



THIOPHANATE METHYL 4.5L
TURF AND ORNAMENTAL FUNGICIDE

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]
 Contains 4.5 lbs thiophanate methyl per gallon

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 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.

IF IN EYES:

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
- Call a poison control center or doctor for treatment advice.

IF SWALLOWED:

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

Have the product container label with you when calling a poison control center or doctor or going for treatment.

EMERGENCY NUMBERS:

- Transportation or spill, call CHEMTREC 800-424-9300.
- Human health, call Poison Control Center at 800-900-4044.
- Animal health, call ASPCA at 800-345-4735.

EPA REG. NO. 51036-329
 AD121602
 NET CONTENTS:

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Manufactured By:
MICRO FLO COMPANY LLC
P.O. BOX 772099
MEMPHIS, TN 38117

**PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS (AND DOMESTIC ANIMALS)**

CAUTION

HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES MODERATE EYE IRRITATION. AVOID CONTACT WITH SKIN, EYES OR CLOTHING. AVOID BREATHING VAPOR OR SPRAY MIST.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

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

Applicators and other handlers must wear:

1. Long-sleeved shirt and long pants
2. 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;
3. Shoes plus socks.
4. For use in enclosed areas, use a non-powered NIOSH approved air purifying cartridge respirator equipped with an organic-vapor (OV) removing cartridge plus a N-, R- or P-Series filter., OR a non-powered air purifying canister-type respirator (gas-mask) equipped with an organic vapor canister approved for pesticides that uses a N-, R- or P- series air-purifying filter.

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:

1. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
2. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
3. 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.

DIRECTIONS FOR USE

IT IS A VIOLATION OF FEDERAL LAW TO USE THIS PRODUCT IN A MANNER INCONSISTENT WITH ITS LABELING.

Shake well before using.

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:

- 1. Coveralls
- 2. 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
- 3. Shoes plus socks

NON-AGRICULTURAL USE REQUIREMENTS

This 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. Keep children and pets out of the treated area until sprays have dried.

GENERAL INFORMATION

Not for homeowner use. For use by individuals/firms licensed or registered by the state to apply ornamental or turf pest control products. ~~Do not apply with fixed wing or rotary aircraft.~~

Apply THIOPHANATE METHYL 4.5L with ground or aerial equipment, using sufficient volume of spray to provide thorough coverage. Add required amount of THIOPHANATE METHYL 4.5L 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.

IMPORTANT: If, after using THIOPHANATE METHYL 4.5L as recommended, treatment is not effective, a tolerant strain of fungi may be present. Consult your local State Agricultural Experiment Station or your State Agricultural Extension Service for advice on the prompt use of some other suitable fungicide.

(ALTERNATE GENERAL INFORMATION STATEMENTS)

GENERAL INFORMATION

THIOPHANATE METHYL 4.5L is a broad spectrum fungicide, which controls a variety of diseases on woody and herbaceous ornamental crops. THIOPHANATE METHYL 4.5L 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 prune trees.

Apply THIOPHANATE METHYL 4.5L with ground equipment, using sufficient volume of spray to provide thorough coverage. Add required amount of THIOPHANATE METHYL 4.5L 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 copper-containing materials or 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.

TURF APPLICATIONS

For use on all fine turf applications such as Bentgrasses, Bermuda grasses, Bluegrasses, Fescues, Ryegrasses, St. Augustine grasses, and Zoysia or their mixtures. THIOPHANATE METHYL 4.5L is

not phytotoxic to any of the above mentioned grasses when used in accordance with the label. THIOPHANATE METHYL 4.5L is to be used for the prevention and control of the diseases listed below.

For best results use spray mixture the same day it is prepared. Spray uniformly over the area to be treated with a properly calibrated sprayer. Apply after mowing or avoid mowing twelve hours after application. Apply recommended amounts in sufficient water to obtain thorough coverage, (2-4 gallons per 1,000 square feet suggested). When treating golf greens, always treat aprons.

DISEASES CONTROLLED	RATE Fl. Oz/ 1000 Sq. Ft.	REMARKS
Anthracnose (Colletotricum graminicola), Dollar Spot (Mollerodiscus spp., Lanzia spp.), Copper Spot (Gloeocerospora sorghii), Large Brown Patch (Rhizoctonia solani), Red Thread (Corticum fuciforme)	1 - 3.5 Do not exceed the maximum application rate listed in the 'Use Site' table when applying to home lawns, parks, athletic fields, schools, day care centers and golf course tees, greens and aprons.	Apply when disease first appears. Lightly water into the root zone for best results. Minimum spray interval is 14 days.
Fusarium Blight (Fusarium roseum and triticum), Necrotic Ring Spot (Leptosphaeria korrea) Leaf Spot (Dreschlera spp.) (Helminthosporium spp.) Stripe Smut (Ustilago striiformis) Summer Patch (Magnaportha poae)*	3.5 - 5.25 Do not exceed the maximum application rate listed in the 'Use Site' table when applying to home lawns, parks, athletic fields, schools, day care centers and golf course tees, greens and aprons.	Suppression only, especially when using the lower rates. Apply when disease first appears. For best results lightly water into the root zone and do not mow for 12 hours before or after application. Minimum spray interval is 14 days. When disease pressure is heavy, use the highest rate allowed or consider a tank mix with another fungicide labeled for the same use site and disease.

<p>Pink Snow Mold (Microdochium nivale)</p>	<p>2 - 3.5 Do not exceed the maximum application rate listed in the 'Use Site' table when applying to home lawns, parks, athletic fields, schools, day care centers and golf course tees, greens and aprons.</p>	<p>Apply middle-late November before turf has stopped all growth activity.</p> <p>Lightly water this application into the root zone for best results.</p> <p>For best results, use a spreader-sticker product. Second spray should dry on leaf surfaces with no "watering in".</p> <p>Minimum Spray Interval is 14 days.</p>
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USE SITE	MAXIMUM SINGLE APPLICATION RATE		MAXIMUM SEASONAL APPLICATION RATE	
	Fluid ounces/1000 sq ft	Fluid ounces/Acre	Fluid ounces/1000 sq ft	Fluid ounces/Acre
Home lawns, parks, athletic fields, schools and day care centers	1 ¼	77 (4.8 pints)	7	309 (19.3 pints)
Golf Courses - Tees/greens/aprons	5 ¼	77 - 232 (4.8 - 14.5 pints)	14 ¼	620 (38.7 pints)
Golf Courses - Fairways (except Florida)	3 ¼	77 - 155 (4.8 - 9.7 pints)	3 ¼	155 (9.7 pints)
Golf Courses - Fairways (Florida only)-only during overseeding	1 ¼	33 - 77 (2.1 - 4.8 pints)	1 ¼	77 (4.8 pints)

TURF RESTRICTIONS:

- Not for homeowner use.
- Do not apply with fixed wing or rotary aircraft.
- Not for use on turf being grown for sale or other commercial use as sod.
- Minimum 14-day Retreatment Interval

APPLICATION THROUGH IRRIGATION SYSTEMS

General Information:

1. Apply this product only through the following types of sprinkler systems center pivot, lateral move, end tow, side wheel roll, traveler, solid set, hand move (or similar); or flood (basin) irrigation system. Do not apply this product through any other type of irrigation system.

2. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
3. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
4. 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.
5. 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.

ADDITIONAL APPLICATION INSTRUCTIONS

1. Remove scale, pesticide residue, and other foreign matter from the chemical tank and entire injector system. Flush with clean water.
2. Determine the treatment rate as indicated in the directions for use for crop and pathogen and measure the intended areas of application.
3. Prepare a suspension of product in the mix tank or stock bucket. Fill the tank with 1/2 or 3/4 of the desired amount of water. Start agitation and add the required amount of product to the solution along with the remaining volume of water. Use sufficient water to ensure full coverage of foliage. Do not use an amount of water that could lead to excessive runoff from target plants. The amount of water will vary according to the amount of foliage requiring coverage and type of equipment but generally 25 to 100 gallons per acre is adequate.
4. Maintain a gentle agitation in the mix tank during application to assure a uniform suspension.
5. Greater accuracy in calibration and distribution will be achieved by injecting a larger volume of a more dilute suspension per unit time. An injection ration of 1:100 is recommended for greenhouse systems.
6. Pesticide application should begin as soon as irrigation pattern is established and stabilized. Irrigation should continue after application of pesticide for a sufficient amount of time for pesticide to be flushed from end of irrigation system.

SPECIFIC INFORMATION FOR IRRIGATION SYSTEMS

CONNECTED TO A PUBLIC WATER SUPPLY

1. 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 out of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone (RPZ), backflow preventer, 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.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back towards the injection pump.
4. 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 drawn from the supply tank when the irrigation system is either automatically or manually shut down.
5. 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.
6. Systems must use a metering pump, such as a positive displacement injection pump or equivalent, effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

SPECIFIC INFORMATION FOR APPLICATIONS
THROUGH SPRINKLER IRRIGATION SYSTEMS

1. 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.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

3. 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 shutdown.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. 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.
6. 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.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

SPECIFIC INFORMATION FOR
FLOOD (BASIN), FURROW AND BORDER CHEMIGATION

1. Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity such as a drop structure or weir box to decrease potential for water source contamination from backflow if water flow stops.
2. 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, quickclosing 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 function 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.

ORNAMENTALS (FIELD AND GREENHOUSE)

FOLIAR SPRAY - PLANT TYPES AND DISEASES CONTROLLED

PLANT TYPES	DISEASES
Woody ornamentals, Shade trees (1)	Anthrachnose
Herbaceous ornamentals	Asochyta blight
Roses	Black Spot
Woody and herbaceous ornamentals	Botrytis (Gray Mold)
Woody and herbaceous ornamentals	Cercospora Leaf Spot
Ligustrum	Corynespora Leaf Spot
Isis	Didymellina Leaf Spot
Shade and Ornamental trees	Diplodia Tip Blight (<i>Diplodia pinea</i>)
Woody and herbaceous ornamentals	Entomosporium Leaf Spot
Azalea & Rhododendron (2)	Ovulinia Blight
Woody and herbaceous ornamentals	Phomopsis Blight
Woody and herbaceous ornamentals, ornamental nut and fruit trees (3)	Powdery Mildews
Herbaceous ornamentals	Ramularia Leaf Spot
Pyracantha, Flowering crab, Ornamental nut and fruit trees (3)	Scab
Woody and herbaceous ornamentals	Septoria Leaf Spot

KEY TO NOTES:

¹ Begin at bud break and make 2 to 3 additional applications at 10 to 14 day intervals.

² Begin treatment as flowers open.

³ Do not use fruit or nuts from treated trees for food purposes.

Addition of a surfactant to the spray mixture improves distribution of the spray on hard-to-wet plants such as roses.

FOLIAR SPRAY - HYDRAULIC APPLICATION

MIXING INSTRUCTIONS: Add required amount of THIOPHANATE METHYL 4.5L 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 applications 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 THIOPHANATE METHYL 4.5L per 100 gallons of water. For control of Powdery Mildew and Botrytis (Gray Mold), use 10 fluid ounces of THIOPHANATE METHYL 4.5L per 100 gallons of water, or 1 teaspoonful per 2 gallons of water.

Do not apply to home orchards/fruit trees after fruit set.

DRENCH - PLANT TYPES AND DISEASES CONTROLLED:

PLANT TYPES

PLANT TYPES	DISEASE(S) CONTROLLED
Herbaceous annuals, perennials, and bedding plants	Botrytis, Fusarium, Rhizoctonia, Sclerotinia stem, crown and root rots
Woody ornamentals (such as azaleas, rhododendrons, conifers, poinsettias)	Cylindrocladium rot, Thielaviopsis rot

NOTE: THIOPHANATE METHYL 4.5L does not control *Pythium spp.* or *Phytophthora spp.*

MIXING INSTRUCTIONS: Add required amount of THIOPHANATE METHYL 4.5L 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 20 fluid ounces of THIOPHANATE METHYL 4.5L per 100 gallons of water. Apply as a drench or heavy spray to 800 sq. ft. of bench area (1 to 2 pints per sq. ft.) after transplanting into propagation beds or containers. Repeat at 2 to 4 week intervals during periods favorable for disease.

PREPLANT DIP TREATMENT - PLANT TYPES AND DISEASES CONTROLLED:

PLANT TYPES	DISEASE(S) CONTROLLED
Plants or cuttings of woody and herbaceous ornamentals	Botrytis, Fusarium, Rhizoctonia, Sclerotinia stem, crown and root rots, Cylindrocladium rot, Thielaviopsis rot
Bulbs (Easter Lily, Tulip, Gladiolus, Daffodil, Iris)	Fusarium and Penicillium rots

APPLICATION RATES AND TIMING FOR DISEASE CONTROL:

Plants or cuttings - Use 20 fluid ounces of THIOPHANATE METHYL 4.5L per 100 gallons of water. Immerse plants or cutting for 10 to 15 minutes; remove and allow to drain.

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

STORAGE AND DISPOSAL

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

IMPORTANT NOTICE: LIMITATION OF LIABILITY

This product has been researched to provide necessary data to support its use on ornamentals. However, it is understood that tests may not have been carried out on all varieties and under all growing conditions. The user should always follow label directions and exercise his judgment and caution when using this product on a given variety until familiar with the results under his growing conditions. NO WARRANTY OR REPRESENTATION IS MADE, EXPRESS, OR IMPLIED, CONCERNING THE RESULTS OBTAINED FROM THE USE OF THIS PRODUCT IF NOT USED IN ACCORDANCE WITH DIRECTIONS OR ESTABLISHED SAFE PRACTICE. The exclusive remedy of the user or Buyer, and the liability of Micro Flo Company or its affiliates, for any and all losses, injuries or damages resulting from the use or handling of this product shall be the purchase price paid by the user or Buyer for the quantity of this product involved. The Buyer and all users are deemed to have accepted the terms of this Notice, which may be varied only by agreement in writing signed by a duly authorized representative of Micro Flo Company.