



279-3156 02/02/2000 1/8  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

FEB - 2 2000

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

FMC Corporation  
1735 Market Street  
Philadelphia, PA 19103

SUBJECT: Request Expand Use Pattern - Addition of Sod Farms  
Talstar GC Flowable Insecticide/Miticide  
EPA Reg. No. 279-3156  
Your Submissions Dated September 23, 1999

Dear Mr. Meindl:

The amendment referred to above, submitted in connection with registration under section 3(c)(7)(A) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), is acceptable provided that you:

1. Submit/cite all data required for registration/reregistration of your product under FIFRA section 3(c)(5) or 4(a) when the Agency requires all registrants of similar products to submit such data.
2. Make the labeling changes listed below before you release the product for shipment bearing the amended labeling:
  - a. Under PRECAUTIONARY STATEMENTS, add the following statement to the end of the paragraph under "Caution": "Wash thoroughly with soap and water after handling".
  - b. Add the following statement near the first aid statements: "Have the product container or label with you when calling a poison control center or doctor or going for treatment."
  - c. The retreatment statements should include a maximum frequency of application, such as: "... but not more than \_\_\_ times per \_\_\_." Specifically noted under MIXING DIRECTIONS, page 6.
  - d. Under DIRECTIONS FOR USE, after the statement "Do not apply by air," add the following: "Do not apply by any kind of irrigation system."

- e. Under GRASS APPLICATION RATES, it appears that footnote #11 provides additional clarity to the statement, "However, at the discretion of the applicator...". In order to avoid confusion with the series of footnotes which follow, cite footnote #11 at the end of that paragraph.
  
- 3. Submit two copies of your final printed labeling before you release the above referenced product for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions.

A stamped copy of the labeling is enclosed for your records. If you have any questions regarding this letter, please contact Linda Werrell of my team at (703)308-8033.

Sincerely,



George T. LaRocca  
Product Manager 13  
Insecticide Branch  
Registration Division

Enclosure

SHADED COPY

3/8

**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.

1657

# Talstar®

**GC Flowable**  
INSECTICIDE/MITICIDE



For use to control insect pests on golf courses and on ornamentals and lawns in landscaped areas around residential, institutional, public, commercial and industrial buildings, parks, recreational areas, golf courses, sod farms and athletic fields.

EPA Reg. No. 279-3156

EPA Est. 279-

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

\*Cis isomers 97% minimum, trans isomers 3% maximum.  
Talstar® Flowable insecticide/miticide contains 1/2 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.  
**DO NOT USE THIS PRODUCT ON GOLF COURSES IN NAS-SAU COUNTY OR SUFFOLK COUNTY, NEW YORK.**



FMC Corporation  
Agricultural Products Group  
Philadelphia PA 19103  
279 3156

ACCEPTED  
with COMBENTS  
in EPA Letter Dated  
FEB - 2 2000

## Net Contents

1657 9/99 Sod Farms Dft.2

### FIRST AID

**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 dust (vapor or spray mist).

#### The following Personal Protective Equipment requirements apply to sod farm use only

##### 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.

### 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 in 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 of 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

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 by air.

Not for use on sod farms or grass grown for seed.

### AGRICULTURE USE REQUIREMENTS

Use the product only in accordance with its labeling and with the Worker Protection Standard, 29 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.

Do not touch treated surface until dry.

**General Applications Instructions**

Talstar GC Flowable formulation mixes readily with water and other aqueous carriers, and controls a wide spectrum of insects and mites on ornamentals, trees, shrubs, foliage plants, non-bearing fruit and nut trees, and flowers in interiorscapes including hotels, shopping malls, office buildings, etc., and, outdoor plantscapes, such as around residential dwellings, parks, institutional, public, commercial and industrial buildings, recreational, athletic fields, home lawns, golf courses and sod farms. Non-bearing crops are perennial crops that will not produce a harvestable raw agricultural commodity during the season of application.

Talstar GC Flowable may be tank-mixed with other products, including insect growth regulators. When tank mixing Talstar GC with other products, observe all precautions and limitations on each separate product label. The physical compatibility of Talstar GC 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 0.1 lb ai/acre (20 fl. ozs. Talstar GC Flowable) in a single application, no more than 0.2 lb ai/acre/year (40 fl. ozs. Talstar GC Flowable) for outdoor applications.

**Note:** For large infestations of ants, imported fire ants, and mole crickets, a single application of 0.2 lb ai/acre (40 fl. ozs of Talstar GC Flowable) may be applied once per year.

**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.

**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.

**IMPREGNATION AND APPLICATION OF TALSTAR ON DRY BULK TURF FERTILIZERS**

Talstar<sup>®</sup> GC Flowable insecticide/miticide may be impregnated on dry bulk fertilizers. When applied as directed, Talstar/dry bulk fertilizer mixtures provide insect control equal to that provided by the same rates of Talstar applied in water.

**Impregnation:** Apply using a minimum of 100 pounds of dry bulk fertilizer per acre with the recommended amount of Talstar insecticide/miticide per acre. Use a closed rotary-drum mixer or a similar type of closed blender equipped with suitable spray equipment. The spray nozzle(s) should be positioned to provide a uniform, fine spray pattern over the tumbling fertilizer for thorough coverage. The physical properties of fertilizers vary, particularly in liquid absorptive capacity. When absorptivity is sufficient, simple spray impregnation of the fertilizer with Talstar provides a satisfactory, dry mixture. If the absorptive capacity is inadequate, use of a highly absorptive powder is required to provide a dry, flowable mixture. Microcel E (Johns-Manville Products Corporation) is a recommended absorbent powder. Generally less than 2% by weight of Microcel E is required. **DO NOT** impregnate Talstar onto straight coated ammonium nitrate or straight limestone because these materials will not absorb the insecticide. Dry fertilizer blends containing mixtures of ammonium nitrate or limestone may be impregnated with Talstar.

The amount of Talstar actually required in the preparation of individual fertilizer mixtures should be determined carefully for each production operation. This is necessary to ensure that the amount of pesticide actually contained in the mixture applied to the soil represents the correct rate of use. Bulk fertilizer impregnated with Talstar insecticide/miticide should be applied immediately, not stored.

All individual Federal and State regulations relating to bulk dry fertilizer blending, registration, labeling, and application of the mixtures are the responsibility of the individual and/or company selling the fertilizer and Talstar mixture.

Fertilizer for this use should be Turf fertilizers recommended for specific regions.

**Talstar GC Flowable Turf Dilution Chart**

Applic. Volume: Gallons Per 1,000 sq. ft.	Applic. Rate: Pounds AI/Acre	Fluid Ounces of Talstar GC Flowable Diluted to these Volumes of Finished Spray				
		1 Gallon	10 Gallons	25 Gallons	50 Gallons	100 Gallons
0.5	0.05	0.5	5.0	12.5	25.0	50.0
0.5	0.1	1.0	10.0	25.0	50.0	100.0
0.5	0.2	2.0	20.0	50.0	100.0	200.0
0.75	0.05	0.33	3.33	8.33	16.67	33.33
0.75	0.1	0.67	6.67	16.67	33.33	66.67
0.75	0.2	1.33	13.33	33.33	66.67	133.33
1	0.05	0.25	2.5	6.25	12.5	25.0
1	0.1	0.5	5.0	12.5	25.0	50.0
1	0.2	1.0	10.0	25.0	50.0	100.0
1.5	0.05	0.17	1.67	4.17	8.33	16.67
1.5	0.1	0.33	3.33	8.33	16.67	33.33
1.5	0.2	0.67	6.67	16.67	33.33	66.67
2	0.05	0.13	1.25	3.13	6.25	12.5
2	0.1	0.25	2.5	6.25	12.5	25.0
2	0.2	0.5	5.0	12.5	25.0	50.0
2.3 <sup>a</sup>	0.05	0.11	1.09	2.72	5.43	10.87
2.3 <sup>a</sup>	0.1	0.22	2.17	5.43	10.87	21.74
2.3 <sup>a</sup>	0.2	0.43	4.35	10.87	21.74	43.48
3	0.05	—	0.83	2.09	4.17	8.33
3	0.1	0.17	1.66	4.17	8.33	16.67
3	0.2	0.33	3.33	8.33	16.67	33.33
4	0.05	—	0.63	1.56	3.13	6.25
4	0.1	0.13	1.25	3.13	6.25	12.5
4	0.2	0.25	2.5	6.25	12.5	25.0

<sup>a</sup>To convert to milliliters, multiply by 29.57

<sup>a</sup>100 gallons per acre

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

Do not use household utensils to measure Talstar GC Flowable.

### APPLICATION RECOMMENDATIONS

**Grass Areas (Including golf courses, sod farms, home lawns, lawn areas around parks, institutional, public, commercial and industrial buildings, recreational and athletic fields).**

Apply Talstar GC as a surface or sub-surface treatment. Use application volumes of up to 10 gallons per 1000 square feet to get uniform coverage when treating dense and or long grass foliage.

For low volume applications, less than 2 gallons/1000 square feet, immediate irrigation of treated area with at least 0.25 inches of water following application to ensure efficacy of sub-surface pests such as, but not limited to, Mole Crickets, is recommended.

### GRASS 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 GC may be applied at up to 0.1 lb ai/A (20 fl. ozs.) to control each of the pests listed in this Table. (0.2 lb ai/A or 40 fl. ozs. for ants, imported fire ants and mole crickets).

Pest	Active Ingredient lbs. per acre	Application Rate Talstar GC Flowable	
		fl. oz per acre	fl. oz. per 1000 sq.ft.
Armyworms <sup>1</sup> Cutworms <sup>1</sup> Sod Webworm <sup>1</sup>	0.05 lbs ai per acre	10 fl. oz per acre	0.25 fl. oz. per 1000 sq.ft.
Annual Bluegrass Weevil (Hyperodes) (adult) <sup>2</sup>	0.05 - 0.1 lbs ai per acre	10 - 20 fl. oz per acre	0.25 - 0.5 fl. oz. per 1000 sq.ft.
Billbugs (Adult) <sup>3</sup> Black Turfgrass Ataenius (Adult) <sup>4</sup> Centipedes Chinch Bugs <sup>5</sup> Crickets Earwigs Fleas (Adult) Grasshoppers Leafhoppers Mealybugs Millipedes Mites <sup>6</sup> Mole Cricket (Adult) <sup>7</sup> Mole Cricket (Nymph) <sup>8</sup> Pillbugs Sowbugs			
Fleas (Larvae) <sup>9</sup> Imported Fire Ants Japanese Beetle (Adult) Ticks <sup>10</sup>	0.1 lbs ai per acre	20 fl. oz per acre	0.5 fl. oz. per 1000 sq.ft
Imported Fire Ants <sup>12</sup> Mole Crickets	0.2 <sup>11</sup> lbs ai per acre	40 <sup>11</sup> fl. oz per acre	1 fl. oz. <sup>11</sup> per 1000 sq.ft

In New York State, this product may NOT be applied to any grass or turf area within 100 feet of a water body (lake, pond, river, stream, wetland, or drainage ditch).

In New York State, do make a single repeat application of Talstar GC if there are signs of renewed insect activity, but not sooner than two weeks after the first application.

#### Comments

<sup>1</sup>**Armyworms, Cutworms and Sod Webworms:** To ensure optimum control, delay watering (irrigation) or mowing for 24 hours after application. If the grass area is being maintained at a mowing height of greater than 1 inch, then higher application rates (Up to 0.1 lb ai/A or 20 fl. ozs. of Talstar GC Flowable) may be required during periods of high pest pressure.

<sup>2</sup>**Annual Bluegrass Weevil (Hyperodes) adults:** Applications should be timed to control adult weevils as they leave their overwintering sites and move into grass areas. This movement generally begins when Forsythia is in full bloom and concludes when flowering dogwood (*Coronus florida*) is in full bloom. Consult your State Cooperative Extension Service for more specific information regarding application timing.

<sup>3</sup>**Billbug adults:** Applications should be made when adult billbugs are first observed during April and May. Degree day models have been developed to optimize application timing. Consult your State Cooperative Extension Service for information specific to your region. In temperate regions, spring applications targeting billbug adults will also provide control of over-wintered chinch bugs.

<sup>4</sup>**Black Turfgrass Ataenius adults:** Applications should be made during May and July to control the first and second generation of black turfgrass ataenius adults, respectively. The May application should be timed to coincide with the full bloom stage of Vanhoutte spiraea (*Spiraea vanhouttei*) and horse chestnut (*Aesculus hippocastanum*). The July application should be timed to coincide with

blooming of Rose of Sharon (*Hibiscus syriacus*).

<sup>5</sup>**Chinch Bugs:** Chinch Bugs infest the base of grass plants and are often found in the thatch layer. Irrigation of the grass area before treatment will optimize the penetration of the insecticide to the area where the chinch bugs are located. Use higher volume applications if the thatch layer is excessive or if a relatively long mowing height is being maintained. Chinch Bugs can be one of the most difficult pests to control in grasses and the higher application rates (Up to 0.1 lb ai/A or 20 fl. ozs. of Talstar GC Flowable) may be required to control populations that contain both nymphs and adults during the middle of the summer.

<sup>6</sup>**Mites:** To ensure optimal control of eriophyid mites, apply in combination with the labeled application rate of a surfactant. A second application, five to seven days after the first, may be necessary to achieve control.

<sup>7</sup>**Mole Cricket adults:** Achieving control of adult mole crickets is difficult because preferred grass areas are subject to continuous invasion during the early spring by this extremely active stage. Applications should be made as late in the day as possible and should be watered in with up to 0.5 inches of water immediately after treatment. If the soil is not moist, then it is important to irrigate before application to bring the mole crickets closer to the soil surface where contact with the insecticide will be maximized. Grass areas that receive pressure from adult mole crickets should be treated at peak egg hatch to ensure optimum control of subsequent nymph populations (see below).

<sup>8</sup>**Mole Cricket nymphs:** Grass areas that received intense adult mole cricket pressure in the spring should be treated immediately prior to peak egg hatch. Optimal control is achieved at this time because young nymphs are more susceptible to insecticides and they are located near the soil surface where the insecticide is most concentrated. Control of larger, more damaging, nymphs later in the year may require both higher application rates and more frequent applications to maintain acceptable control. Applications should be made as late in the day as possible and should be watered in with up to 0.5 inches of water immediately after treatment. If the soil is not moist, then it is important to irrigate before application to bring the mole crickets closer to the soil surface where contact with the insecticide will be maximized.

<sup>9</sup>**Flea larvae:** Flea larvae develop in the soil of shaded areas that are accessible to pets or other animals. Use a higher volume application when treating these areas to ensure penetration of the insecticide into the soil. Note: if the lawn area is being treated with Talstar GC Flowable insecticide/miticide at 0.05 lb. ai/A (10 fl. ozs.) for adult flea control, then the larval application rate may be achieved by doubling the application volume.

<sup>10</sup>**Ticks:** Do not make spot applications. Treat the entire area where exposure to ticks may occur. Use higher spray volumes when treating areas with dense ground cover or heavy leaf litter. Ticks may be reintroduced from surrounding areas on host animals. Retreat as necessary to maintain adequate control. Do not allow public use of treated areas during application or until sprays have dried.

**Deer ticks (*Ixodes sp.*)** have a complicated life cycle that ranges over a two year period and involves four life stages. Applications should be made in the late fall and/or early spring to control adult ticks that are usually located on brush or grass above the soil surface and in mid to late spring to control larvae and nymphs that reside in the soil and leaf litter.

**American dog ticks** may be a considerable nuisance in suburban settings, particularly where homes are built on land that was previously field or forest. These ticks commonly congregate along paths or roadways where humans are likely to be encountered. Applications should be made as necessary from mid-spring to early fall to control American dog tick larvae, nymphs and adults.

<sup>11</sup>**Note:** For large infestations of ants, imported fire ants, and mole crickets, a single application of 0.2 lb ai/acre (40 fluid ounces of Talstar GC Flowable) may be applied once per year.

<sup>12</sup>**Imported Fire Ants:** Control will be optimized by combining broadcast applications that will control foraging workers and newly mated fly-in queens with mound drenches that will eliminate existing colonies. If the soil is not moist, then it is important to irrigate before application or use a high volume application. Broadcast treatments should apply 0.2 lb ai/A (40 fl. ozs. of Talstar GC Flowable). Mounds should be treated by diluting 1 teaspoon of Talstar GC Flowable per gallon of water and applying 1 to 2 gallons of finished spray per mound. The mounds should be treated with sufficient force to break their apex and allow the insecticide solution to flow into the ant tunnels. A four foot diameter circle around the mound should also be treated. For best results, apply in cool weather (65 - 80°F) or in early morning or late evening hours. Note: a spray rig that is calibrated to apply 0.2 lb ai/A (40 fl. ozs.) of Talstar GC Flowable in 5 gallons per 1,000 square feet contains the approximate dilution (1 teaspoon per gallon) that is required for fire ant mound drenches in the spray tank.

**ORNAMENTALS AND TREES:** For ornamental applications, apply 0.125 to 1.0 fluid ounce of Talstar GC Flowable insecticide/miticide per 1,000 square feet. Talstar GC Flowable may be diluted and applied in various volumes of water providing that the maximum label rate (1.0 fluid ounce per 1,000 square feet) is not exceeded (refer to Dilution Chart for specific instructions). Talstar GC may be applied through low volume application equipment by dilution with water or other carriers and providing that the maximum label rate (1.0 fluid ounce per 1,000 square feet) is not exceeded.

**Talstar GC Flowable Ornamental Dilution Chart**

Applic. Volume: Gallons Per 1,000 sq. ft.	Applic. Rate: Fluid Ounces per 1,000 sq. ft.	Fluid Ounces* of Talstar GC Flowable Diluted to these Volumes of Finished Spray			
		1 Gallon	5 Gallons	10 Gallons	100 Gallons
1.0	0.125	0.125	0.63	1.25	12.5
1.0	0.25	0.25	1.25	2.5	25.0
1.0	0.5	0.5	2.5	5.0	50.0
1.0	1.0	1.0	5.0	10.0	100.0
2.0	0.125	—	0.31	0.63	6.3
2.0	0.25	0.13	0.63	1.25	12.5
2.0	0.5	0.25	1.25	2.5	25.0
2.0	1.0	0.5	2.5	5.0	50.0
2.3 <sup>1</sup>	0.125	—	0.27	0.54	5.4
2.3 <sup>2</sup>	0.25	0.11	0.54	1.08	10.8
2.3 <sup>3</sup>	0.5	0.22	1.09	2.17	21.7
2.3 <sup>3</sup>	1.0	0.44	2.17	4.35	43.5
3.0	0.125	—	0.21	0.42	4.2
3.0	0.25	—	0.42	0.83	8.3
3.0	0.5	0.17	0.83	1.67	16.7
3.0	1.0	0.33	1.67	3.33	33.3
4.0	0.125	—	0.15	0.31	3.1
4.0	0.25	—	0.31	0.63	6.3
4.0	0.5	0.13	0.63	1.25	12.5
4.0	1.0	0.25	1.25	2.5	25.0
4.6 <sup>0</sup>	0.125	—	0.14	0.27	2.7
4.6 <sup>0</sup>	0.25	—	0.27	0.54	5.4
4.6 <sup>0</sup>	0.5	0.11	0.54	1.09	10.9
4.6 <sup>0</sup>	1.0	0.22	1.09	2.17	21.7
5.0	0.125	—	0.13	0.25	2.5
5.0	0.25	—	0.25	0.5	5.0
5.0	0.5	0.1	0.5	1.0	10.0
5.0	1.0	0.2	1.0	2.0	20.0
6.9 <sup>0</sup>	0.125	—	—	0.18	1.8
6.9 <sup>0</sup>	0.25	—	0.18	0.36	3.6
6.9 <sup>0</sup>	0.5	—	0.36	0.72	7.2
6.9 <sup>0</sup>	1.0	0.15	0.72	1.45	14.5
10.0	0.125	—	—	0.13	1.3
10.0	0.25	—	0.13	0.25	2.5
10.0	0.5	—	0.25	0.5	5.0
10.0	1.0	0.1	0.5	1.0	10.0

\*To convert to milliliters, multiply by 29.57

<sup>1</sup>100 gallons per acre

<sup>2</sup>200 gallons per acre

<sup>3</sup>300 gallons per acre

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

Do not use household utensils to measure Talstar GC Flowable.

**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 GC Flowable may be applied at up to 1 fluid ounce per 1,000 square feet to control each of the pest listed in this Table.

Pest	Application Rate Talstar GC
	Fluid Ounces per 1,000 square feet
Aphids Bagworms <sup>13</sup> Cutworms Elm Leaf Beetles Fall Webworms Lace Bugs Leaf Feeding Caterpillars Plant Bugs (Including <i>Lygus spp.</i> ) Tent Caterpillars	0.125 - 0.25
Beet Armyworm Black Vine Weevil (Adults) Brown Soft Scales Broad Mites Budworms California Red Scale (Crawlers) <sup>14</sup> 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) <sup>14</sup> San Jose Scales (Crawlers) <sup>14</sup> Sowbugs Spider Mites Spiders Thrips Tip Moths Twig Borers <sup>2</sup> Weevils Whiteflies	0.25 - 0.5
Ants Imported Fire Ants** Japanese Beetle (Adult) Leafminers Pecan Leaf Scorch Mite Pine Shoot Beetle (Adults)	0.5 - 1.0

<sup>13</sup>**Bagworms:** Apply when larvae begin to hatch and spray larvae directly. Applications when larvae are young will be most effective.

<sup>14</sup>**Scale Crawlers and Twig Borers:** Treat trunks, stems and twigs in addition to plant foliage.

\*\*For foraging ants.

Apply the specified application rate as a full coverage foliar spray. Typical application volume is 100 gallons per acre. Repeat treatment as necessary to achieve control using higher application rates as pest pressure & foliage area increases.

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.

Use of an alternate class of chemistry in a treatment program is recommended to prevent or delay pest resistance.

### Pest Control on Outside Surfaces and Around Buildings

For control of Ants, Bees, Biting Flies, Boxelder Bugs, Centipedes, Cockroaches, Crickets, Earwigs, Elm Leaf Beetles, Firebrats, Fleas, Flies, Millipedes, Mosquitoes, Pillbugs, Silverfish, Sowbugs, Spiders, Ticks, and Wasps.

Apply Talstar GC using a 0.03 to 0.06% emulsion as a residual spray to outside surfaces of buildings including, but not limited to, exterior siding, foundations, porches, window frames, eaves, patios, garages, refuse dumps, lawns such as grass areas adjacent or around private homes, duplexes, townhouses, condominiums, house trailers, apartment complexes, carports, garages, fence lines, storage sheds, barns, and other residential and non-commercial structures, soil, trunks of woody ornamentals and other areas where pests congregate or have been seen. Use a spray volume of 2 to 10 gallons of emulsion per 1,000 square feet

**Mixing Directions:** For 0.03% emulsion, mix 0.5 fluid oz. of Talstar GC per gallon of water. For 0.06% emulsion, mix 1 fluid oz. Talstar GC per gallon of water (1 fluid oz. = 2 tablespoons). Do not use household utensils to measure Talstar GC. Use the higher rate for heavy pest infestation, quicker knockdown or longer residual control. Repeat treatment as necessary to maintain effectiveness.

**Perimeter Treatment:** Treat a band of soil and vegetation 6 to 10 feet wide around and adjacent to the structure. Also, treat the foundation of the structure to a height of 2 to 3 feet. Apply 0.5 to 1.0 fluid ounces of Talstar per 1,000 square feet in sufficient water to provide adequate coverage (refer to Dilution Chart).

**For Ant and Fire Ant Mounds use Talstar GC 0.06% emulsion as Drench Method:** Apply 1-2 gallons of emulsion to each mound area by sprinkling the mound until it is wet and treat a 4 foot diameter circle around the mound. Use the higher volume for mounds larger than 12". For best results, apply in cool weather, such as in early morning or late evening hours, but preferably not in the heat of the day.

For turf treatments apply with ground application equipment only (and apply with nozzles not more than two feet above the grass).

Do not apply when wind conditions favor downwind drift to nearby water bodies.

Do not apply when wind velocity exceeds 10 miles per hour

Avoid application when wind gusts approach 10 mph.

Do not apply when a temperature inversion exists.

Apply using nozzles that provide the largest droplet size compatible with adequate coverage.

Do not apply for surface feeding pests 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.

Do not apply when grass areas are water-logged or the soil is saturated with water (i.e. will not accept irrigation).

### 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. See shaded areas.