

PM-21

Reg # 4581-352

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elf atochem**ATO****PROPOSED LABEL
ACCEPTED**

OCT 6 1995

Under the Federal Insecticide,
Fungicide, and Rodenticide Act,
as amended, for the pesticide
registered under
EPA Reg. No. 4581-352**NOT FOR USE IN CALIFORNIA
SHAKE WELL BEFORE USING****TOPSIN® M 4.5F****TURF AND ORNAMENTALS FUNGICIDE****4.5 Pounds per Gallon Flowable****ACTIVE INGREDIENT:**Thiophanate-methyl (dimethyl[(1,2-phenylene)-
bis(iminocarbonothioyl)]bis(carbamate))*

46.2%

INERT INGREDIENTS:

53.8%

TOTAL: 100.0%

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

*TOPSIN is a registered trademark of Nippon Soda Company, Ltd., and is licensed to Elf Atochem North America. Covered by one or more of the following U.S. Patents: 3,769,308; 3,856,847; 4,020,095; and 4,029,813.

**KEEP OUT OF REACH OF CHILDREN
CAUTION****STATEMENT OF PRACTICAL TREATMENT****IF SWALLOWED**, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Call a physician. Never give anything by mouth to an unconscious person.**IF IN EYES**, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.**IF ON SKIN**, immediately flush skin with plenty of water.**IF INHALED**, remove victim to fresh air. If not breathing, give artificial respiration. Get medical attention.

EPA Reg. No. 4581-352

EPA Est. No. _____

Sold by:

**ELF ATOCHEM NORTH AMERICA, INC.
AGCHEM DIVISION**

2000 Market Street, Philadelphia, PA 19103

DIRECTIONS FOR USE

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.

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) 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, such as barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, polyvinyl chloride (PVC) ≥ 14 mils, Viton ≥ 14 mils; and
- shoes plus socks.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS (AND DOMESTIC ANIMALS)

CAUTION

HARMFUL IF SWALLOWED, ABSORBED THROUGH SKIN, OR INHALED.
CAUSES MODERATE EYE IRRITATION

PERSONAL PROTECTIVE EQUIPMENT

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

Applicators and other handlers must wear:

- long-sleeved shirt and long pants;
- chemical-resistant gloves, such as barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, polyvinyl chloride (PVC) ≥ 14 mils, Viton ≥ 14 mils; and
- shoes plus socks.

For exposures in enclosed areas, a respirator with either an organic vapor-removing cartridge with a pre-filter approved for pesticides (MSHA/NIOSH approval number prefix TC-236), or a canister approved for pesticides (MSHA/NIOSH approval prefix TC-14G).

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.

USER SAFETY RECOMMENDATIONS:

Users should:

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

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

This pesticide is toxic to fish. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply where runoff is likely to occur. Do not contaminate water when disposing of equipment washwaters.

GENERAL INFORMATION

Apply TOPSIN M with ground or aerial equipment, using sufficient volume of spray to provide thorough coverage. Add required amount of TOPSIN M to partially filled tank agitated by mechanical or hydraulic means and then add remaining required amount of water. Continuous agitation is required to keep the material in suspension. Do not tank mix with highly alkaline pesticides, such as Bordeaux mixture or lime sulfur. No claim of compatibility with other pesticides is implied. Use the higher rates under conditions of severe disease pressure. Also, see local State Extension Service recommendations for application schedules.

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

RESISTANCE MANAGEMENT: To avoid the development of tolerant or resistant strains of fungi, TOPSIN M should always be tank-mixed with a fungicide of different chemistry, and/or a fungicide of different chemistry should be alternated with TOPSIN M at each application. ELF ATOCHEM DOES NOT RECOMMEND THE USE OF PRODUCTS CONTAINING BENOMYL OR THIABENDAZOLE IN COMBINATION OR IN ROTATION WITH TOPSIN M. If after using TOPSIN M as recommended, the treatment is not effective, a tolerant or resistant strain of fungi may be present. Discontinue the use of TOPSIN M for at least one season. Do not use products containing benomyl or thiabendazole as substitutes for TOPSIN M, as they are of similar chemistry and will contribute to the development of resistance. As long as these precautions are followed, TOPSIN M can be useful for disease control, even if resistant strains are present.

TURF

For use on all fine turf applications such as industrial lawns, athletic fields, home lawns (by professional applicators), cemeteries, golf course greens, tees, and fairways of Bentgrasses, Bluegrasses, Bermudagrasses, Fescues, Ryegrasses, St. Augustinegrasses, or their mixtures. TOPSIN M 4.5F is not phytotoxic to any of the above mentioned grasses when used in accordance with the label. TOPSIN M 4.5F is to be used for the prevention and control of the below mentioned diseases (provides both curative and protective action).

Use spray mixture the same day it is prepared. Spray uniformly over the area to be treated with a properly calibrated power sprayer. Apply after mowing or avoid mowing for twelve hours after application.

Apply recommended amounts in sufficient water to obtain thorough coverage, usually five gallons per 1,000 square feet of turf area. When treating golf greens, always treat aprons and approaches. Use the highest recommended rate under conditions of severe disease pressure.

FUSARIUM BLIGHT (*Fusarium roseum*), **SUMMER PATCH** (*Magnaporthe poae*), **NECROTIC RING SPOT** (*Leptosphaeria korrae*)—Apply TOPSIN M 4.5F at 5-10 fluid ounces per 1,000 square feet. Water into the root zone by irrigating with one inch of water immediately after application. Make two applications at 10-14 day intervals, beginning applications when the disease first appears.

DOLLAR SPOT (*Sclerotinia homoeocarpa*), **ANTHRACNOSE** (*Colletotrichum graminicola*)—Apply TOPSIN M 4.5F at 1 to 2 fluid ounces per 1,000 square feet beginning when the disease first appears. Spray should dry on leaf surfaces with no "watering in." Continue at 10-14 day intervals through the season or as needed.

LARGE BROWN PATCH (*Rhizoctonia solani*), **COPPER SPOT** (*Gloeocercospora sorghi*), **RED THREAD** (*Corticium fuctiforme*), **FUSARIUM PATCH** (*Fusarium nivale*)—Apply TOPSIN M 4.5F at 1 to 2 fluid ounces per 1,000 square feet beginning when the disease first appears and continue at 10-14 day intervals through the season or as needed. Spray should dry on leaf surfaces with no "watering in." When conditions are unusually favorable for development of disease, reduce interval to 5 to 7 days.

STRIPE SMUT (*Ustilago striiformis*)—Apply TOPSIN M 4.5F at 5 to 10 ounces per 1,000 square feet. Water into the root zone by irrigating with one inch of water immediately after application. Make two applications at 14-21 day intervals. Begin applications when the disease first appears, either in the spring or fall.

Note to user: Do not apply to areas likely to be grazed by livestock and do not feed clippings to livestock or poultry.

ORNAMENTALS (FIELD AND GREENHOUSE)

TOPSIN M 4.5F is a broad spectrum systemic fungicide which controls a variety of diseases on woody and herbaceous ornamental crops.

TOPSIN M 4.5F is also effective as a preplant dip on cuttings and bulbs. This product may be used to control the listed diseases on ornamental almond, apple, apricot, cherry, nectarine, peach, pecan, plum, and pine trees.

Do not exceed recommended rates or apply more frequently than directed, or plant injury may occur.

NOTICE TO USER: Plant tolerances to TOPSIN M have been found to be acceptable for the specific genera and species listed on this label. Due to the large number of species and varieties of ornamentals and nursery plants, it is impossible to test every one for tolerance to TOPSIN M. Neither the manufacturer nor the seller has determined whether or not TOPSIN M can be used safely on ornamental and nursery plants not specified on this label. The professional user should determine if TOPSIN M can be used safely prior to commercial use. In a small area, test the recommended rates for a particular group of unlabeled plants, i.e., bedding plants, foliage, etc., for phytotoxicity prior to widespread use.

FOLIAR SPRAY—

PLANT TYPES AND DISEASES CONTROLLED

DISEASE(S) CONTROLLED

Anthraxnose
Ascochyta Blight
Black Spot
Botrytis (Gray Mold)
Cercospora Leaf Spot
Corynespora Leaf Spot
Diarmellina Leaf Spot
Diplodea Tip Blight
(Diplodea pisa)
Ovulinia
Entomosporium Leaf Spot
Phomopsis Blight
Powdery Mildew

Ramularia Leaf Spot
Scab

Septoria Leaf Spots

PLANT TYPES

woody ornamentals, shade trees (1)
herbaceous ornamentals
roses
woody and herbaceous ornamentals
woody and herbaceous ornamentals
ligustrum
iris
shade and ornamental trees
azalea, rhododendron(2)
woody and herbaceous ornamentals
woody and herbaceous ornamentals
woody and herbaceous ornamentals,
ornamental nut and fruit trees
herbaceous ornamentals
pyracantha, flowering crab,
ornamental fruit and nut trees
woody and herbaceous ornamentals

KEY TO NOTES:

- (1) Begin at bud break and make 2 or 3 additional applications at 10 to 14 day intervals.
 - (2) Begin treatment as flowers open.
- Addition of a surfactant to the spray mixture improves distribution of the spray on hard-to-wet plants such as roses.

I. FOLIAR SPRAY—HYDRAULIC APPLICATION

Mixing Instructions: Add required amount of TOPSIN M 4.5F to partially filled tank agitated by mechanical or hydraulic means and then add remaining required amount of water. Maintain continuous agitation to keep the material in suspension and apply with properly calibrated spray equipment. Apply until leaves glisten, but not to point of runoff.

Application Rates and Timing for Disease Control: Begin application when disease first appears and repeat at 10 to 14 day intervals during the growing season. Shorten the interval during humid, rainy weather.

Ground Application—Use 20 fluid ounces of TOPSIN M 4.5F per 100 gallons of water. For control of Powdery Mildew and Botrytis (Gray Mold), use 10 fluid ounces of TOPSIN M 4.5F per 100 gallons of water, or 1 teaspoonful per 2 gallons of water.

Aerial Application—Use 10-20 fluid ounces of TOPSIN M 4.5F per acre.

II. DRENCH—PLANT TYPES AND DISEASES CONTROLLED

DISEASE(S) CONTROLLED

Botrytis
Fusarium
Rhizoctonia
Sclerotinia stem, crown
and root rots
Cylindrocladium rot
Thielaviopsis rot

PLANT TYPES

herbaceous annuals, perennials
and bedding plants
herbaceous annuals, perennials
and bedding plants
herbaceous annuals, perennials
and bedding plants
herbaceous annuals, perennials
and bedding plants
woody ornamentals (such as
azaleas, rhododendrons,
conifers, poinsettias)
woody ornamentals (such as
azaleas, rhododendrons,
conifers, poinsettias)

NOTE: TOPSIN M 4.5F does not control *Pythium* spp. or *Phytophthora* spp.

Mixing Instructions: Add required amount of TOPSIN M 4.5F to partially filled tank agitated by mechanical or hydraulic means and then add remaining required amount of water. Maintain continuous agitation to keep the material in suspension.

Application Rates and Timing for Disease Control: Use 10-20 fluid ounces of TOPSIN M 4.5F per 100 gallons of water. Apply as a drench or heavy spray to 800 sq. ft. of bench area (1 to 2 pints per square foot) into propagation beds or containers after transplants are fully established and growing in. Repeat at 2 to 4 week intervals during periods favorable for disease.

Use the low rate and do not exceed one application as phytotoxicity may occur on certain varieties of the following crops: impatiens, kalanchoe, primrose.

Use the low rate and do not exceed two applications as phytotoxicity may occur on certain varieties of the following crops: african violet, english ivy, gloxinia, japanese maple, pepperonia, pin oak, rhododendron.

PREPLANT DIP TREATMENT —

PLANT TYPES AND DISEASES CONTROLLED:

DISEASE(S) CONTROLLED

All diseases listed under
drench treatment
Fusarium and Penicillium
rots

PLANT TYPES

plants or cutting of woody and
herbaceous ornamentals
bulbs (Easter lily, tulip
gladiolus, daffodils)

Application Rates and Timing for Disease Control:

Plants or cuttings—Use 20 fluid ounces of TOPSIN M 4.5F per 100 gallons of water. Immerse plants or cuttings for 10 to 15 minutes; remove and allow to drain. Wear rubber gloves.

Bulbs—Use 33 fluid ounces of TOPSIN M 4.5F per 100 gallons of water, or 2 teaspoonfuls of TOPSIN M 4.5F per gallon of water. Soak cleaned bulbs for 15 to 30 minutes in warm dip (80 to 85 degrees F) preferably within 48 hours of digging. Dry bulbs after treatment. If bulbs are for forcing, treat bulbs that have been heat-cured.

CHEMIGATION

NOT FOR THIS USE IN CALIFORNIA

GENERAL INSTRUCTIONS

Apply this product only through sprinkler irrigation systems including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move. 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 an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

INSTRUCTIONS FOR CHEMIGATION SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS

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 30 days out of the year.

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.

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 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, or in cases where there is no water pump, 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.

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

INSTRUCTIONS FOR SPRINKLER (OVERHEAD) IRRIGATION

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

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.

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.

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

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

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

T. M may be applied in conjunction with chemically neutral liquid fertilizers. Application in conjunction with highly alkaline fertilizers, such as aqueous ammonia, may cause a degradation of the pesticide, resulting in reduced performance and should be avoided.

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

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 M in a mix tank. Fill the tank with $\frac{1}{4}$ or $\frac{1}{2}$ the desired amount of water. Start mechanical or hydraulic agitation. Slowly add the required amount of TOPSIN M and then the remaining volume of water.

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

APPLICATION INSTRUCTIONS

Set sprinkler system to deliver 0.1 to 1.25 inches of water per acre. Volumes of water higher than this may reduce efficacy. Start sprinkler and then uniformly inject the suspension of TOPSIN M into the irrigation water line so as to deliver the desired rate per acre. The suspension of TOPSIN M should be injected with a positive displacement pump into the main line ahead of a right angle turn to insure adequate mixing.

NOTE: When treatment with TOPSIN M has been completed, do not irrigate the treated area for 24 to 48 hours to prevent washing the chemical off the crop.

STORAGE AND DISPOSAL

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

STORAGE INSTRUCTIONS: 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, sweep up spillage and dispose of in accordance with the Pesticide Disposal instructions listed below.

PESTICIDE DISPOSAL INSTRUCTIONS: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL INSTRUCTIONS: Triple rinse (or equivalent). Then offer for recycling or reconditioning, 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.

WARRANTY AND DISCLAIMER

Elf Atochem North America warrants that this material conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the Directions for Use, subject to the risks referred to therein. ELF ATOCHEM MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. IN NO CASE SHALL ELF ATOCHEM OR SELLER BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, BUSINESS REPUTATION, OR CUSTOMERS; LABOR COST; OR OTHER EXPENSES INCURRED IN PLANTING OR HARVESTING.

Elf Atochem and seller offer this product and the buyer and user accept it subject to the foregoing conditions of sale and warranty which may be varied only by agreement in writing signed by a duly authorized representative of Elf Atochem.

5-Z323S-02 C4 (5/95) WPS

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