GROUP 1 FUNGICIDE

TOPSIN® 4.5FL

FUNGICIDE

ACTIVE INGREDIENT:

Thiophanate-methyl (dimethyl[1,2-phenylene)-bis(iminocarbonothioyl)]bis[carbamate])*	45.0%
OTHER INGREDIENTS:	55.0%
TOTAL:	100.0%

Contains 4.5 lbs. thiophanate-methyl per gallon.

*Also known as dimethyl 4,4'-o-phenylenebis[3-thioallophanate]

TOPSIN is a registered trademark of Nippon Soda Company, Ltd., and is licensed to NISSO TM LLC, and is covered by one or more of the following U.S. Patents: 3,769,308; 3,856,847; 4,020,095; and 4,029,813.

EPA Reg. No. 8033-122-70506 **EPA Est. No. 61842-CA-001**

KEEP OUT OF REACH OF CHILDREN

CAUTION

FIRST AID

If inhaled:

- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.
- Call a poison control center or doctor for further treatment advice.

If on skin or clothing:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. Contact the Rocky Mountain Poison Control Center at 1-866-673-6671 for emergency medical treatment information.

FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800-424-9300.

FUNGICIDE

NET CONTENTS: 2.5 GALLONS

UPI

Sold by: **United Phosphorus, Inc.** • 630 Freedom Business Center, Suite 402 • King of Prussia, PA 19406 U.S.A. • 1-800-438-6071

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

Harmful if absorbed through the skin or inhaled. Avoid contact with skin, eyes or clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are nitrile and butyl rubber. If you want more options, follow the instructions for category C on an EPA chemical-resistance category selection chart.

Handlers mixing, loading, and applying the product as a dip (including application of product in Kaolinite clay to conifer seedling roots) must wear:

- Coveralls over long-sleeved shirt and long pants,
- Chemical-resistant gloves,
- Chemical-resistant footwear plus socks,
- Chemical-resistant apron.

All other mixers, loaders, and applicators must wear:

- Long-sleeved shirt and long pants,
- Shoes plus socks,
- Chemical-resistant gloves,
- Chemical-resistant apron for mixers, loaders, and other handlers exposed to the concentrate.

User Safety Requirements

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

ENGINEERING CONTROLS

When handlers use enclosed cabs 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.

Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Users should 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.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment wash water.

DIRECTIONS FOR USE

SHAKE WELL BEFORE USING

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

Do not apply this product in a way that will contact workers or other persons, 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.

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 worker entry into treated areas during the restricted-entry interval (REI).

Exemption: The Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

Do not enter or allow workers entry into treated areas during the restricted-entry interval (REI). The REI for each crop is listed in the directions for use associated with that crop.

Exemption: If this product is applied by drenching, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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 long-sleeved shirt and long pants,
- Chemical-resistant gloves made of any waterproof material,
- Chemical-resistant footwear plus socks,
- Chemical-resistant headgear for overhead exposures.

GENERAL INSTRUCTIONS AND INFORMATION

Apply Topsin 4.5FL with ground or aerial equipment, using sufficient volume of spray to provide thorough coverage. Continuous agitation is required to keep the material in suspension. United Phosphorus, Inc. does not recommend tank mixes with highly alkaline pesticides, such as Bordeaux mixture or lime sulfur. No claim of compatibility with other pesticides is implied. Use the higher rate under conditions of severe disease pressure. Also, see local State Extension Service recommendations for application schedules.

Use the fl. oz./Acre rate for concentrate sprays (less than 400 gallons on apples, less than 300 gallons on stonefruit). Use the fl. oz./100 gals. rate for dilute ground applications. For aerial applications, use a minimum of 5 gallons/A for row crops, and a minimum of 10 gallons/A for tree crops. For ground applications use a minimum of 20 gallons/A for row crops and 30 gallons/A for tree crops. Higher spray volume will generally result in better coverage and better disease control. Lack of control when using below minimum spray volumes is solely at the risk of the applicator/user, including use of electrostatic sprayers.

Chemigation instructions follow. Do not apply through any irrigation system unless these instructions are followed.

For crops without labeled uses of thiophanate-methyl, observe a 30-day plant-back restriction.

Use on all labeled non-bearing tree fruit and tree nuts: Topsin 4.5FL may be used for control of the diseases listed on the label for these crops during the non-bearing years of new plantings, and on nursery stock. All use directions and limitations must be followed, except for the PHI, which is not applicable. Begin applications as disease is first observed or expected. Tank mixing with a protectant fungicide is strongly recommended for resistance management.

RESISTANCE MANAGEMENT: To avoid the development of tolerant or resistant strains of fungi, Topsin 4.5FL should always be tank-mixed with a fungicide of different chemistry, and/or a fungicide of different chemistry should be alternated with Topsin 4.5FL. DO NOT USE PRODUCTS CONTAINING THIABENDAZOLE OR OTHER PRODUCTS CONTAINING THIOPHANATE-METHYL IN COMBINATION, IN ROTATION, OR AS A SUBSTITUTE FOR TOPSIN 4.5FL AS THEY ARE OF SIMILAR CHEMISTRY AND WILL CONTRIBUTE TO THE DEVELOPMENT OF RESISTANCE. If after using Topsin 4.5FL as recommended, and the treatment is not effective, a tolerant or resistant strain of fungi may be present. Discontinue the use of Topsin 4.5FL for at least one season. As long as these precautions are followed, Topsin 4.5FL can be useful for disease control, even if resistant strains are present.

CROP	DISEASES	FL. OZ./ ACRE	FL. OZ./ 100 GALS.	REMARKS
Almonds Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 3 days.	Brown Rot Blossom Blight (**Monilinia**) Scab (**Cladosporium**) Jacket Rot (**Monilinia, Sclerotinia, Botrytis**) Leaf Blight (**Seimatosporium**)	20 - 30		Apply as needed between pink bud and petal fall. Topsin 4.5FL may be applied alone at pink bud for Brown Rot control. For all other applications, Topsin 4.5FL should be applied with a contact fungicide such as Ziram 76DF for broad-spectrum control and resistance management. Do not apply more than 60 fl. oz. of product (2.1 lbs. a.i.)/A/year.
Apples Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 2 days.	Apple Scab (**Venturia**) Black Pox* (**Helminthosporium papulosum**) Flyspeck (**Zygophiala**) Powdery Mildew (**Podosphaera**) Sooty Blotch (**Gloeodes**) Black Rot (**Botryosphaeria obtusa**) Brooks Fruit Spot (**Mycosphaerella**) White Rot* (**Botryosphaeria dothidia**)	15 - 20 (in CA use 30)	3.75 - 5	Apply at 5- to 10-day intervals from green tip through petal fall; continue at 7- to 14-day intervals in cover sprays. Do not apply more than 80 fl. oz. of product (2.8 lbs. a.i.)/A/year. Pre-harvest interval: 1 day. Follow resistance management guidelines under Directions for Use.
	Pre-Harvest use to control Post-Harvest Diseases on Apples			
	Storage Rot Blue Mold (**Penicillium expansum**) Gray Mold (**Botrytis cinerea**) Bulls-Eye Rot (**Neofabraea spp.**)	1	3.75 - 5	Apply as a pre-harvest spray within 2 weeks to 3 days of harvest. Thorough coverage of the fruit is required. Application closer to harvest may provide better efficacy. For resistance management, do not use a benzimidazole fungicide (i.e. Mertect®) post-harvest following Topsin 4.5FL pre-harvest application. Application of a non-benzimidazole post-harvest fungicide such as Penbotec™ or Schlor® will provide additional protection from post-harvest diseases. Do not apply more than 80 fl. oz. of product (2.8 lbs. a.i.)/A/year. Pre-harvest interval: 1 day.
Beans, dry and succulent Including: Lima bean Snap bean Kidney bean Mung bean Navy bean Pinto bean Wax bean Broad bean Fava bean Asparagus bean Blackeyed pea Cowpea Sweet lupine White lupine White Sweet lupine Grain lupine Chick pea Garbanzo bean Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours for succulent beans and 3 days for dry beans.	White Mold (**Sclerotinia**) Gray Mold (**Botrytis**) Anthracnose (**Colletotrichum**)	30 - 40 **OR** 20 - 30		For one application: Apply when 100% of plants have at least one open bloom or when conditions are favorable for disease development. **OR** For multiple applications: Make the first application when 10% to 30% of plants have at least one open bloom and follow with sequential applications on a 4- to 7-day interval. Apply prior to the development of disease for best results. Do not apply more 80 fl. oz. of product (2.8 lbs. a.i.)/A/year. Pre-harvest Interval: **California only**, 14 days for succulent beans, 28 days for dry beans and lima beans. Pre-harvest Interval: **all other States**, 14 days for succulent beans and lima beans, 28 days for dry beans.

*Not for this use in California *(continued)*

NOTE: Dilute sprays are not to exceed maximum rate per acre.

CROP	DISEASES	FL. OZ./ ACRE	FL. OZ./ 100 GALS.	REMARKS
Cucurbits Cantaloupe, Casaba, Cucumbers, Melons, Pumpkins, Summer and Winter Squash, and Watermelons Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.	General Information			Do not apply more than 60 fl. oz. of product (2.1 lbs. a.i.)/A/year from any combination of application timings. Pre-harvest interval: 1 day. Topsin 4.5FL can be used in a tank mix with Penncozeb® (mancozeb) or chlorothalonil for additional disease control and resistance management. Follow resistance management guidelines under Directions for Use.
	Acremonium/ Cephalosporium Hypocotyl Rot	10		Apply in-furrow, on top of the seeds at planting. Do not use less than 10 gallons of water per acre.
	Anthracnose* (**Colletotrichum**) Gummy Stem Blight* (**Didymella**) Powdery Mildew (**Erysiphe, Sphaerotheca**) Target Spot* (**Corynespora**)	10		Begin applications when plants begin to run or when disease first appears, and repeat at 7- to 14-day intervals or as needed. For Target Spot, use at 7-day intervals as needed.
	Belly Rots* (**Rhizoctonia, Fusarium**)	10		Apply in sufficient volume to allow runoff to the soil. Will not control Pythium or Phytophthora.
	Suppression of Vine Decline (**Monosporascus**) Charcoal Rot (**Macrophomina**)	10		Apply through buried drip irrigation (chemigation) to the root zone. For disease suppression, apply at 14-day intervals, beginning at emergence and continuing to harvest. Applications weekly or biweekly, beginning 4 to 6 weeks prior to harvest will also offer suppression, but may not be as effective as a season-long program.
Garlic (clove treatment)	Penicillium Clove Rot		20	Completely immerse garlic cloves in suspension for at least 5 minutes. Continuously agitate the solution tank by hydraulic or mechanical means. After treatment, remove cloves from solution and drain. Dry cloves after treatment and prior to planting.
Onions* Garlic (In furrow) Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 3 days.	White Rot (**Sclerotium cepivorum**)	40 broadcast		Spray directly into the open furrow at the time of planting seed, sets or bulbs. Not for this use through any type of irrigation system. Do not apply more than 40 fl. oz. of product (1.4 lbs. a.i.)/A/year.
Peanuts Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.	Early Leaf Spot (**Cercospora**) Late Leaf Spot (**Cercosporidium**) Rust (**Puccinia**) Limb Rot (**Rhizoctonia**) Web Blotch (**Ascochyta**)	10		Begin applications when disease first appears and repeat at 14-day intervals as needed. Do not apply more than 40 fl. oz. of product (1.4 lbs. a.i.)/A/year. Pre-harvest interval: 14 days. Topsin 4.5FL should not be used alone. Use only in combination with a non-benzimidazole fungicide such as Penncozeb® 75DF (mancozeb) at 1 1/2 lbs. per acre or chlorothalonil. Follow resistance management guidelines under Directions for Use.

*Not for this use in California *(continued)*

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CROP	DISEASES	FL. OZ./ ACRE	FL. OZ./ 100 GALS.	REMARKS
Pecans Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 3 days.	Brown Spot (**Cercospora**) Downy Spot (**Mycosphaerella**) Liver Spot (**Gnomonia**) Powdery Mildew (**Microsphaera**) Scab (**Fusicladium**) Stem End Blight (**Botryosphaeria**) Zonate Leaf Spot (**Cristulariella**)	20		Begin applications when first leaves are showing and repeat at 3- to 4-week intervals until shuck split. Do not apply after shuck split. Do not apply more than 60 fl. oz. of product (2.1 lbs. a.i.)/A/year. Follow resistance management guidelines under Directions for Use.
Pistachios Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 3 days.	Shoot Blight (**Botrytis, Botryosphaeria**)	30 - 40		Apply at bloom. Apply in a minimum of 100 gallons per acre by ground or 20 gallons per acre by air. For aerial application, fly over every row or center. Do not apply more than 40 fl. oz. of product (1.4 lbs. a.i.)/A/year.
Potatoes Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 2 days.	White Mold (**Sclerotinia sclerotiorum**)	20 - 30		Make the first application at row closure to full bloom of the primary flower clusters (prior to petal drop). Repeat the application within 7 to 14 days and at 7- to 14-day intervals if conditions for disease development are favorable. Thorough coverage of the flowers, stems, and branches is essential for disease control. Use a minimum of 6 gallons/A for aerial application. Apply prior to the development of disease for the best results. Do not apply more than 80 fl. oz. of product (2.8 lbs. a.i.)/A/year. Pre-harvest interval: 21 days. May be tank mixed with Penncozeb® (mancozeb) for Early and Late Blight control.
Soybeans Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.	General Information			Do not apply more than 40 fl. oz. of product (1.4 lbs. a.i.)/A/year. Pre-harvest interval: 21 days. Do not graze or feed treated vines or hay to livestock.
	Anthracnose (**Colletotrichum**) Brown Spot (**Septoria**) Frogeye Leaf Spot (**Cercospora**) Pod and Stem Blight (**Diaporthe, Phomopsis**) Purple Seed Stain (**Cercospora**)	10 - 20		Apply from full bloom to when pods are 1/8" to 1/4" in length. Make a second application 14 to 21 days later. Do not make the second application later than 14 days after pods average 1/4" in length or when beans form in the pod. Use the high rate under severe disease pressure.
		20		FOR SEED BEANS ONLY — For seed quality, make a single application when beans form in the pod.
	White Mold (**Sclerotinia**)	15 - 20		Make one application at early bloom (R-1 to R-2 stage) followed by a second application 7 to 14 days later if conditions are favorable for continued disease pressure. Thorough coverage of the flowers, stems, and branches is essential for disease control. Use a minimum of 5 gallons water/A by air.
	Aerial Blight (suppression)	20		Make initial application when disease threatens and repeat 14 to 21 days later if needed.

*Not for this use in California

(continued)

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CROP	DISEASES	FL. OZ./ ACRE	FL. OZ./ 100 GALS.	REMARKS
Stone Fruit Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 2 days.	General Information			Do not apply more than 80 fl. oz. of product (2.8 lbs. a.i.)/A/year. Pre-harvest interval: 1 day. Follow resistance management guidelines under Directions for Use.
Apricots	Brown Rot Blossom Blight Fruit Brown Rot (**Monilinia**)	20 - 30 (in CA use 30)	6.7 - 10	Apply at early bloom (red bud). Make a second application at full bloom. If needed under severe disease pressure, apply additional sprays at 10- to 14-day intervals between full bloom and final pre-harvest sprays.
Cherries Sweet and Sour	Brown Rot Blossom Blight Fruit Brown Rot (**Monilinia**)	20 - 30 (in CA use 30)	6.7 - 10	Apply at early bloom (early popcorn). Make a second application at full bloom. If needed under severe disease pressure, apply additional sprays at 10- to 14-day intervals between full bloom and final pre-harvest sprays.
	Cherry Leaf Spot (**Coccomyces**)	22.5 - 30	7.5 - 10	Applications may be made at petal fall or before (when leaves first unfold) and at first, second, and third cover at 10- to 14-day intervals and one spray 14 to 21 days after harvest.
	Powdery Mildew (**Podosphaera, Sphaerotheca**)	20 - 30 (in CA use 30) **PLUS** 22.5 - 30	6.7 - 10 **PLUS** 7.5 - 10	Apply at early bloom (early popcorn). Make a second application at full bloom. **PLUS** Apply at shuck fall and first cover.
Nectarines	Brown Rot Blossom Blight Fruit Brown Rot (**Monilinia**)	20 - 30 (in CA use 30)	6.7 - 10	Apply at early bloom (pink bud). Make a second application at full bloom if conditions favor disease development. If needed under severe disease pressure, apply additional sprays at 10- to 14-day intervals between full bloom and final pre-harvest sprays.
Peaches	Brown Rot Blossom Blight Fruit Brown Rot (**Monilinia**)	20 - 30 (in CA use 30)	6.7 - 10	Apply at early bloom (pink bud). Make a second application at full bloom if conditions favor disease development. If needed under severe disease pressure, apply additional sprays at 10- to 14-day intervals between full bloom and final pre-harvest sprays.
	Peach Scab (**Cladosporium**)	20 - 30 (in CA use 30) **PLUS** 22.5 - 30	6.7 - 10 **PLUS** 7.5 - 10	Apply at early bloom (pink bud). Make a second application at full bloom if conditions favor disease development. **PLUS** Apply at shuck split and at first cover sprays.
Plums and Prunes	Brown Rot Blossom Blight Fruit Brown Rot (**Monilinia**)	20 - 30 (in CA use 30)	6.7 - 10	Apply at early bloom (green tip). Make a second application at full bloom. If needed under severe disease pressure, apply additional sprays at 10- to 14-day intervals between full bloom and final pre-harvest sprays.
	Black Knot (**Dibotryon**)	20 - 30 (in CA use 30)	6.7 - 10	Apply at pre-bloom, petal fall, and at first, second, or third cover sprays at 10- to 14-day intervals.
	Leaf Spot (**Coccomyces**)	20 - 30 (in CA use 30)	6.7 - 10	Applications may be made at petal fall, shuck split, and at first, second, and third cover sprays at 10- to 14-day intervals and 1 spray 14 to 21 days after harvest.

*Not for this use in California

(continued)

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CROP	DISEASES	FL. OZ./ ACRE	FL. OZ./ 100 GALS.	REMARKS
Strawberries Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.	General Information			Do not apply more than 80 fl. oz. of product (2.8 lbs. a.i.)/A/year. Pre-harvest interval: 1 day. Follow resistance management guidelines under Directions for Use.
	Crown Rot* (**Colletotrichum spp.**) Suppression only	15 - 20		Begin applications after establishment of the transplants and continue thru first bloom at 10- to 14-day intervals. Use the high rate if the fields have a history of Colletotrichum crown rot and/or conditions are favorable for development of the disease. Will not control Phytophthora species.
	Fruit Rot (**Botrytis**) Leaf Blight (**Dendrophoma**) Leaf Scorch (**Diplocarpon**) Powdery Mildew (**Sphaerotheca**)	15 - 20		Begin applications at early bloom and continue at 7- to 10-day intervals. Use the higher rate under conditions of severe disease pressure.
Sugar Beets Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.	General Information			Do not apply more than 60 fl. oz. of product (2.1 lbs. a.i.)/A/year. Pre-harvest interval: 21 days. Follow resistance management guidelines under Directions for Use.
	Cercospora Leaf Spot (**Cercospora**)	10 - 20		Apply when conditions become favorable for disease development before the disease appears and follow with a non-benzimidazole fungicide within 14 days of application or as needed. Topsin 4.5FL should be tank mixed with a protectant fungicide such as Penncozeb® or Super Tin® when resistant strains of Cercospora are present in the field. For areas east of the Rocky Mountains: Do not make more than one application of Topsin 4.5FL per season for Cercospora Leaf Spot.
	Powdery Mildew (**Erysiphe**)	10 - 20		Apply as soon as disease symptoms appear and follow with a non-benzimidazole fungicide at a 14-day interval or as needed. Topsin 4.5FL can be tank-mixed with sulfur products such as Microthiol® Disperss® at 5 to 10 lbs./A for additional disease control and resistance management.
Triticale and Fall-seeded Wheat **For this use in Idaho, Oregon, and Washington ONLY** Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.	Foot Rot, Strawbreaker, Eye Spot (**Pseudocercosporella**)	20		Apply Topsin 4.5FL at the rate indicated in a single application by air or ground after tillering but before stem elongation has begun. Use sufficient water to obtain thorough coverage. Do not apply more than 20 fl. oz. of product (0.7 lb. a.i.)/A/year. Do not cut for hay within 90 days of application. Do not allow livestock to graze in treated areas before harvest.

*Not for this use in California

NOTE: Dilute sprays are not to exceed maximum rate per acre.

DIRECTIONS FOR USE ON CONIFERS

(Not for this use in California)

CROP	DISEASE	RATE (LB./A), MINIMUM GALLONAGE	REMARKS
Conifers (Pine) Austrian Red Scots Christmas Trees	Tip Blight (**Diplodia**)	20 fl. oz. per 100 gals./A	Apply at bud break. Repeat 10 to 14 days later, just before needles emerge from sheath; repeat again 10 to 14 days after needle emergence. Do not apply more than 60 fl. oz. of product (2.1 lbs. a.i.)/A/year.
(Fir) Douglas	Swiss Needle Cast (**Phaecryptopus**) Rhabdocline Needle Cast	20 fl. oz. per 50 gals./A	Apply initially in early May. Repeat at 4-week intervals. Do not apply more than 100 fl. oz. of product (3.5 lbs. a.i.)/A/year.
• Add a spreader/sticker to improve coverage. • Use minimum gallonage with mist-blower types of sprayers and higher gallonage with conventional sprayers. • Do not graze livestock in treated areas. • Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.			
Conifers (seedling treatment) Longleaf	Brown Needle Blight (**Scirrhia**)	1.25 fl. oz. product per 9.5 oz. dry Kaolinite clay for seedling roots	Wet seedling roots in clean water, then apply Topsin 4.5FL/Kaolinite mixture to wet roots. Do not apply mixture to seedling foliage.
Loblolly Longleaf Slash	Fusarium and Rhizoctonia Root Rot	2.5 fl. oz. product per 50 oz. Kaolinite clay, plus enough water to make a slurry	Thoroughly cover seedling roots with Topsin 4.5FL/Kaolinite slurry. Do not apply mixture to seedling foliage.
• During treatment, avoid excessive drying of roots or exposure to temperatures greater than 90°F or less than 32°F. • Topsin 4.5FL does not control Pythium or Phytophthora. • Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.			

DIRECTIONS FOR USE THROUGH CHEMIGATION SYSTEMS

USE IN CALIFORNIA BY CHEMIGATION ONLY FOR BEANS, CUCURBITS (CANTALOUPE, CASABA, CUCUMBERS, MELONS, PUMPKINS, SQUASH, WATERMELONS), PEANUTS, POTATOES, SOYBEANS, STRAWBERRIES, AND SUGAR BEETS.

GENERAL INSTRUCTIONS

Apply this product only through sprinkler irrigation systems including center pivot, lateral move, end tow, side (wheel) roll, traveler, solid set or hand move; or drip (mini-micro sprinklers, strip tubing, trickle) irrigation systems. Do not apply this product through any other type of irrigation system.

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

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

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Do not connect chemigation system (including greenhouse systems) used for pesticide irrigation to any public water system unless the pesticide label-prescribed safety devices for public water systems are in place. Public water system means a system for the provision of piped water for human consumption if such a system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

SYSTEM REQUIREMENTS

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

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 pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

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.

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.

APPLICATION INSTRUCTIONS

Observe the requirements in the System Requirements section above.

Apply Topsin 4.5FL only through systems containing anti-syphon and check valves designed to prevent water source contamination or overflow of the mix tank and containing interlocking controls between the metering device and the water pump to insure simultaneous shut-off.

Maintain a gentle continuous agitation in mix tank during mixing and application to assure a uniform suspension.

Greater accuracy in calibration and distribution will be achieved by injecting a larger volume of a more dilute suspension per unit time.

Application of more than recommended quantities of irrigation water per acre may result in decreased product performance.

Do not apply when wind speed favors drift, when system connections or fittings leak, when nozzles do not provide uniform distribution or when lines containing the product cannot be flushed and must be dismantled and drained. In a center pivot system, block the nozzle set nearest the well/pivot/injection unit to prevent spray being applied to this area.

Where sprinkler distribution patterns do not overlap sufficiently, unacceptable disease control may result.

Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation water.

Topsin 4.5FL may be applied in conjunction with chemically neutral liquid fertilizers. Application in conjunction with highly alkaline fertilizers, such as aqueous ammonia, is likely to cause a degradation of the pesticide, resulting in reduced performance and should be avoided.

SPRAY PREPARATION:

Remove scale, pesticide residues, and other foreign matter from the chemical tank and entire injector system. Flush with clean water. Prepare a suspension of Topsin 4.5FL in a mix tank. Fill the tank with 1/2 or 3/4 the desired amount of water. Start mechanical or hydraulic agitation. Slowly add the required amount of Topsin 4.5FL and then the remaining volume of water.

Sprinkler Irrigation - Notes

Observe all System Requirements and Application Instructions above.

Set sprinkler system to deliver a maximum of 0.4 inch of water per acre. Volumes of water higher than this may reduce efficacy. Start sprinkler and then uniformly inject the suspension of Topsin 4.5FL into the irrigation water line so as to deliver the desired rate per acre. The suspension of Topsin 4.5FL should be injected with a positive displacement pump into the main line ahead of a right angle turn to insure adequate mixing. When treatment with Topsin 4.5FL has been completed, do not irrigate the treated area for 24 to 48 hours to prevent washing the chemical off the crop.

Do not apply when wind speed favors drift beyond the area intended for treatment.

Where sprinkler distributed patterns do not overlap sufficiently, unacceptable disease control may result.

Check local restrictions and requirements regarding sprinkler irrigation applications, as they may vary from state to state.

Drip (Mini-Micro Sprinklers, Strip Tubing, Trickle) Irrigation - Notes

Observe all System Requirements and Application Instructions above.

A pesticide supply tank is recommended.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store in the original container in a dry area. Do not store in a manner where cross-contamination with other pesticides, fertilizers, food or feed could occur. If spilled during storage or handling, absorb with sand or other inert material and dispose of absorbent in accordance with the Pesticide Disposal Instructions listed below.

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, 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: Nonrefillable container. Do not reuse or refill this container.

For containers ≤ 5 gallons:

Clean container 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 or 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.

For containers > 5 gallons:

Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. 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.

EMERGENCY TELEPHONE NUMBERS:

CHEMTREC: (800) 424-9300

MEDICAL: (866) 673-6671 Rocky Mountain Poison Control Center

IMPORTANT INFORMATION
READ BEFORE USING PRODUCT

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.

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