SPECIMEN LABEL

3336® F

TURF AND ORNAMENTAL SYSTEMIC FUNGICIDE

For the prevention and control of turf diseases and the diseases of annual and perennial flowers, bedding plants, foliage plants, ground covers, plus deciduous and evergreen trees and shrubs.

GROUP 1 FUNGICIDE

ACTIVE INGREDIENT:	
Thiophanate-methyl (dimethyl 4,4'-o-phenylenebis[3-thioallophanate])	41.25%
OTHER INGREDIENTS	58.75%
TOTAL	100.00%

This product contains 4.0 lb 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 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 further 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 further treatment advice.
- **IF SWALLOWED:** Call 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 or label with you when calling a poison control center or doctor, or when going for treatment. For 24-Hour Emergency Assistance Call Chemtrec 1-800-424-9300.

PRECAUTIONARY STATEMENTS

- **HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

  CAUTION: Harmful if swallowed, absorbed through the skin or inhaled. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling.
- **PERSONAL PROTECTIVE EQUIPMENT (PPE)**

  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.

  WPS Uses: Applicators and other handlers who handle this pesticide for any use covered by the Worker Protection Standard, 40 CFR Part 170, must wear: long sleeve 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, or Viton ≥ 14 mils) and shoes with socks. For exposures in enclosed areas: a respirator with either an organic vapor-removing cartridge with a NIOSH approved organic vapor (OV) cartridge or canister with any N, R, P or HE filters.

  NON-WPS Uses: Applicators and other handlers who handle this pesticide for any use NOT covered by the Worker Protection Standard, 40 CFR Part 170, should wear: long-sleeved shirt and long pants, and shoes with socks.

  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: 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 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 contaminate water by disposal of equipment washwaters. Do not apply, allow to drift, or drain or flush equipment onto non-target areas.

CLEARY™

CLEARY CHEMICAL CORPORATION
178 RIDGE ROAD
DAYTON, NJ 08810-1501

EMERGENCY PHONE NUMBERS:
M-F 9AM-5PM ET
800-524-1662 • 732-329-8399

24 Hour CHEMTREC
800-424-9300

Effective Date: 01/26/06
Accepted Date: 05/17/04
Replaces: 08/99

EPA Reg. No. 1001-69 ?M3/06

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. Exemption: If the 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, chemical resistant gloves, (such as barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, polyvinyl chloride (PVC) ≥ 14 mils, or Viton ≥ 14 mils), and shoes plus socks.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box only 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.

Turf and Landscape Uses: Keep children and pets out of treated areas until sprays have dried.

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.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.
Pesticide Storage: Store in the original container in a dry, temperature controlled 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, contain/re-capture spillage and dispose of in accordance with the Pesticide Disposal Instructions listed below.
Pesticide Disposal: Wastes resulting from the use of this product are toxic and may be disposed of on site or at an approved waste disposal facility.
Container Disposal: Do not re-use empty container. 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.

GENERAL INFORMATION

3336™ F is a broad spectrum fungicide exhibiting preventative, curative, and systemic properties. It is useful on a wide variety of turf and ornamental disease problems. Apply 3336 F with ground or overhead equipment, using sufficient volume of spray to provide thorough coverage. Do not apply with fixed wing or rotary aircraft. Use the higher rates under conditions of severe disease pressure. Also, see local State Extension Service recommendations for application schedules. This product is not for homeowner use and can only be used by individuals/firms licensed or registered by the state to apply ornamental or turf pest control products. Chemigation instructions follow "Directions For Use". Read and follow these instructions carefully for this method of application.

Resistance Management: To avoid the development of tolerant strains of fungi, 3336 F should be used with fungicides of different modes of action. Cleary Chemical does not recommend the use of products containing thiabendazole in combination or rotation with 3336 F. These utilize similar chemistry and mode of action and can contribute to development of disease tolerance. If, after using 3336 F as recommended, and the treatment is not effective, a tolerant strain of fungi may be present. Consult your local Cleary Chemical representative, your State Agricultural Experiment Station, or your State Cooperative Extension Service for proper disease identification and advice on the prompt use of some other suitable fungicide or disease control strategy. As long as recommended precautions are followed, 3336 F can remain useful for disease control.

Mixing Instructions: SHAKE WELL BEFORE USING. Some settling may occur during prolonged periods of non-use. High pH environments cause a shortened tank life for diluted product. The buffering of tank water to pH 6-7 prior to the addition of 3336 F is recommended. Add required amount of 3336 F to partially filled tank (1/2 total volume), agitate by mechanical or hydraulic means, add tank mix product if used ***(Do not tank mix 3336 F with copper-containing materials or with highly alkaline pesticides, such as Bordeaux mixture or lime sulfur.*** For more information, see 'Tank mixing instructions' below), agitate again and then add remaining required amount of water. Continuous agitation is recommended to keep the material in proper suspension. For best results, use spray mixture the same day it is prepared.

Tank Mixing Instructions: 3336 F is compatible with most commonly used pesticides. If tank mixing with other materials, add products in the following order: water soluble bags, wettable powders, dry flowables, liquid flowables, emulsifiable concentrates, and soluble materials such as fertilizers. No claim of compatibility with other products is implied. **Do not tank mix with copper-containing materials or with highly alkaline pesticides, such as Bordeaux mixture or lime sulfur.** Consult the intended tank mix partner product label for appropriate application rates and use instructions. Follow the label directions for the most restrictive of label precautions and limitations. This product cannot be mixed with any product containing a label prohibition against such mixing. Read and observe the most restrictive precautionary statements and other information appearing on product labels used in mixtures. 3336 F 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.

CHEMIGATION

GENERIC REQUIREMENTS

1. Apply this product only through the following types of systems: sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, solid set, or hand move; flood (basin); or drip trickle irrigation systems. 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.

SPECIFIC REQUIREMENTS

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, 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.
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 (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.

NON SPECIFIC REQUIREMENTS

1. Remove scale, pesticide residue, and other foreign matter from the chemical tank and entire injector system. Flush with clean water.
2. 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.
3. Maintain a gentle agitation in the mix tank during application to assure a uniform suspension. Follow mixing instructions and tank mixing instructions previously indicated.
4. Start system and then uniformly inject the suspension of 3336™ F into the irrigation line so as to deliver the desired rate per acre. Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation system.
5. Greater accuracy in calibration and distribution will be achieved by injecting a larger volume of a more dilute suspension per unit time.
6. The suspension of 3336 F should be injected with a positive displacement pump into the main line ahead of a right angle turn to insure adequate mixing.

SPRINKLER (OVERHEAD) CHEMIGATION

Observe all instructions in the Generic, Specific and Non-Specific requirements sections above and the following additional requirements:

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 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.

Set sprinkler system to deliver 1/10 to 1/4 inches of water per acre. Volumes of water higher than this may reduce efficacy. Application of more than recommended quantities of irrigation water per acre may result in decreased product performance. Where sprinkler distribution patterns do not overlap sufficiently, unacceptable disease control may result.

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

FLOOD (BASIN) CHEMIGATION

1. Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and down stream of a hydraulic discontinuity such as a drop structure of 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: Observe all instructions in the Generic, Specific and Non-Specific requirements sections above and items 1 and 2 of the sprinkler irrigation requirements.

DRIP (TRICKLE) CHEMIGATION

Observe all instructions in the Generic, Specific and Non-Specific requirements sections above.

TURF APPLICATIONS

3336 F may be used on all fine turf applications such as Commercial, Residential and Public (such as home lawns, parks, athletic fields, schools, and day care centers), and Golf Courses (greens, tees, fairways and aprons) of cool and warm season grasses such as Bentgrass, Bluegrass, Bermudagrass, Fescue, Ryegrass, St. Augustinegrass, Zoysiagrass, or their mixtures. 3336 F is not phytotoxic to any of the above mentioned grasses when used in accordance with the label. 3336 F is to be used for the prevention and control of the diseases mentioned below. It has both preventative and curative activity. Do not graze animals on treated turf. Do not feed clippings to livestock or poultry. Not for use on turf being grown for sale or other commercial use as sod.

Application Instructions: Apply material with properly calibrated hand held, mechanical or motorized spray equipment or by chemigation through appropriate sprinkler irrigation systems. Spray uniformly over the area to be treated. Apply recommended amounts in sufficient water to obtain thorough coverage of treatment area (2-4 gal per 1,000 sq ft is suggested). When treating golf greens, always treat aprons. Use the highest recommended rate under conditions of severe disease pressure. For best results, apply after mowing or avoid mowing twelve hours after application. For root pathogens, lightly water the treatment area to move the fungicide into the active root zone with one to two tenths inch of water. Excessive irrigation may move application below active root zone and reduce application effectiveness. Green design and drainage will influence irrigation practices. When tank mixing with contact action fungicides for foliar diseases, applications should be allowed to dry on leaf surfaces. Normal watering may proceed after sprays have dried.

Table 1:
Maximum Individual Application Rates and Minimum Re-Treatment Intervals
Do not exceed the amounts per acre or reduce the re-treatment interval indicated below.

Use Site	Maximum application rate of 3336 F	Minimum Re-Treatment Interval	Comments
Residential or Public Areas	0.68 Gallons/Acre (2 oz / 1,000 sq.ft.)	14 days	
Golf Course Tees Greens, Aprons	2.04 Gallons/Acre (6 oz / 1,000 sq.ft.)	14 days	
Golf Course Fairways– except Florida	1.36 Gallons/Acre (4 oz / 1,000 sq.ft.)	14 days	Excludes Florida
Golf Course Fairways– Florida Only	0.68 Gallons/Acre (2 oz / 1,000 sq.ft.)	14 days	Florida Only One Application per year

Table 2: Maximum Seasonal Application Rates
Do not exceed the following amounts of product per Acre per season

Use Site	Maximum 3336 F per Acre per Season	Ounces 3336 F per 1,000 sq. ft.	Comments
Residential or Public Areas	2.72 Gallons	8 fl.oz.	4 Applications per year
Golf Course Tees Greens, Aprons	5.44 Gallons	16 fl. oz.	
Golf Course Fairways– except Florida	1.36 Gallons	4 fl.oz.	Excludes Florida
Golf Course Fairways– Florida Only	0.68 Gallons	2 fl.oz.	Florida Only

Table 3: Turf Disease Control

Disease(s) Controlled	Rate of 3336 F fl oz/1,000 sq ft	Remarks*
Anthracnose, basal *Colletotrichum graminicola*	4-6	For prevention in historic areas of disease pressure, apply twice at 14 day intervals when soil temperature reaches 60°F. For curative control, apply when disease first appears and continue at 14 day intervals. Rotations and/or tank mix combinations with chlorothalonil or triadimefon can be utilized.
Anthracnose, foliar *Colletotrichum graminicola*	2-4	
Bermudagrass Decline *Gaeumannomyces graminis* var. *graminis*	4-6	Apply in mid-July or when disease symptoms first appear and repeat at 14 day intervals for suppression. Use higher rates under most severe disease expression. Water treatment into active root zone. Follow proper agronomic recommendations to maintain plant vigor.
Take-All Patch *Gaeumannomyces graminis* var. *avenae*		

TURF APPLICATION (cont.)

Disease(s) Controlled	Rate of 3336 F fl oz/1,000 sq ft	Remarks
Cool Season Brown Patch *Rhizoctonia cerealis* **Necrotic Ring Spot** *Leptosphaeria korrea* **Spring Dead Spot** *Leptosphaeria korrea*	4-6	For prevention, apply in fall before turf has stopped all growth activity. Apply second application in early spring when soil temperatures reach 55-60°F or when disease first appears. For curative action, apply when disease first appears in early spring and continue at 14 day intervals. Water treatment into active root zone.
Coprinus Snow Mold *Coprinus psychromorbidus*	4-6	Apply 2 treatments at 21 day intervals in late fall to early winter, with the last application made just prior to first permanent snow cover. Rotations and/or tank mix combinations with PCNB can be utilized.
Dollar Spot *Moellerodiscus, Lanzia, Sclerotinia* **Large Brown Patch** *Rhizoctonia solani* **Ascochyta Leaf Blight** *Ascochyta* **Copper Spot** *Gloeocercospora sorghi* **Fusarium Patch** *Fusarium nivale* **Red Thread** *Laetisaria fuciformis* **Zoysia Patch** *Rhizoctonia solani*	2-4	Apply when disease first appears and continue at 14 day intervals. Rotations and/or tank mix combinations with chlorothalonil, iprodione, or mancozeb (Protect™),can be utilized.
Fusarium Blight *Fusarium roseum, F. triticum*	4-6	Apply when disease first appears at 14 day intervals.
Gray Leaf Spot (Blast) *Pyricularia grisea*	4-6	Apply preventative application before expected period of disease development. Continue applications at 14 day intervals.
Leaf Spot *Drechslera* **Leaf, Crown,** and **Root Diseases** *Bipolaris, Curvularia, Exserohilum*	4-6	Apply when disease first appears and make applications at 14 day intervals as needed. Rotations and/or tank mix combinations with chlorothalonil, iprodione, or mancozeb (Protect) are recommended under severe conditions.
Pink Snow Mold *Michrodochium nivale*	2-4	Apply in late fall to early winter before turf has stopped all growth activity. A second application may be used in combination with chlorothalonil, PCNB, or thiram (Spotrete™) at recommended rates before snow cover or during spring thaw.
Rusts *Puccinia, Uromyces*	4-6	Apply at 14 day intervals when disease first appears. Rotations and/or tank mix combinations with chlorothalonil or mancozeb (Protect) are recommended.
Stripe Smut *Ustilago striiformis*	4-6	Apply at 14 day intervals when disease first appears. For prevention, apply in spring and fall.
Summer Patch *Magnaporthe poae*	4-6	For prevention, apply 3 applications starting late April or early May using 21 day intervals. Rotations and/or tank mix combinations may be used as part of the three application program. For suppression, apply at 14 day intervals when disease first appears. Water treatment into active root zone.
Bentgrass Dead Spot *Ophiosphaerella agrostis*	4-6	For prevention, apply in early June or based upon local Extension Service recommendations. Apply at 14 day intervals. Rotations and/or tank mix combinations may be used for season long disease prevention.

***Observe the maximum individual application rates and maximal seasonal applications limits in Table 2.**

HORTICULTURAL APPLICATIONS

NURSERY, GREENHOUSE, LANDSCAPE & INTERIORSCAPE

Annual and Perennial Flowers, Bedding Plants, Foliage Plants, Ground Covers, plus Deciduous and Evergreen Trees and Shrubs

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

3336 F is a broad spectrum systemic fungicide which controls a variety of foliar, stem, and root diseases on a wide range of commercially important plants. 3336 F is also effective as a pre-plant dip on cuttings and bulbs. For soil drench applications, best crop protection is achieved with preventative treatments repeated every 21-28 days. For foliar applications, begin treatments when disease first appears, or during suspected periods of disease incidence. Apply additional applications every 7-14 days or as otherwise instructed for the prevention or control of the listed diseases. Use of a wetting agent is recommended for plants that have leaves that are difficult to wet properly. Use of a spreader-sticker is recommended to enhance product performance in wet weather conditions or during periods of overhead irrigation. 3336 F may be applied as a ground application using hand held, mechanical or motorized spray equipment, or as a chemigation spray or through an applicable sprinkler irrigation system; or as an overhead application where applicable. See specific instructions below. For foliar applications, do not exceed thirty-six (36) pounds active ingredient per acre per crop season from all thiophanate-methyl containing products. For soil drench applications, do not exceed 300 pounds active ingredient per acre per crop season from all thiophanate-methyl containing products.

Note: The "Directions For Use" of this product reflect the cumulative inputs from both historical field use and product testing programs. However, it is impossible to test this product on all species and cultivars. A preliminary trial is suggested on a small scale before a full treatment is applied to any plant type not shown on this label but found in a similar use site with a listed disease problem. Wait 5-7 days after treatment to evaluate results. This product is not recommended for use on Swedish Ivy (*Nephrolepis exhalta*), Boston Fern (*Plectranthus australis*), and Easter Cactus (*Hatiora gaertneri*).

Application Instructions: Apply material with properly calibrated hand held, mechanical or motorized spray equipment or by chemigation through appropriate sprinkler irrigation, flood, or drip systems. Begin applications when disease first appears and repeat at 7-14 day intervals or as needed during the growing season. Use the shortest interval when conditions are unusually favorable for the development of disease. For hand held, mechanical, or motorized applications, mix 8-24 fl oz of 3336 F per 100 gal water (0.5-1.5 teaspoons per gal) and apply as a full coverage spray to drip for the prevention and control of the diseases listed below. Spray volume may range up to 400 gallons of finished spray per acre depending upon plant species and plant growth stage. For applications through irrigation systems, refer to use rates indicated in the foliar application chart. For small volume applications less than 100 gallons, divide recommended rate by 16 to get the number of teaspoons of 3336 F per gal.

SPECIAL INSTRUCTIONS FOR PROPORTIONAL INJECTORS (e.g. Dosatron, Dosmatic, Anderson, and similar equipment)

Determine the treatment rate for crop and pathogen from the foliar application table below. Determine the injection ratio for the individual system to be used for application. For systems using a 1:100 ratio, measure and add the exact amount of recommended material per 100 gallons to each gallon of water in a stock bucket or tank. For systems using a 1:200 ratio, multiply the recommended amount per 100 gallons by 2. For systems using a 1:50 ratio, divide the recommended amount per 100 gallons added by 2. For systems using a 1:16 ratio, divide the recommended amount per 100 gallons by 6. Greater accuracy in calibration and distribution will be achieved by injecting a larger volume of a more dilute suspension per unit time. An injection ratio of 1:100 is recommended for most greenhouse and nursery systems.

FOLIAR APPLICATION

Disease(s) Controlled	Rate of 3336 F	Remarks
Anthracnose *Colletotrichum*	12-16 fl oz/100 gallon	Apply as buds break or at first sign of disease. Repeat at 7-14 day intervals as needed during disease period.
Black Spot of Rose *Diplocarpon rosae*	12-16 fl oz/100 gallon	Apply early summer or at first sign of disease. Repeat every 7-14 days as needed during disease period.
Brown Rot and **Blight** *Monilinia, Sclerotinia, Whetzellinia*	12-16 fl oz/100 gallon	Apply late spring or at first sign of disease. Repeat every 7-14 days as needed during disease period.
Fusicladium and **Venturia Leaf Scabs** on: Crabapple, Hawthorn, Pear, Mountain Ash, Pyracantha, etc.	12-16 fl oz/100 gallon	Apply as buds break. Repeat every 7-14 days during disease period. Effective control requires coverage during leaf expansion. Rotations and/or tank mix combinations with mancozeb (Protect), chlorothalonil or propiconazole can be utilized. Do not use fruit from treated crabapple or pear trees for food purposes.
Leaf Spots and **Blights** caused by: *Ascochyta, Blumeriella, Botrytis, Cercospora, Coccomyces, Corynespora, Curvularia, Didymellina, Entomosporium, Fabraea, Fusarium, Ramularia, Rhizoctonia, Marssonina, Mycosphaerella, Myrothecium, Phoma, Physalospora, Schizothyrium, Septoria, Sphaceloma*	12-16 fl oz/100 gallon	Apply when disease symptoms first appear. Repeat every 7-14 days during disease period. Rotations and/or tank mix combinations with mancozeb (Protect) or chlorothalonil can be utilized.
Ovulinia Blight	8-16 fl oz/100 gallon	Apply as flowers open. Repeat every 7-14 days during disease period.
Powdery Mildews *Erysiphe, Microsphaera, Phyllactinia, Podosphaera, Oidium, Sphaerotheca*	12-24 fl oz/100 gallon	Apply when disease first appears and repeat every 7-14 days during disease period. Rotations and/or tank mix combinations with mancozeb (Protect) or triadimefon can be utilized.
Rust Diseases caused by: *Puccinia, Gymnosporangium, Uromyces*	12-16 fl oz/100 gallon	Apply late spring or when symptoms first appear. Repeat every 7-14 days during disease period. Rotations and/or tank mix combinations with mancozeb (Protect) or chlorothalonil are recommended.
Tip Blight of Pine *Sphaeropsis sapinea, Diplodia pinea*	16-24 fl oz/100 gallon	Begin application in spring when new growth starts. Make a second application just before needles emerge from the sheath and a third application 14 days later. Thorough coverage is essential for optimal disease control.
Twig Blights, Cankers, and **Diebacks** *Diaporthe, Kabatina, Phoma, Phomopsis*	16-24 fl oz/100 gallon	Apply when symptoms first appear. Repeat every 7-14 days during disease period.

SOIL DRENCH APPLICATION

Disease(s) Controlled	Rate of 3336 F	Remarks
Stem, Crown, and **Root Rots** caused by: *Botrytis, Cylindrocladium, Fusarium, Gliocladium, Myrothecium, Penicillium, Ramularia, Rhizoctonia, Sclerotinia* **Black Root Rot** *Thielaviopsis*	8-16 fl oz/100 gallon	Apply as a drench or directed spray using hand held, mechanical or motorized spray equipment or as a chemigation drench or directed spray using applicable sprinkler irrigation systems after seeding or sticking of cuttings (8 fl oz) or after transplanting (12-16 fl oz) to propagation beds, containers, pots, trays, or nursery or landscape beds at a rate to thoroughly soak the growing media through the root zone. A general guide is 0.25-3.0 pints of finished mixture per sq ft depending on the media type and depth (about 4 fl oz per 4 inch pot or 8 fl oz per 6 inch pot). Repeat every 21-28 days for adequate crop protection. **Note:** 3336 F does not control *Pythium* or *Phytophthora*. Tank mix combinations with metalaxyl, mefenoxam, etridiazole, propamocarb, fosetyl-Al or mono and dipotassium salts of phosphorous acid are required for the control of *Pythium* and *Phytophthora*.

PLANT DIP APPLICATION

Disease(s) Controlled	Rate of 3336F	Remarks
Plant or Cutting Diseases caused by: *Botrytis Cylindrocladium, Fusarium, Gliocladium, Myrothecium, Penicillium, Ramularia, Rhizoctonia, Sclerotinia, Thielaviopsis*	16-24 fl oz/100 gallon	Immerse plants or cuttings for 10-15 min. Remove and allow to drain. **Note:** Follow accepted hygiene practices to minimize the introduction and spread of water borne bacterial and water mold fungal diseases.
Bulb, Corm, and **Rhizome Rots** caused by: *Botrytis, Cylindrocladium, Fusarium, Gliocladium, Myrothecium, Penicillium, Ramularia, Rhizoctonia, Sclerotinia, Thielaviopsis*	16-24 fl oz/100 gallon	Soak cleaned bulbs for 15-30 min in warm solution (80-85° F). For storage disease prevention, treat bulbs preferably within 48 hours after digging. After treatment, dry well before storing. If bulbs are for forcing, treat bulbs that have been heat-cured. **Note:** Follow accepted hygiene practices to minimize the introduction and spread of water borne bacterial and water mold fungal diseases.

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LIMITED WARRANTY AND DISCLAIMER

CLEARY CHEMICAL CORPORATION 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. CLEARY CHEMICAL CORPORATION makes no other expressed or implied warranty of fitness or merchantability or any other expressed or implied warranty. In no case shall CLEARY CHEMICAL 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 costs, or other expenses incurred in planting or harvesting. CLEARY CHEMICAL 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 CLEARY CHEMICAL CORPORATION.

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Effective: 01/26/06
Accepted Date: 05/17/04
Replaces: 08/99

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **3336® F**
EPA Reg. No.: 1001-69
Product Type: Fungicide

Company Name: Cleary Chemicals, LLC
11901 S. Austin Avenue
Alsip, IL 60803
1-800-345-3330

Telephone Numbers: **For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, Call CHEMTREC Day or Night: 1-800-424-9300**
For Medical Emergencies Only, Call 1-877-325-1840

This product is an EPA FIFRA registered pesticide. Some classifications on this SDS are not exactly the same as on the FIFRA label. Certain sections are superseded by federal law governed by EPA for a registered pesticide. Please see Section 15. REGULATORY INFORMATION for explanation.

2. HAZARDS IDENTIFICATION

HEALTH HAZARDS:

Acute toxicity, oral	Category 4
Acute toxicity, inhalation	Category 4
Skin irritation	Category 2
Eye irritation	Category 2B
Specific target organ toxicity – Repeated exposure	Category 2

ENVIRONMENTAL HAZARDS:

Hazardous to aquatic environment, acute	Category 2
Hazardous to aquatic environment, chronic	Category 2

SIGNAL WORD:
WARNING

HAZARD STATEMENTS:
Harmful if swallowed or inhaled. Causes skin irritation. Causes eye irritation. May cause damage to organs (liver, kidney, and thyroid) through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS:
Wash hands and exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth.

Avoid breathing mists/vapors/spray. Use only outdoors or in well-ventilated area. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.

Wear protective gloves/eye protection/face protection. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Avoid release to the environment. Collect spillage.

Dispose of contents/container in accordance with local/regional/national/international regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENTS	CAS NO.	% BY WEIGHT
Thiophanate methyl	23564-05-8	40.0 – 42.5
Propylene glycol	57-55-6	4.75 – 5.25
Other Ingredients:	Trade Secret	Trade Secret

Synonyms: Dimethyl-4-4´-o-phenylenebis- 3-thioallophanate

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

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 to 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 to 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. Do not give any liquid to the person. 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.
Most Important symptoms/effects, acute and delayed: Eye exposure may cause mild irritation. Skin exposure may cause slight irritation.
Indication of Immediate medical attention and special treatment if needed, if necessary: Immediate medical attention is not expected from exposure to this product.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Use extinguishing media suitable for surrounding materials. Dry chemical, carbon dioxide, foam, water spray or fog.
Special Fire Fighting Procedures: Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.
Unusual Fire and Explosion Hazards: If water is used to fight fire, contain runoff, using dikes to prevent contamination of water supplies. Dispose of fire control water later.
Hazardous Decomposition Materials (Under Fire Conditions): May produce gases such as oxides of carbon and nitrogen.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.
Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.
Methods for Containment: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.
Methods for Cleanup and Disposal: Avoid creation of dusty conditions. Scrape up and place in appropriate closed container. Wash entire spill area with a detergent slurry, absorb and sweep into

container for disposal. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.
Other Information: Large spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

HANDLING: Avoid contact with eyes, skin, or clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing/Personal Protective Equipment (PPE) immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove Personal Protective Equipment (PPE) immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.
STORAGE: Store in the original container in a dry, temperature controlled 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, contain/re-capture spillage and dispose of in accordance with the Pesticide Disposal instructions.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:
Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.
Eye/Face Protection: Not normally required. To avoid contact with eyes, wear chemical goggles or shielded safety glasses. An emergency eyewash or water supply should be readily accessible to the work area.
Skin Protection: To avoid contact with skin, wear long pants, long-sleeved shirt, socks and shoes. An emergency shower or water supply should be readily accessible to the work area.
Respiratory Protection: Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.
General Hygiene Considerations: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

Exposure Guidelines:

	OSHA		ACGIH		
Component	TWA	STEL	TWA	STEL	Unit
Propylene glycol	10 (WEEL)	NE	NE	NE	Mg/m^3

NE = Not Established WEEL = Workplace Environmental Exposure Levels

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Grayish white liquid
Odor:	Mild sulfur smell
Odor threshold:	No data available
pH:	5.8 – 6.5
Melting point/freezing point:	No data available
Initial boiling point and boiling range	No data available
Flash point:	No data available
Evaporation rate:	No data available
Flammability (solid, gas):	No data available
Upper/lower flammability or explosive limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Relative density:	9.71 lb active ingredient/gal

Solubility(ies):	Dispersible
Partition coefficient: n-octanol/water:	No data available
Autoignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	1000-1200 cps depending on manufacturing batch

Note: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Not reactive
Chemical Stability: Stable
Possibility of Hazardous Reactions: N/A
Conditions to Avoid: Extreme heat
Incompatible Materials: Highly alkaline materials, oxidizing agents, lime sulfur, bordeux mixture, copper compounds.
Hazardous Decomposition Products: Thermal decomposition generates oxides of nitrogen, sulfur, and carbon.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Dermal
Symptoms of Exposure:
Eye Contact: Mildly irritating based on toxicity studies.
Skin Contact: Minimally toxic and slightly irritating based on toxicity studies.
Ingestion: Slightly toxic if ingested based on toxicity studies.
Inhalation: Low inhalation toxicity based on toxicity studies.
Delayed, immediate and chronic effects of exposure: None reported.

Toxicological Data:
Data from laboratory studies conducted are summarized below:
Oral: Rat LD_{50}: 1,750 mg/kg (female)
Dermal: Rat LD_{50}: >5,000 mg/kg
Inhalation: Rat 4-hr LC_{50}: >2.05 mg/L
Eye Irritation: Rabbit: Mildly irritating (MMTS = 15.1 – 25.0)
Skin Irritation: Rabbit: Slightly irritating (PDMI = 0.3)
Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.

Subchronic (Target Organ) Effects: Repeated overexposure to thiophanate methyl may cause mild anemia and affect the liver and thyroid. Overexposure to propylene glycol has been associated with kidney toxicity, liver toxicity (animals) and lactic acidosis. Very high dose acute exposure may result in CNS and cardiac effects.
Carcinogenicity / Chronic Health Effects: Prolonged overexposure to thiophanate methyl may affect the liver and thyroid. Thiophanate methyl produced dose-dependent increases in benign liver tumors in mice and thyroid tumors in rats. Overexposure to propylene glycol has been associated with kidney toxicity, liver toxicity (animals) and lactic acidosis.
Reproductive Toxicity: Thiophanate methyl did not cause reproductive toxicity in multi-generation studies in rats. In the mouse, propylene glycol was not a reproductive toxicant.
Developmental Toxicity: In a rabbit study with thiophanate methyl, slight skeletal variations and decreased fetal weights were observed at doses that were also toxic to mother animals. In a series of animal studies, propylene glycol was not a developmental toxicant.
Genotoxicity: There have been some positive and some negative studies, but the weight of evidence is that thiophanate methyl is not mutagenic. Propylene glycol was consistently nonmutagenic.

Assessment Carcinogenicity: None listed with ACGIH, IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicity:
Data on Thiophanate Methyl Technical:

96-hour LC_{50} Bluegill:	>41 ppm	Bobwhite Quail 8-day Dietary LC_{50}:	>10,000 ppm
96-hour LC_{50} Rainbow Trout:	8.3 ppm	Mallard Duck Oral LD_{50}:	4,640 mg/kg
48-hour EC_{50} Daphnia:	5.4 ppm	48-hour Honey Bee Contact LD_{50}:	>100 μg/bee
96-hour LC_{50} Mysid:	1.1 ppm		

Environmental Fate: Thiophanate methyl degrades primarily to methyl 2- benzimidazole carbamate (MBC) whether on foliage, in soil or in water in a matter of days. Both photolysis and hydrolysis are important routes of degradation. MBC is microbially degraded, but stable to aqueous photodegradation, stable to hydrolysis at pH values ranging from 5 to 7 and stable to soil photolysis. Metabolism under aerobic and anaerobic conditions in both soil and water proceeds at a slow rate. Under application conditions, average half-lives are about 20 to 50 days, but may be as short as a few days with repeated use.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:
Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Improper disposal of excess pesticide is a violation of Federal law.

Container Handling and Disposal: Non-refillable container. Do not reuse this container to hold materials other than pesticides or dilute pesticides (rinsate). After emptying and cleaning, it may be allowable to temporarily hold rinsate or other pesticide-related materials in the container. Contact your state regulatory agency to determine allowable practices in your state. Offer for recycling, if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ 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.

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

14. TRANSPORTATION INFORMATION

DOT

< 2 gallons per completed package
Non Regulated

≥ 2 gallons but < 119 gallons per completed package
UN 3082, Environmentally hazardous substances, liquid, n.o.s., 9, III, (thiophanate-methyl), RQ

≥ 119 gallons per completed package
UN 3082, Environmentally hazardous substances, liquid, n.o.s., 9, III, (thiophanate-methyl), Marine Pollutant, RQ

IMDG
UN 3082, Environmentally hazardous substances, liquid, n.o.s., 9, III, (thiophanate-methyl), Marine Pollutant

IATA
Non Regulated

15. REGULATORY INFORMATION

EPA FIFRA INFORMATION

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION. Harmful if absorbed through skin. Harmful if inhaled. Avoid contact with eyes, skin, or clothing. Avoid breathing spray mist.

U.S. FEDERAL REGULATIONS

TSCA Inventory: This product is exempted from TSCA because it is solely for FIFRA regulated use.

SARA Hazard Notification/Reporting:
Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370):
Immediate and Delayed

Section 313 Toxic Chemical(s):
Thiophanate-methyl (CAS No. 23564-05-8) 40 – 42.5% equivalent by weight in product

Reportable Quantity (RQ) under U.S. CERCLA:
Thiophanate-methyl (CAS No. 23564-05-8) 10 pounds

RCRA Waste Code:
Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

State Information:
Other state regulations may apply. Check individual state requirements.

California Proposition 65: Thiophanate-methyl is known to the state of California to cause developmental effects in males and females.

16. OTHER INFORMATION

National Fire Protection Association (NFPA) Hazard Rating:
Rating for this product: Health: 0 **Flammability:** 0 **Reactivity:** 1
Hazards Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

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