



# Ensign® 82.5%

## TURF & ORNAMENTAL FUNGICIDE

<b>ACTIVE INGREDIENT:</b>		
Chlorothalonil (tetrachloroisophthalonitrile)	.....	82.5%
<b>OTHER INGREDIENTS:</b>	.....	17.5%
	<b>TOTAL</b>	<b>100.0%</b>

(82.5% Water Dispersible Granules)

### KEEP OUT OF REACH OF CHILDREN DANGER—PELIGRO

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.)

FIRST AID	
<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>• Rinse eye only with water. Do not put eye drops, drugs, or ointments in eyes unless specifically recommended by a medical doctor or a poison control center.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<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 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>
<p><b>NOTE TO PHYSICIAN:</b> Possible mucosal damage may contraindicate the use of gastric lavage; chemical absorbents are recommended to reduce absorption of product. Persons suffering with temporary allergic skin reactions may respond to treatment with oral antihistamines and topical or oral steroids. If in eyes, the upper and lower lids should be retracted and irrigated, and any particulate matter should be carefully removed from the conjunctival fornix. Irrigation should be continued until the conjunctival sac is neutral on pH testing with universal indicator paper. Fluroscein staining is required to reveal the extent of corneal or conjunctival epithelial loss. Topical antibiotic ointments are indicated when corneal epithelial damage is identified. Use of steroid eye drops is not advocated unless expressly requested by an Ophthalmologist. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p> <p><b>FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL:</b> 1-866-944-8565.</p>	

See additional precautionary statements and directions for use inside booklet. Read entire label carefully and use only as directed.

**EPA REG. NO. 34704-965**  
**EPA EST. NO. 50534-TX-001**  
**NET CONTENTS 5 LBS. (2.26 KG)**

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### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS DANGER—PELIGRO

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.)

Corrosive. Causes irreversible eye damage. May be fatal if inhaled. Causes skin irritation. Do not get in eyes, on skin, or on clothing. Do not breathe dust. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

#### Personal Protective Equipment (PPE):

**Mixers, loaders, applicators, and all other handlers must wear:** Coveralls over short-sleeved shirt and short pants, chemical resistant gloves made of any water-proof material - Category A (e.g., barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton), chemical resistant footwear plus socks, protective eyewear, chemical resistant headgear for overhead exposure, chemical resistant apron when cleaning equipment, mixing, or loading and NIOSH approved dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C), or a NIOSH approved respirator with N, R, P, or HE filter.

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 also 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 toward adjacent surface waters, frequently flooded areas, areas overlying 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 overlaying tile drainage systems that drain to surface water.

#### DIRECTIONS FOR USE

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

Ensign® 82.5% should be used only in accordance with recommendations on this label or in separately published supplemental labeling recommendations for this product.

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

DO NOT apply when wind speed favors drift beyond the area intended for treatment.

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## AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 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. 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 workers to enter treated areas during the restricted entry interval (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 over short-sleeved shirt and short pants, chemical resistant gloves made of any waterproof material - Category A (e.g., barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride (PVC) or viton), chemical resistant footwear plus socks, protective eyewear and chemical resistant headgear for overhead exposure.

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.

## Nonagricultural Uses

For use to control diseases on ornamental turf on golf courses, institutional landscaped areas, commercial and industrial buildings.

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

## NONAGRICULTURAL 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.**

## GENERAL INFORMATION

Ensign 82.5% is an excellent disease control agent when used according to label directions for control of a broad spectrum of plant diseases. Ensign 82.5% is recommended for use in programs which are compatible with the principles of Integrated Pest Management (IPM), which include the use of disease resistant crop varieties, cultural practices, pest scouting and disease forecasting systems which reduce unnecessary applications of pesticides.

## Resistance Management

Ensign 82.5% is effective for strategic use in programs that attempt to minimize disease resistance to fungicides. Some other fungicides which are at risk from disease resistance exhibit a single-site mode of fungicidal action. Ensign 82.5% with a multi-site mode of action, may be used to delay or prevent the development of resistance to single-site fungicides. Consult with your federal or state Cooperative Extension Service representatives for guidance on the proper use of Ensign 82.5% in programs which seek to minimize the occurrence of disease resistance to other fungicides.

## GENERAL PRECAUTIONS AND RESTRICTIONS

**Use of this product on home lawns is prohibited.**

**Agricultural Use Sites Only** (sod farms, farms, forests, nurseries and greenhouses): 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.

DO NOT combine Ensign 82.5% 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 Ensign 82.5% 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.

The required amount of Ensign 82.5% should be added slowly into the spray tank during filling. With concentrate sprays, pre-mix the required amount of Ensign 82.5% 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.

## 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 forestry applications, 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 supercede 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 downward. 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 drift potential (higher wind, smaller drops, etc.).

### Wind

Drift potential is lowest between wind speeds 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.

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## 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, nontarget crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

## APPLICATION

### Application and Calibration Techniques for Sprinkler Irrigation

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 Ensign 82.5% 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 Ensign 82.5% 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.

Posting of areas to be chemigated is required when 1) any part of a treated area is within 300 feet of sensitive areas such as residential areas, labor camps, businesses, day care centers, hospitals, in-patient clinics, nursing homes or any public areas such as schools, parks, playgrounds, or other public facilities not including public roads, or 2) when the chemigated area is open to the public.

Posting must conform to the following requirements. Treated areas shall be posted with signs at all usual points of entry and along likely routes of approach from the listed sensitive areas. When there are no usual points of entry, signs must be posted in the corners of the treated areas and in any other location affording maximum visibility to sensitive areas. The printed side of the sign should face away from the treated area towards the sensitive area. The signs shall be printed in English. Signs must be posted prior to application and must remain posted until foliage has dried and soil surface water has disappeared. Signs may remain in

place indefinitely as long as they are composed of materials to prevent deterioration and maintain legibility for the duration of the posting period.

All words shall consist of letters at least 2½ inches tall, and all letters and the symbol shall be a color which sharply contrasts with their immediate background. At the top of the sign shall be the words KEEP OUT, followed by an octagonal stop sign symbol at least 8 inches in diameter containing the word STOP. Below the symbol shall be the words PESTICIDES IN IRRIGATION WATER.

This sign is in addition to any sign posted to comply with the Worker Protection Standard.

Ensign 82.5% 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.

Fill chemical supply tank of injection equipment with water. Operate system for one complete revolution or run across the field, measuring time required, amount of water injected, and acreage covered. Thoroughly mix recommended amount of Ensign 82.5% 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 Ensign 82.5% 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 Ensign 82.5% for acreage to be covered with water so that the total mixture of Ensign 82.5% 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. Ensign 82.5% 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 Ensign 82.5% has been cleared from last sprinkler head.

## DIRECTIONS FOR APPLICATION

### GROUP A. Golf Course Fairways, Sod Farms, Lawns (around institutional, public, commercial and industrial buildings), & Other Ornamental Turf grass:

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

#### Sod Farms

**NOTE:** Sod farm turf treated with chlorothalonil prior to harvest must be mechanically cut, rolled and harvested.

**NOTE: Do not use for sod farms at application rates greater than 13 pounds of active ingredient, per acre, per year.**

#### Golf Course and Institutional, Commercial and Industrial Sites:

Do not apply more than 31.5 pounds Ensign 82.5% (26 lbs. a.i.) per acre per growing season. The minimum re-treatment interval for single application rates up to 8.8 pounds Ensign 82.5% (7.3 lbs. a.i.) per acre is 7 days. The minimum re-treatment interval after an application of a rate greater than 8.8 pounds Ensign 82.5% (7.3 lbs. a.i.) per acre is 14 days. Do not apply more than one application of a rate greater than 8.8 pounds Ensign 82.5% (7.3 lbs. a.i.) per acre per growing season. Apply Ensign 82.5% in 30 to 40 gallons of water per acre. 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.

DO NOT mow or water after treatment until spray deposited on turf grass is thoroughly dry; Ensign 82.5% should always be used in conjunction with good turf management practices.

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## GROUP B. Golf Course Tees and Greens:

**Golf Course Tees:** Do not apply more than 63 pounds Ensign 82.5% (52 lbs. a.i.) per acre per growing season. The minimum re-treatment interval for single application rates up to 8.8 pounds Ensign 82.5% (7.3 lbs. a.i.) per acre is 7 days and the minimum re-treatment interval for single application rates greater than 8.8 pounds Ensign 82.5% (7.3 lbs. a.i.) per acre is 14 days. Do not apply more than two applications of a rate greater than 8.8 pounds Ensign 82.5% (7.3 lbs. a.i.) per acre per growing season.

**Golf Course Greens:** Do not apply more than 88.5 pounds Ensign 82.5% (73 lbs. a.i.) per acre per growing season. The minimum re-treatment interval for single application rates up to 8.8 pounds Ensign 82.5% (7.3 lbs. a.i.) per acre is 7 days and the minimum re-treatment interval for single application rates greater than 8.8 pounds Ensign 82.5% (7.3 lbs. a.i.) per acre is 14 days. Do not apply more than two applications of a rate greater than 8.8 pounds Ensign 82.5% (7.3 lbs. a.i.) per acre per growing season.

Apply Ensign 82.5% in an adequate amount of water to provide complete coverage. This amount may vary from 90 to 450 gallons per acre. See below for suggested rates and timing. Under severe disease conditions, use the high rate and apply on a 7 day schedule.

DO NOT mow or water after treatment until spray deposited on turf grass is thoroughly dry; Ensign 82.5% should always be used in conjunction with good turf management practices.

Diseases Controlled*	Application Interval (days)	Pre-Disease Rates <sup>a</sup>			Post-Disease Rates <sup>a</sup>		
		ozs. Product/1000 sq. ft.	lbs. product/acre	lbs. ai/acre	ozs. product/1000 sq. ft.	lbs. product/acre	lbs. ai/acre
Dollar Spot	7 to 10	1.0 <sup>b</sup> to 1.8	2.5 <sup>b</sup> to 5.0	2.1 <sup>b</sup> to 4.1	-	-	-
	7 to 21	1.8 to 3.25	5.0 to 8.8	4.1 to 7.3	-	-	-
	14	-	-	-	3.7 to 5.0	10 to 13.6	8.25 to 11.3
Leafspot	7 to 10	1.8	5.0	4.1	-	-	-
Melting-out	7 to 21	1.8 to 3.25	5.0 to 8.8	4.1 to 7.3	-	-	-
Brown Blight	14	-	-	-	3.7 to 5.0	10 to 13.6	8.25 to 11.3
Brown Patch	7 to 14	1.8 to 3.25	5.0 to 8.8	4.1 to 7.3	-	-	-
	14	-	-	-	3.7 to 5.0	10 to 13.6	8.25 to 11.3
Gray Leafspot	7 to 10	1.8 to 3.25	5.0 to 8.8	4.1 to 7.3	-	-	-
	14	-	-	-	3.7 to 5.0	10 to 13.6	8.25 to 11.3
Red Thread	7 to 10	1.8 to 3.25	5.0 to 8.8	4.1 to 7.3	-	-	-
	14	3.25 to 5.0	8.8 to 13.6	7.4 to 11.3	5.0	13.6	11.3
Anthracnose	7 to 14	2.75 to 3.25	7.5 to 8.8	6.2 to 7.3	-	-	-
	14	3.25 to 5.0	8.8 to 13.6	7.4 to 11.3	-	-	-
Copper Spot	14	3.7 to 5.0	10 to 13.6	8.25 to 11.3	5.0	13.6	11.3
Stem Rust (Bluegrass)	14	3.7 to 5.0	10 to 13.6	8.25 to 11.3	5.0	13.6	11.3
DICHONDRA: Leafspot (CA only)	14	3.7 to 5.0	10 to 13.6	8.25 to 11.3	5.0	13.6	11.3
Gray Snow Mold <sup>c</sup>	30	5.0	13.6	11.3	-	-	-
Fusarium (Gerlachia) Patch <sup>c</sup>	21 to 28	5.0	13.6	11.3	-	-	-
Algae <sup>c</sup>	7 to 14	1.8 to 3.25	5.0 to 8.8	4.1 to 7.3	-	-	-
	14	-	-	-	-	-	-

<sup>a</sup> **Group A Turf:** Limit of one application per season at rates greater than 7.3 lbs ai/acre (8.8 lbs/acre or 3.25 oz/1000 sq. ft) of Ensign 82.5%.

**Group B Turf:** Limit of two applications per season at rates greater than 7.3 lbs ai/acre (8.8 pints/acre or 3.25 oz/1000 sq. ft) of Ensign 82.5%.

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

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

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

- Dollar spot: *Sclerotinia homeocarpa*; *Lanzia* or *Moellerodiscus* spp.
- Leafspots, Melting-out, Brown blight: *Drechslera* spp. (including *D. poae*, *D. siccans*), *Bipolaris sorokiniana*, *Curvularia* spp.
- Brown patch: *Rhizoctonia solani*, *R. zeae*, *R. cerealis*
- Gray leafspot: *Pyricularia grisea*, *P. oryzae*
- Red thread: *Laetisaria fuciformis*
- Anthracnose: *Colletotrichum graminicola*
- Copper spot: *Gloeocercospora sorghi*
- Stem rust: *Puccinia graminis*
- Dichondra leafspot: *Alternaria* spp.
- Gray snow mold: *Typhula* spp.
- Fusarium (Gerlachia) patch
- Algae



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Gray snow mold caused by *Typhula* spp. - Group A and B - Turf: Apply in sufficient water to obtain adequate coverage (90 to 450 gallons per acre). Apply one application of 13.6 pounds Ensign 82.5% (11.3 lbs. a.i.) per acre of turf area. 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 Ensign 82.5% at 13.6 pounds (11.3 lbs. a.i.) per acre 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 Ensign 82.5% at 13.6 pounds (11.3 lbs. a.i.) per acre in combination with products containing iprodione at 88 ounces active ingredient per acre 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 13.6 pounds of Ensign 82.5% (11.3 lbs. a.i.) per acre of turf area. Make application in late autumn. Group B - Turf: Apply a second application of 13.6 pounds Ensign 82.5% (11.3 lbs. a.i.) 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 turf grasses, apply Ensign 82.5% at the rate of 5 to 8.8 pounds (4.1 to 7.3 lbs. a.i.) per acre on a 7 to 14 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 turf grass recovery in conjunction with an Ensign 82.5% application at the rate of 10 to 13.6 pounds (8.25 to 11.3 lbs. a.i.) per acre. Group B - Turf: A second application of Ensign 82.5% at the 13.6 pound (11.3 lbs. a.i.) per acre rate may be made 14 days after the first application.

Group A and B - Turf: Following applications of the 13.6 pound (11.3 lbs. a.i.) rate, several applications of Ensign 82.5% at a rate of 5 to 8.8 pounds (4.1 to 7.3 lbs. a.i.) per acre on a 7 to 14 day interval may be necessary for turf grass recovery. Only a preventive spray program with Ensign 82.5% will prevent a recurrence of the algae when environmental conditions are favorable.

#### Ornamental Plants

Apply Ensign 82.5% at a rate of 1.4 pounds (1.16 lbs. a.i.) per 100 gallons of water unless other directions are given in the tables below. DO NOT apply more than 44 pounds Ensign 82.5% (36.4 lbs. a.i.) per 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 Ensign 82.5% at 7 day intervals. The minimum re-treatment interval is 7 days. Ensign 82.5% should be applied to plants when both foliage and flowers are dry, or nearly dry.

DO NOT combine Ensign 82.5% 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.

Ensign 82.5% may be used in greenhouses. DO NOT use mistblowers or high pressure spray equipment when making applications of Ensign 82.5% in greenhouses.

Use of Ensign 82.5% 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 Ensign 82.5% 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 Ensign 82.5% Broadleaf Shrubs And Trees

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

#### Flowering Plants <sup>a</sup> and Bulbs

Arabian Violet (2)	Iris (1,2)
Begonia (1)	Lily (1)
Camellia (2)	Marigold (1)
Carnation (1,2)	Narcissus (1)
Chrysanthemum (1,2)	Pansy (1)
Crocus (1)	Petunia (1,4)
Daffodil (1)	Phlox (1)
Daisy (1)	Poinsettia <sup>b</sup> (1)
Geranium (1,6)	Rose <sup>c</sup> (1)
Gladiolus (1,2)	Statice (1)
Hollyhock (6)	Tulip (1)
Hydrangea (foliage only) (1,6)	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>c</sup> Use 1 pound Ensign 82.5% (0.825 lbs. a.i.) per 100 gallons of water.

#### Foliage Plants

Aglaonema (1)	Ming aralia (1)
Areca palm (1)	Oyster plant (Rhoeo) (1)
Artemesia (1)	Pachysandra <sup>d</sup> (1)
Boston fern (1)	Parlor palm
Dumbcane (Dffenbachia) (1)	(Chamaedorea) (1)
Dracaena (1)	Peperomia (1)
Fatsia (Aralia) (1)	Philodendron (1,4)
Ficus (1)	Prayer plant (Maranta) (1)
Florida Ruffle Fern (1)	Syngonium (1)
Leatherleaf Fern (1)	Zebra plant (Aphelandra) (1)
Lipstick plant (1)	

<sup>d</sup> Use 2.5 pounds of Ensign 82.5% (2.1 lbs. a.i.) per 100 gallons of water.

#### Diseases Controlled with Ensign 82.5%

##### 1. Leaf spots/Foliar Blights:

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

##### 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:

*Erysiphe cichoracearum*  
*Microsphaera* spp.

##### 6. Rusts:

*Gymnosporangium* spp.  
*Pucciniastrum hydrangeae*  
*Puccinia* spp.

##### 7. Taphrina blister

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

# ENSIGN® 82.5%

## TURF AND ORNAMENTAL FUNGICIDE

### EPA REG. NO. 34704-965

The following ornamental plant species that have been tested with Ensign 82.5% at recommended rates did not exhibit phytotoxicity:

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

**NOTE:** DO NOT apply Ensign 82.5% to either green or variegated Pittosporum or to Schefflera, as multiple applications have been demonstrated to cause phytotoxic responses.

#### Tree and Orchard Crops

Apply Ensign 82.5% in sufficient water 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. If application with ground equipment is not feasible, Ensign 82.5% may be applied with aircraft using at least 20 gallons per acre. When concentrate sprays are used or when treating non-bearing or immature trees, the lower rate of Ensign 82.5% listed may be used. DO NOT allow livestock to graze in treated areas. The following spray volumes are recommended as gallons of spray per acre:

Crop	Spray Volume (Gallons per Acre)	
Peach	20 (concentrate) to 300 (full dilute)	
Nectarine		
Apricot		
Cherry (tart and sweet)		
Plum		
Prune		
<b>Conifers:</b>	<b>DILUTE</b>	<b>CONCENTRATE</b>
Forest stands	Not used	10 to 20 (aircraft)
Christmas trees	100	10 to 50 (aircraft or ground equipment)
Nursery beds	100	5 to 10 (ground equipment only)

CROP	DISEASES	ENSIGN 82.5% RATE		APPLICATION DIRECTIONS
		LBS. PRODUCT/A	LBS. PRODUCT/100 GAL.*	
Peach Nectarine Apricot Cherry Plum Prune	Leaf curl	2.8 to 3.8 lbs.	0.9 to 1.25 lbs.	For best control of both diseases apply at leaf fall in late autumn, using sufficient water and proper sprayer calibration to obtain uniform coverage. When conditions favor high disease levels use the high rate of application and apply once or twice more in mid to late winter before budswell. If the leaf fall application is not practical, application of Ensign 82.5% for control of leaf curl may be made at any time prior to budswell the following spring. Where Coryneum blight (shothole) occurs, also apply at budbreak to protect newly emerging leaves and at shuck split to prevent fruit infections.
	Coryneum blight (shothole)			
	Lacy (russet) scab (plum/prune)	2.8 to 3.8 lbs.	0.9 to 1.25 lbs.	
Conifers (pine, spruce)	Cherry leaf spot Peach Nectarine Apricot scab Black knot (cherry, plum)	2.8 to 3.8 lbs.	0.9 to 1.25 lbs.	Make one application at popcorn (pink, red or early white bud) and a second application at full bloom. If weather conditions favor disease development, make an additional application at petal fall.  In addition to the bloom application listed above, make one application at shuck split. DO NOT apply Ensign 82.5% after shuck split and before harvest. If additional disease control is needed before harvest, use another registered fungicide.  For control of cherry leaf spot after harvest, make one application to foliage within 7 days after fruit is removed. In orchards with a history of high leaf spot incidence, make a second application 10-14 days later.  DO NOT apply more than 18.8 pounds of Ensign 82.5% (15.5 lbs. a.i.) per acre during each growing season. The minimum re-treatment interval is 10 days.
	Swiss needlecast	2.5 to 5.0 lbs.	2.5 to 5.0 lbs.	<b>Single application technique:</b> In Christmas plantations or forest stands make one application in the spring when new shoot growth is ½ to 2 inches in length.
	Scleroderris canker (pines) Swiss needlecast	1.25 to 2.5 lbs.	1.25 to 2.5 lbs.	Make the first application in spring when new shoot growth is ½ to 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.
	Sirococcus tip blight	1.8 to 3.2 lbs.	1.8 to 3.2 lbs.	DO NOT apply more than 20 pounds Ensign 82.5% (16.5 lbs. a.i.) per acre during each growing season. The minimum re-treatment interval for established trees is 21 days. The minimum re-treatment interval in nursery beds is 7 days.
	Rhizosphaera needlecast (spruces) Scirrhia brown spot (pines)	5.0 lbs.	5.0 lbs.	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.
	Cyclaneusma and Lophodermium needlecasts (pines)	2.5 to 5.0 lbs.	2.5 to 5.0 lbs.	

**ENSIGN® 82.5%**  
**TURF AND ORNAMENTAL FUNGICIDE**  
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CROP	DISEASES	ENSIGN 82.5% RATE		APPLICATION DIRECTIONS
		LBS. PRODUCT/A	LBS. PRODUCT/100 GAL.*	
Conifers (pine, spruce)	Rhabdocline needlecast (Douglas fir)	1.4 to 2.5 lbs.	1.4 to 2.5 lbs.	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 Phoma twig blight	1.4 to 2.5 lbs.	1.4 to 2.5 lbs.	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.
	Autoecious needle rust (Weir's cushion) (spruce)	1.8 to 3.2 lbs.	1.8 to 3.2 lbs.	Begin applications when 10% of buds have broken and twice thereafter at 7-10 day intervals.

Specific Use Restrictions: DO NOT apply more than 20 pounds of Ensign 82.5% (16.5 lbs. a.i.) per acre during each growing season. The minimum re-treatment interval for established trees is 21 days. The minimum re-treatment interval in nursery beds is 7 days.

\*Volumetric rates to be used only with full dilute spray volume specified on this label for tree and orchard crops.

**STORAGE AND DISPOSAL**

DO NOT contaminate water, food or feed by storage or disposal. Open dumping is prohibited.

**PESTICIDE STORAGE:** Store in a dry place.

**PESTICIDE DISPOSAL:** Pesticide wastes are toxic. 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 DISPOSAL:** Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by alternative methods allowed by State and local authorities.

**For help with any spill, leak, fire or exposure involving this material, call day or night CHEMTREC 1-800-424-9300.**

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