25 pints/acre (9.2 fl oz/1000 sq ft) of Daconil Zn per growing season (13 lb ai/acre) per growing season.
- The minimum re-treatment interval for single application rates up to 14 pints/acre (5 fl oz/1000 sq ft) of Daconil Zn (7.3 lb ai/acre) is 7 days.
- Do not apply more than one application of a rate greater than 14 pints/acre (5 fl oz/1000 sq ft) of Daconil Zn (7.3 lb ai/acre) per growing season.
- The maximum single application rate is 22 pints/acre (8 fl oz/1000 sq ft) of Daconil Zn (11.3 lb ai/acre).



## Application Timing (All Turf)

Begin applications when conditions favor disease development and repeat applications as long as these conditions persist. Under severe disease conditions, use the highest rate and shortest interval corresponding with the application schedule selected from the table below.

Diseases Controlled *	Application Interval (days)	Pre-Disease Rates <sup>a</sup>			Post-Disease Rates <sup>a</sup>		
		fl oz product/1000 sq ft	pints product/acre	lb ai/acre	fl oz product/1000 sq ft	pints product/acre	lb ai/acre
Dollar spot	7 to 10 7 to 21 14	1.5 <sup>b</sup> to 3 3 to 5 -	4 <sup>b</sup> to 8 8 to 14 -	2.1 <sup>b</sup> to 4.16 4.16 to 7.3 -	- - 6 to 8	- - 16 to 22	- - 8.32 to 11.3
Leaf spot Melting-out Brown blight	7 to 10 7 to 21 14	3 3 to 5 -	8 8 to 14 -	4.16 4.16 to 7.3 -	- - 6 to 8	- - 16 to 22	- - 8.32 to 11.3
Brown patch	7 to 14 14	3 to 5 -	8 to 14 -	4.16 to 7.3 -	- 6 to 8	- 16 to 22	- 8.32 to 11.3
Gray leaf spot	7 to 10 14	3 to 5 -	8 to 14 -	4.16 to 7.3 -	- 6 to 8	- 16 to 22	- 8.32 to 11.3
Red thread	7 to 10 14	3 to 5 5.3 to 8	8 to 14 14.3 to 22	4.16 to 7.3 7.4 to 11.3	- 8	- 22	- 11.3
Anthraxnose	7 to 14 14	4.4 to 5 5.3 to 8	12 to 14 14.3 to 22	6.2 to 7.3 7.4 to 11.3	- -	- -	- -
Copper spot	14	6 to 8	16 to 22	8.32 to 11.3	8	22	11.3
Stem rust (Bluegrass)	14	6 to 8	16 to 22	8.32 to 11.3	8	22	11.3
Dichondra: Leaf spot (CA only)	14	6 to 8	16 to 22	8.32 to 11.3	8	22	11.3
Gray snow mold <sup>c</sup>	30	8	22	11.3	-	-	-
Fusarium (Gerlachia) patch <sup>c</sup>	21 to 28	8	22	11.3	-	-	-
Algae <sup>c</sup>	7 to 14 14	3 to 5 -	8 to 14 -	4.16 to 7.3 -	3 to 5 6 to 8	8 to 14 16 to 22	4.16 to 7.3 8.32 to 11.3

<sup>a</sup>Group A Turf: Limit of one application per season at rates greater than 7.3 lb ai/acre (14 pints/acre or 5 fl oz/1000 sq ft of Daconil Zn).

Group B Turf: Limit of two applications per season at rates greater than 7.3 lb ai/acre (14 pints/acre or 5 fl oz/1000 sq ft of Daconil Zn).

<sup>b</sup>Low rate is not effective on intensively mowed turfgrasses such as golf course tees and greens.

<sup>c</sup>See specific use directions below.

Dashes (-) in the above table: Not recommended.

**\*Diseases listed are caused by fungi, some of which are named as follows:**

1. Dollar spot: *Sclerotinia homeocarpa*; *Lanzia* or *Moellerodiscus* spp.
2. Brown patch: *Rhizoctonia solani*, *R. zeae*, *R. cerealis*
3. Leaf spots, Melting-out, Brown blight: *Drechslera* spp. (including *D. poae*, *D. siccans*), *Bipolaris sorokiniana*, *Curvularia* spp.
4. Gray leaf spot: *Pyricularia grisea*, *P. oryzae*
5. Red thread: *Laetisaria fuciformis*
6. Anthracnose: *Colletotrichum graminicola*
7. Copper spot: *Gloeocercospora sorghi*
8. Stem rust: *Puccinia graminis*
9. Dichondra leaf spot: *Alternaria* spp.
10. Gray snow mold: *Typhula* spp.
11. Fusarium (Gerlachia) patch
12. Algae

**Gray snow mold caused by *Typhula* spp.: Group A and B Turf:**

- Apply in sufficient water to obtain adequate coverage (2 to 10 gallons per 1000 sq ft). Apply one application 22 pints/acre (8 fl oz/1000 sq ft) of Daconil Zn (11.3 lb ai/acre).
- Application must be made before snow cover in autumn.
- Group B Turf: If snow cover is intermittent or lacking during the winter, a second application of Daconil Zn at 22 pints/acre (8 fl oz/1000 sq ft) may be applied one month after the first application.

## Fusarium (Gerlachia) patch: Group A and B Turf:

- In areas where pink snow mold (Gerlachia or Fusarium patch) is likely to occur, apply Daconil Zn at 22 pints/acre (8 fl oz/1000 sq ft) (11.3 lb ai/acre) in combination with products containing iprodione at 88 oz ai/acre (2 oz ai/1000 sq ft) of turf area. Read and observe all label directions for products containing these active ingredients.
- For control of Fusarium patch only in areas where snow cover is intermittent or lacking during the winter, apply 22 pints/acre (8 fl oz/1000 sq ft) of Daconil Zn (11.3 lb ai/acre). Make application in late autumn. Group B Turf: Apply a second application of 22 pints/acre (8 fl oz/1000 sq ft) of Daconil Zn 21 to 28 days after the first application unless conditions favorable for Fusarium patch no longer prevail.

## Algae: Group A and B Turf:

- For prevention of algae on turfgrasses, apply Daconil Zn at the rate of 8 to 14 pints/acre (3 to 5 fl oz/1000 sq ft) (4.16 to 7.3 lb ai/acre) on a 7- to 14-day schedule. Under severe algae conditions, use the 14 pints/acre (5 fl oz/1000 sq ft) rate and apply on a 7-day schedule.
- When algae is well established, every attempt should be made to dry out the afflicted area. Once dry, spiking or verticutting should be done to enhance turfgrass recovery in conjunction with a Daconil Zn application at the rate of 16 to 22 pints/acre (6 to 8 fl oz/1000 sq ft) (8.32 to 11.3 lb ai/acre). Group B Turf: A second application of Daconil Zn at the 22 pints/acre (8 fl oz/1000 sq ft) rate may be made 14 days after the first application. Only a preventive spray program with Daconil Zn will prevent a recurrence of the algae when environmental conditions are favorable.

## ORNAMENTAL PLANTS

Apply Daconil Zn at a rate of 2 pints (1.0 lb ai) per 100 gallons of water unless other directions are given in the tables below.

DO NOT apply more than 70 pints Daconil Zn (36.4 lb ai/acre) per growing season to field-grown ornamentals.

Apply in a spray to run-off, when conditions are favorable for disease development. Repeat applications at 7- to 14-day intervals until conditions are no longer favorable. During periods when conditions favor severe disease incidence, generally cloudy or wet weather, apply Daconil Zn at 7-day intervals. The minimum re-treatment interval is 7 days. Daconil Zn should be applied to plants when both foliage and flowers are dry, or nearly dry.

DO NOT combine Daconil Zn in the spray tank with pesticides, surfactants or fertilizers, unless your prior use has shown the combination to be physically compatible, effective and noninjurious under your conditions of use.

DO NOT apply Daconil Zn through high pressure spray equipment. Do not use mistblowers, cold fog, or other fogging application equipment when making applications of Daconil Zn in greenhouses.

DO NOT apply Daconil Zn to either green or variegated Pittosporum or to Schefflera, as multiple applications may cause phytotoxic responses.

DO NOT apply Daconil Zn to ferns.

Knock Out® and Double Delight roses can be sensitive to Daconil Zn applications, resulting in damage to foliage under certain growing conditions.

Use of Daconil Zn is recommended for control of fungal diseases referred to by numbers in parentheses following each ornamental. Ornamentals listed on this label have been tested and found to tolerate applications of Daconil Zn at the recommended rates. The user should test for possible phytotoxic responses, using recommended rates on ornamental plants on a small area prior to commercial use. Applications made during bloom may damage flowers and/or fruits.

**Fruits and other structures which may be borne on treated plants MUST NOT BE EATEN.**

## Ornamentals Recommended for Treatment with Daconil Zn

### BROADLEAF SHRUBS AND TREES

Andromeda (Pieris) (4)	Holly (1)
Ash (Fraxinus) (1)	Lilac (5)
Aspen (1)	Magnolia (1)
Azalea (1,2,4)	Maple (1)
Buckeye, Horsechestnut (1)	Mountain Laurel (1)
Cherry Laurel (1)	Oak (red group only) (1,7)
Crabapple (1,6,8)	Oregon Grape (Mahonia) (6)
Dogwood (1)	Photinia (1)
Eucalyptus (3)	Poplar (1)
Euonymus (1)	Privet (Ligustrum) (1)
Firethorn (Pyracantha) (1)	Rhododendron (1,2,4)
Flowering Almond (1,2)	Sand Cherry (1,2)
Flowering Cherry (1,2)	Sequoia (1)
Flowering Peach (1,2)	Spiraea (1)
Flowering Plum (1,2)	Sycamore, Planetree (1)
Flowering Quince (1,2)	Viburnum (5)
Hawthorn (1,6)	Walnut (Juglans) (1)

## FLOWERING PLANTS<sup>a/</sup> AND BULBS

Arabian Violet (2)	Iris, Bulbous (1)
Begonia (1)	Lily (1)
Camellia (2)	Lily, Asiatic (1)
Carnation (1,2)	Marigold (1)
Chrysanthemum (1,2)	Narcissus (1)
Crocus (1)	Pansy (1)
Daffodil (1)	Petunia (1,4)
Daisy (1)	Phlox (1)
Geranium (1,6)	Poinsettia <sup>b/</sup> (1)
Gladiolus (1,2)	Rose <sup>d/</sup> (1)
Hollyhock (6)	Statice (1)
Hydrangea (foliage only) (1,6)	Tulip (1)
Iris (1,2)	Zinnia (1,5)

<sup>a/</sup> Avoid applications during bloom period on plants where flower injury is unacceptable.

<sup>b/</sup> Discontinue applications prior to bract formation; phytotoxicity is possible on the bracts.

<sup>d/</sup> Use 1.5 pints Daconil Zn (0.75 lb ai) per 100 gallons of water.

## FOLIAGE PLANTS

Aglaonema (1)	Ming Aralia (1)
Areca Palm (1)	Oyster Plant (Rhoeo) (1)
Artemesia (1)	Parlor Palm (Chamaedorea) (1)
Dumbcane (Dffenbachia) (1)	Peperomia (1)
Dracaena (1)	Philodendron (1,4)
Fatsia (Aralia) (1)	Prayer Plant (Maranta) (1)
Ficus (1)	Syngonium (1)
Lipstick Plant (1)	Zebra Plant (Aphelandra) (1)

## Diseases Controlled with Daconil Zn

### 1. Leaf spots/Foliar blights:

Actinopelte leaf spot	Fabraea (Entomosporium) leaf spot
Alternaria leaf spot/leaf blight	Fusarium leaf spot
Anthraxnose leaf blotch, spot	Gloeosporium black leaf spot
Anthraxnose (Discula) blight	Ink spot (Drechslera)
Ascochyta blight	Marssonina leaf spot
Bipolaris (Helminthosporium) leaf spot	Monilinia blossom blight, twig blight
Black spot on roses	Mycosphaerella ray blight
Botrytis leaf spot, leaf blight	Myrothecium leaf spot, brown rot
Cephalosporium leaf spot	Nematostoma leaf blight
Cercospora leaf spot	Phyllosticta leaf spot
Cercosporidium leaf spot	Ramularia leaf spot
Corynespora leaf spot	Rhizoctonia web blight
Coryneum blight (shothole)	Septoria leaf spot
Curvularia leaf spot	Sphaeropsis leaf spot
Cylindrosporium leaf spot	Stagonospora leaf scorch
Dactylaria leaf spot	Tan leaf spot (Curvularia)
Didymellina leaf spot	Volutella leaf blight
Drechslera leaf spot	

### 2. Flower spots/blights:

Botrytis flower spot, flower blight	Ovulinia flower blight
Curvularia flower spot	Rhizopus blossom blight
Monilinia blossom blight	Sclerotinia flower blight

### 3. Cylindrocladium stem canker

### 4. Phytophthora leaf blight, dieback

### 5. Powdery mildews:

<i>Erysiphe cichoracearum</i>	<i>Microsphaera</i> spp.
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### 6. Rusts:

<i>Gymnosporangium</i> spp.	<i>Puccinia</i> spp.
<i>Pucciniastrum hydrangeae</i>	

### 7. Taphrina blister

### 8. Scab (*Venturia inaequalis*)

The following ornamental plant species which have been tested with Daconil Zn at recommended rates did not exhibit phytotoxicity:

Botanical Name	Common Name
<i>Aechmea fasciata</i>	Aechmea
<i>Araucaria heterophylla</i>	Norfolk Island Pine
<i>Bougainvillea</i> spp.	Bougainvillea
<i>Caladium</i> spp.	Caladium
<i>Calathea makoyana</i>	Peacock Plant
<i>Calistephus chinensis</i>	Aster
<i>Carissa grandiflora</i>	Natal Plum
<i>Clerodendron thomsonae</i>	Bleeding Heart
<i>Codiaeum</i> spp.	Croton
<i>Cordyline terminalis</i>	Ti Plant
<i>Crassula argentea</i>	Jade Plant
<i>Dionaea muscipula</i>	Venus Fly Trap
<i>Dizygotheca elegantissima</i>	False Aralia
<i>Epipremnum aureum</i>	Golden Pothos, Scindapsus
<i>Episcia cupreata</i>	Flame Violet
<i>Fittonia</i> spp.	Silver-Nerve Plant
<i>Gerbera jamesonii</i>	Gerbera Daisy
<i>Gynura sarmentosa</i>	Purple Passion Vine
<i>Gypsophila paniculata</i>	Baby's Breath
<i>Hoya</i> spp.	Wax Plant
<i>Ilex cornuta</i>	Chinese Holly
<i>Ilex crenata</i>	Japanese Holly
<i>Impatiens</i> spp.	Impatiens
<i>Pilea cadierei</i>	Aluminum Plant
<i>Sansevieria trifasciata "Hahnii"</i>	Birdsnest Sansevieria
<i>Tolmeia menziesii</i>	Piggy-Back Plant
<i>Yucca elephantipes</i>	Spineless Yucca
<i>Zygocactus truncatus</i>	Christmas Cactus

**NOTE:** DO NOT apply Daconil Zn to either green or variegated Pittosporum or to Schefflera, as multiple applications may cause phytotoxic responses.

## CONIFERS:

Use on conifers is limited to the uses and sites listed in the Conifer disease and rate table below.

Do not apply to forests.

Apply Daconil Zn in sufficient water (minimum of 10 gallons per acre) and with proper calibration to obtain uniform coverage of tree canopy.

Application with ground equipment is preferable to aerial application because ground applications generally give better coverage of the tree canopy.

Aerial application is allowed only for Christmas tree and bough production plantations and tree seed orchards.

When concentrate sprays are used or when treating non-bearing or immature trees, the lower rate of Daconil Zn listed may be used.

- Do not allow livestock to graze in treated areas.
- Do not apply Daconil Zn through high pressure spray equipment.
- Do not use mistblowers, cold fog, or other fogging application equipment when making applications of Daconil Zn in greenhouses.
- Do not apply Daconil Zn to blue spruce.

CROP	DISEASES	Daconil Zn Rate (lb ai)	APPLICATION DIRECTIONS
		ACRE	
<p><b>Conifers</b> ( Douglas firs including Christmas trees)</p> <p>For use in:</p> <p>1) conifer nursery beds</p> <p>2) Christmas tree and bough production plantations</p> <p>3) tree seed orchards</p> <p>4) landscapes of golf courses, and around residential, institutional, public, commercial and industrial buildings, parks, recreational areas and athletic fields</p>	Swiss needlecast ( <i>Phaeocryptopus gaeumannii</i> )	4 to 8 pt (2.1 to 4.16)	<p>Minimum Application Plan: Make one application in the spring when new shoot growth is 1/2-2 inches in length.</p> <p>Under high disease pressure, a second application may be made 10-14 days after the first application.</p> <p>When using aerial applications, use the highest rate.</p>
	Interior needle blight ( <i>Mycosphaerella</i> spp. and <i>Phaeocryptopus nudus</i> )		
	Scleroderris canker ( <i>Gremmeniella abietina</i> )	2.25 to 4 pt (1.17 to 2.1)	<p><b>Multiple Applications:</b> Make the first application in spring when new shoot growth is 1/2-2 inches in length. Make additional applications at 3- to 4-week intervals until conditions no longer favor disease development. For use in nursery beds, apply the highest rate specified on a 3-week schedule.</p> <p>When using aerial applications, use the highest rate.</p>
	Swiss needlecast ( <i>Phaeocryptopus gaeumannii</i> )		
	Interior needle blight ( <i>Mycosphaerella</i> spp. and <i>Phaeocryptopus nudus</i> )	2.75 to 5 pt (1.5 to 2.6)	
	Sirococcus tip blight ( <i>S. conigenus</i> )		
	Rhizosphaera needlecast ( <i>Rhizosphaera</i> spp.)		
	Scirrhia brown spot ( <i>Mycosphaerella dearnessii</i> )	8 pt (4.16)	
	Cyclaneusma and Lophodermium needlecasts	4 to 8 pt (2.1 to 4.16)	Apply in early spring prior to budbreak. Repeat applications at approximately 6- to 8-week intervals, until spore release ceases in late fall. Apply monthly during periods of frequent rainfall, and where Lophodermium infections occur during dormancy (Pacific Northwest). During drought periods, applications may be suspended then resumed upon next occurrence of needle wetness.
	Rhabdocline needlecast	2.25 to 4 pt (1.17 to 2.1)	Apply at budbreak and repeat at 3- to 4-week intervals until needles are fully elongated and conditions no longer favor disease development. In plantations of mixed provenance, or when irregular budbreak occurs, apply weekly until all trees have broken bud, then every 3 to 4 weeks as specified above. In nursery beds, use the high rate on a 3-week schedule.
Botrytis seedling blight	2.25 to 4 pt (1.17 to 2.1)	Begin applications in nursery beds when seedlings are 4 inches tall and when cool, moist conditions favor disease development. Make additional applications at 7- to 14-day intervals as long as disease-favorable conditions persist.	
Phoma twig blight			
Weir's cushion rust ( <i>Chrysomyxa weirii</i> )	8 pt (4.16)	Begin applications when 10% of buds have broken and twice thereafter at 7- to 10-day intervals.	

DO NOT apply more than 31.5 pints of Daconil Zn (16.5 lb ai) per acre during each growing season.

## STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

### Pesticide Storage

Store in a cool place. Protect from excessive heat.

### Pesticide Disposal

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, pesticide spray or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

### Container Handling

Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use and disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER.**

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