

RESTRICTED USE PESTICIDE

Toxic to fish and aquatic organisms.

For retail sale to and use only by certified applicators, or persons under their direct supervision and only for the uses covered by the certified applicator's certification.

1658

Net Contents

Talstar[®]

Nursery Flowable

Insecticide/Miticide

For Commercial Non-Food Use on Indoor and Outdoor Ornamentals, Greenhouses and Nurseries.

EPA Reg. No. 279-3155

EPA Est. 279-

Active Ingredient:	By Wt.
Bifenthrin:*	7.9%
Inert Ingredients:	92.1%
	100.0%

*Cis isomers 97% minimum, trans isomers 3% maximum.

Talstar[®] Flowable insecticide/miticide contains 2/3 pound active ingredient per gallon.

U.S. Patent No. 4,238,505

KEEP OUT OF REACH OF CHILDREN
CAUTION

See other panels for additional precautionary information.

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

IF INHALED: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.

IF ON SKIN: Wash with plenty of soap and water. Get medical attention.

IF IN EYES: Flush with plenty of water. Call a physician if irritation persists.

Note to Physician:

This product is a pyrethroid. If large amounts have been ingested, the stomach and intestine should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and so should be avoided.

For Emergency Assistance Call: (800) 331-3148

PRECAUTIONARY STATEMENTS

Hazards to Humans (and Domestic Animals)

CAUTION

Harmful if swallowed, inhaled or absorbed through skin. Avoid contact with skin, eyes or clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling.

Personnel Protective Equipment:

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

Applicators and other handlers (other than mixers and loaders) must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride or viton.
- Shoes plus socks

Mixers and Loaders must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride or viton.
- Shoes plus socks
- Protective eyewear

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.



FMC Corporation
Agricultural Products Group
Philadelphia PA 19103

7/02-C

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 outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards

This pesticide is extremely toxic to fish and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and run-off from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow to drift to blooming crops if bees are visiting the treatment area.

DIRECTIONS FOR USE

RESTRICTED USE PESTICIDE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

Do not apply this product through any kind of irrigation system.

AGRICULTURE 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 intervals. The requirements in this box only apply to users 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 or butyl rubber or nitrile rubber or neoprene rubber or polyvinyl chloride or viton.
- Shoes plus socks

Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standards for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries and greenhouses.

Do not allow people or pets on treated surfaces until the spray has dried.

STORAGE AND DISPOSAL

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

Pesticide Storage: Keep out of reach of children and animals. Store in original containers only. Store in a cool, dry place and avoid excess heat. Carefully open containers. After partial use replace lids and close tightly. Do not put concentrate or dilute material into food or drink container.

In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills. Call FMC: (800) 331-3148.

To Confine Spill: If liquid, dike surrounding area or absorb with sand, cat litter or commercial clay. If dry material, cover to prevent dispersal. Place damaged package in a holding container. Identify contents.

Pesticide Disposal: Pesticide wastes are toxic. Do not contaminate water, food or feed by storage or disposal. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. Dispose of excess or waste pesticide by use according to label directions, or contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Disposal Plastic Container: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Returnable/Refillable Sealed Container: Do not rinse container. Do not empty remaining formulated product. Do not break seals. Return intact to point of purchase.

General Applications Instructions

Talstar® Nursery Flowable insecticide/miticide formulation mixes readily with water and other aqueous carriers, and controls a wide spectrum of insects and mites on trees, shrubs, foliage plants, non-bearing fruit and nut trees, and flowers in greenhouses and outdoor nurseries. Non-bearing crops are perennial crops that will not produce a harvestable raw agricultural commodity during the season of application.

Talstar Nursery Flowable may be tank-mixed with other products, including insect growth regulators. When tank mixing Talstar Nursery Flowable with other products, observe all precautions and limitations on each separate product label. The addition of spreader stickers is not necessary. The physical compatibility of Talstar Nursery Flowable may vary with different sources of pesticide products, and local cultural practices. Any tank mixture which has not been previously tested should be prepared on a small scale (pint or quart jar), using the proper proportions of chemicals and water to ensure the physical compatibility of the mixture.

The following procedure is recommended for preparation of a new tank mix, unless specified otherwise in label directions: (1) Add wettable powders to tank water, (2) Agitate, (3) Add liquids and flowables, (4) Agitate, (5) Add emulsifiable concentrates, and (6) Agitate. If a mixture is found to be incompatible following this order of addition, try reversing the order of addition, or increase the volume of water. **Note:** If the tank-mixture is found to be compatible after increasing the amount of water, then the sprayer will need to be recalibrated for a higher volume application. Do not allow tank mix to stand overnight.

Maximum rates: Do not apply more than 0.2 lb ai/acre (40 fl. ozs. of Talstar Nursery Flowable) in a single application or per year for outdoor applications.

Resistance: Some insects are known to develop resistance to products used repeatedly for control. Because the development of resistance cannot be predicted, the use of this product should conform to resistance management strategies established for the use area. Consult your local or state pest management authorities for details.

If resistance to this product develops in your area, this product, or other products with a similar mode of action, may not provide adequate control. If poor performance cannot be attributed to improper application or extreme weather conditions, a resistant strain of insect may be present. If you experience difficulty with control and suspect that resistance is a reasonable cause, immediately consult your local company representative or pest management advisor for the best alternative method of control for your area.

Talstar Nursery Flowable Dilution Chart

Applic. Volume: Gallons Per Acre	Applic. Rate: Lbs ai per Acre	Fluid Ounces* of Talstar Nursery Flowable Diluted to these Volumes of Finished Spray			
		1 Gallon	25 Gallons	50 Gallons	100 Gallons
50	0.025	0.1	2.5	5.0	10.0
50	0.05	0.2	5.0	10.0	20.0
50	0.1	0.4	10.0	20.0	40.0
50	0.2	0.8	20.0	40.0	80.0
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100	0.025	0.05	1.25	2.5	5.0
100	0.05	0.1	2.5	5.0	10.0
100	0.1	0.2	5.0	10.0	20.0
100	0.2	0.4	10.0	20.0	40.0
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150	0.025	0.03	0.83	1.67	3.3
150	0.05	0.07	1.67	3.33	6.7
150	0.1	1.33	3.33	6.67	13.3
150	0.2	2.66	6.67	13.33	26.7
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200	0.025	0.025	0.63	1.25	2.5
200	0.05	0.05	1.25	2.5	5.0
200	0.1	0.1	2.5	5.0	10.0
200	0.2	0.2	5.0	10.0	20.0
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250	0.025	—	0.5	1.0	2.0
250	0.05	—	1.0	2.0	4.0
250	0.1	—	2.0	4.0	8.0
250	0.2	—	4.0	8.0	16.0
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300	0.025	—	0.42	0.83	1.7
300	0.05	—	0.83	1.67	3.3
300	0.1	—	1.67	3.33	6.7
300	0.2	—	3.33	6.67	13.3

*To convert to milliliters, multiply by 29.57

1 fl. oz. = 29.57 ml = 2 tablespoons = 6 teaspoons

Do not use household utensils to measure Talstar Nursery Flowable.

Formula for Determining the Active Ingredient Content of the Finished Spray Mixture: The following formula may be used to determine the percent active ingredient that is in the spray tank after mixing Talstar Nursery Flowable:

$$\frac{(7.9)(\text{Fl. Oz. of Talstar added to tank})}{(\text{Gallons of finished spray mix})(128)} = \text{Percent Active Ingredient of spray mix}$$

APPLICATION RECOMMENDATIONS

Ornamentals in Greenhouses, Lath Houses, Shade Houses and Outdoor Nurseries, including Non-Bearing Fruit and Nut Trees

Apply 0.025 to 0.2 lbs ai/A (5 to 40 fl. ozs.) of Talstar Nursery Flowable insecticide/miticide. Talstar Nursery Flowable may be diluted and applied in various volumes of water providing that the maximum label rate (0.2 lbs ai/A or 40 fl. ozs.) is not exceeded (refer to Dilution Chart for specific instructions). Talstar Nursery Flowable may be applied through low volume application equipment by dilution with water or other carriers and providing that the maximum label rate (0.2 lbs ai/A or 40 fl. ozs.) is not exceeded.

ORNAMENTAL APPLICATION RATES

The application rates listed in the following table will provide control of the respective pests under typical conditions. However, at the discretion of the applicator, Talstar Nursery Flowable may be applied at up to 0.2 lbs ai/A (40 fl ozs) to control each of the pest listed in this Table.

Pest	Application Rate Talstar Nursery Flowable	
	lbs ai/A	Fluid Ounces per Acre
Aphids Bagworms ¹ Cutworms Elm Leaf Beetles Fall Webworms Lace Bugs Leaf Feeding Caterpillars Plant Bugs (Including <i>Lygus spp.</i>) Tent Caterpillars	0.025 - 0.05	5 - 10
Beet Armyworm Black Vine Weevil (Adults) Brown Soft Scales Broad Mites Budworms California Red Scale (Crawlers) ² Centipedes Citrus Thrips Clover Mites Crickets Diaprepes (Adults) Earwigs European Red Mite Flea Beetles Fungus Gnats (Adults) Grasshoppers Gypsy Moth Caterpillars Leafhoppers Leafrollers Mealybugs Millipedes Mites Orchid Weevil Pillbugs Pine Needle Scales (Crawlers) ² San Jose Scales (Crawlers) ² Sowbugs Spider Mites Spiders Thrips Tip Moths Twig Borers ² Weevils Whiteflies	0.05 - 0.1	10 - 20
Ants Imported Fire Ants** Japanese Beetle (Adult) Leafminers Pecan Leaf Scorch Mite Pine Shoot Beetle (Adults)	0.1 - 0.2	20 - 40

¹**Bagworms:** Apply when larvae begin to hatch and spray larvae directly. Applications when larvae are young will be most effective.
²**Scale Crawlers and Twig Borers:** Treat trunks, stems and twigs in addition to plant foliage.
****For foraging ants.**

Certain cultivars may be sensitive to the final spray solution. A small number of plants should be treated and observed for one week prior to application to the entire planting.

Apply with ground equipment only.

Do not apply when wind direction favors downwind drift towards nearby water bodies.

Do not apply when wind velocity exceeds 10 mph.

Avoid application when wind gusts approach 10 mph.

Do not apply when a temperature inversion exists.

Apply using the largest nozzle size compatible with adequate coverage.

Do not apply if rain is expected within 12 hours (or whatever time is necessary for the spray to dry).

Do not apply by ground equipment within 25 feet of lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries, and commercial fish farm ponds. When treating tall trees (>15 feet) from the ground with high pressure sprays or during any application with air assisted equipment (mist blower) do not apply within 150 feet of aquatic areas.

Imported Fire Ant Quarantine Treatment

Against Imported Fire Ants (IFA) in Potting Media (including balled and containerized nursery grown ornamental trees, shrubs, plants, flowers, conifers, Christmas trees, and non-bearing fruit and nut-trees). Talstar Nursery Flowable insecticide/miticide is approved and can be used in accordance with the USDA Imported Fire Ant Quarantine Program. Talstar Nursery Flowable may be applied either soil incorporated, as a topical application, or as a high volume drench treatment.

Soil Incorporation: Incorporate the appropriate volume of Talstar Nursery Flowable (see table below) per cubic yard of potting media by diluting it in water (typically 1 quart to 1 gallon per cubic yard of media) and sprinkling or spraying it onto the media. The applications are based on the dry bulk density of the potting media. When used in accordance with USDA guidelines, this application will provide a 6 month certification period.

Recommended Soil Incorporation Rate of Talstar Nursery Flowable for Control of IFA in Potting Media.

Potting Media Bulk Density (lbs. cubic yard)	Fluid ounces of Talstar Nursery Flowable in one cubic yard
200	1.9
400	3.8
600	5.7
800	7.6
1000	9.5
1200	11.4
1400	13.3

Use proportional amounts of Talstar Nursery Flowable for potting media with bulk densities not listed.

Topical Application: Mix Talstar Nursery Flowable in 1,000 ounces of water based on container size and bulk density of the potting media (see table below). Apply one (1) ounce of the mix to each container evenly distributed over the surface of the potting media. Irrigate all treated containers with 1.5 inches of water following application. When used in accordance with USDA guidelines, this application will provide a 6 month certification period.

Recommended Topical Drench Application Rate of Talstar Nursery Flowable for Control of IFA in Potting Media.

Potting Media Bulk Density (lbs. cubic yard)	Fluid ounces of Talstar Nursery Flowable per 1,000 ounces of water	
	3 Qt. Container	4 Qt. Container
200	3.6	5.2
400	7.2	10.4
600	10.8	15.6
800	14.4	20.8
1000	18.0	26.0
1200	21.6	31.2
1400	25.2	36.4

Use proportional amounts of Talstar Nursery Flowable for potting media with bulk densities not listed.

High Volume Drench: Apply Talstar Nursery Flowable as a high volume drench by mixing the appropriate amount of product based on the bulk density in 100 gallons of water (see table below). Apply mix to individual containers to the point of saturation. The amount of mix used for each plant is generally 1/5 volume of the container. When used in accordance with USDA guidelines, this application will provide a 6 month certification period.

Recommended High Drench Application Rate of Talstar Nursery Flowable for Control of IFA in Potting Media.

Potting Media Bulk Density (lbs. cubic yard)	Fluid ounces of Talstar Nursery Flowable in 100 Gallons
200	2.4
400	4.8
600	7.2
800	9.6
1000	12.0
1200	14.4
1400	16.8

Use proportional amounts of Talstar Nursery Flowable for potting media with bulk densities not listed.

Larval Control in Potting Media Of Containerized Plants.

Black Vine Weevil Larval Control - Preventative Treatment - Topical Drench: For preventative control of black vine weevil larvae in containerized plants, dilute Talstar Nursery Flowable at the rate of 10 to 40 fl. ozs. (0.05 to 0.2 lb AI) per 100 gallons and apply as a drench at the rate of 4 to 8 fluid ounces of finished spray per 6 inch (diameter) container. Use a proportional volume of finished spray for containers less than or greater than 6 inches in diameter. Ideally, the media should be treated to the point of saturation, which generally requires 1/5 the volume of the container. Diluting 10 fluid ounces of Talstar Nursery Flowable per 100 gallons and applying 8 fluid ounces of finished spray per 6 inch (diameter) container will provide black vine weevil larval control for one growing season when the application is made in the spring. Diluting 20 to 40 fluid ounces of Talstar Nursery Flowable per 100 gallons and applying 8 fluid ounces of finished spray per 6 inch (diameter) container will provide black vine weevil larval control for two growing seasons when the application is made in the spring.

White Grub Control - Preventative Treatment - Topical Drench: For preventative control of white grubs (including, but not limited to, Japanese beetle, oriental beetle and European chafer) in containerized plants, dilute Talstar Nursery Flowable at the rate of 40 to 80 fluid ounces (0.2 to 0.4 lb AI) per 100 gallons and apply as a drench at the rate of 4 to 8 fluid ounces of finished spray per 6 inch (diameter) container. Use a proportional volume of finished spray for containers less than or greater than 6 inches in diameter. Ideally, the media should be treated to the point of saturation, which generally requires 1/5 the volume of the container. Use the higher application rate for a longer period of control.

Black Vine Weevil and White Grub Larval Control - Preventative Treatment - Media Incorporation: For preventative control of black vine weevil and white grub larvae in containerized plants, incorporate the appropriate volume of Talstar Nursery Flowable (see table below) per cubic yard of potting media by diluting it in water (typically 1 quart to 1 gallon per cubic yard of media) and sprinkling or spraying it onto the media. Use the higher application rates for longer periods of control.

Potting Media Bulk Density (lbs. per cubic yard)	Fluid ounces of Talstar Nursery Flowable in one cubic yard			
	10 PPM	15 PPM	20 PPM	25 PPM
200	0.4	0.6	0.8	1.0
300	0.6	0.9	1.2	1.5
400	0.8	1.2	1.6	2.0
500	1.0	1.5	2.0	2.5
600	1.2	1.8	2.4	3.0
700	1.4	2.1	2.8	3.5
800	1.6	2.4	3.2	4.0
900	1.8	2.7	3.6	4.5
1000	2.0	3.0	4.0	5.0

The application rates listed above are based on the dry bulk density of the potting media. Use proportional volumes of Talstar Nursery Flowable for potting media with dry bulk densities that are not listed above.

Black Vine Weevil Larval Control - Curative Treatment - Topical Drench: To control black vine weevil larvae infesting containerized plants, dilute Talstar Nursery Flowable at the rate of 10 to 40 fl. ozs. (0.05 to 0.2 lb AI) per 100 gallons and apply as a drench at the rate of 8 to 16 fluid ounces of finished spray per 6 inch (diameter) container. Use a proportional volume of finished spray for containers less than or greater than 6 inches in diameter. Ideally, the media should be treated to the point of saturation, which generally requires 1/5 the volume of the container.

Bare-root Treatment for Preventative Root Weevil Larval Control: To protect treated roots of field grown nursery stock from feeding by root weevil larvae, dilute one gallon of Talstar Nursery Flowable in 100 gallons of water and treat the bare roots of plants that are being transplanted into the field either by dipping the roots into the insecticide solution for ten seconds or by spraying the insecticide solution onto the roots.

Diaprepes Weevil Larval Control - Curative Treatment - Topical Drench: To control *Diaprepes* weevil larvae infesting containerized plants, dilute Talstar Nursery Flowable at the rate of 10 to 40 fl. ozs (0.05 to 0.2 lb AI) per 100 gallons and apply as a drench at the rate of 8 to 16 fluid ounces of finished spray per 6 inch (diameter) container. Use a proportional volume of finished spray for containers less than or greater than 6 inches in diameter. Ideally, the media should be treated to the point of saturation, which generally requires 1/5 the volume of the container.

Fungus Gnat Larval Control - Preventative Treatment - Topical

Drench: For preventative control of fungus gnat larvae in containerized plants, dilute Talstar Nursery Flowable at the rate of 20 to 40 fl. ozs (0.1 to 0.2 lb AI) per 100 gallons and apply as a drench at the rate of 4 to 8 fl. ozs of finished spray per 6 inch (diameter) container. Use a proportional volume of finished spray for containers less than or greater than 6 inches in diameter. Ideally, the media should be treated to the point of saturation, which generally requires 1/5 the volume of the container. Use the higher application rate for a longer period of control.

Dealers Should Sell in Original Packages Only

Terms of Sale or Use: On purchase of this product buyer and user agree to the following conditions:

Warranty: FMC makes no warranty, expressed or implied, concerning the use of this product other than indicated on the label. Except as so warranted, the product is sold as is. Buyer and user assume all risk of use and/or handling and/or storage of this material when such use and/or handling and/or storage is contrary to label instructions.

Use of Product: FMC's recommendations for use of this product are based upon tests believed to be reliable. The use of this product being beyond the control of the manufacturer, no guarantee, expressed or implied, is made as to the effects of such or the results to be obtained if not used in accordance with directions or established safe practice.

Damages: Buyer's or user's exclusive remedy for damages for breach of warranty or negligence shall be limited to direct damages not exceeding the purchase price paid and shall not include incidental or consequential damages.

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Revisions:

1. Removal of sod farm use directions.
2. Removal of Fungus Gnat Larval Control - Curative Treatment - Topical Drench.