

51036-221

09/26/2003

1/20



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

Pam Bruce
Federal Registrations Specialist
Micro Flo Company LLC
P.O. Box 772099
Memphis, Tennessee 38117-2099

SEP 26 2003

Subject: EPA Reg. NO.: 51036-221
40% Insecticidal Soap
Response to PR Notice 2001-1
Submission Dated May 20, 2003

Dear Ms. Bruce :

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable with the following provisions:

1. We note the use of the term "Use Recommendations" as subheadings and the word "Recommendations" used in the application charts throughout the labeling. The wording must be revised so that it does not imply that the information within is optional. Terms such as "Application Directions", "Application Instructions", and "Application Procedures" would be accepted.
2. It is preferred to have the "Storage and Disposal" Section appear at the end of the Direction for Use.

A stamped copy is enclosed for your records. Please submit one (1) final printed copy for the above mentioned label, incorporating the comment indicated above, before releasing the product for shipping.

If you have any questions or comments about this letter, please contact Stephanie Nguyen at 703-605-0702.

Sincerely,

A handwritten signature in black ink, appearing to read "D.C. Kenny".

Daniel C. Kenny
Product Manager (01)
Insecticide-Rodenticide Branch
Registration Division (7505C)

Enclosure

2/20

40% INSECTICIDAL SOAP

FOR USE ON
FRUITS, NUTS, VEGETABLES, FIELD CROPS AND ORNAMENTALS

ACTIVE INGREDIENTS:	BY WT.
Potassium salts of fatty acids.....	40.0%
INERT INGREDIENTS:.....	60.0%
TOTAL:	100.0%

KEEP OUT OF REACH OF CHILDREN

CAUTION

FIRST AID

IF IN EYES:

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

IF ON SKIN OR CLOTHING:

- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

IF SWALLOWED:

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

EMERGENCY TELEPHONE NUMBERS: Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact:

- (800) 424-9300 CHEMTREC (transportation and spills)
- (800) 900-4044 Poison Control Center (human health)
- (800) 345-4735 ASPCA (animal health)

EPA Reg. No. 51036-221

EPA Est. No. 51036-GA-1

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

ACCEPTED
with COMMENTS
In EPA Letter Dated:

SEP 26 2003

Under the Federal Insecticide,
Fungicide, and Rodenticide Act,
as amended, for the pesticide
registered under EPA Reg. No.

51036-221

1

STATEMENT OF PRACTICAL TREATMENT

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

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

~~IF SWALLOWED: Drink large quantities of water.~~

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION

Causes eye irritation. Harmful if absorbed through skin. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling. Prolonged or frequently repeated contact may cause allergic reactions in some individuals.

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear:

1. Long-sleeved shirt and long pants
2. ~~Waterproof gloves~~ **Chemical resistant gloves made of any water-proof material.**
3. Shoes plus socks
4. Protective eyewear

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

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

ENVIRONMENTAL HAZARDS

This product may be hazardous to 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. Do not contaminate water by cleaning of equipment or disposal of wastes.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame.

STORAGE AND DISPOSAL

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

STORAGE: Store only in original container, in a dry place, inaccessible to children and pets. Do not store full or partial containers in direct sunlight. KEEP CONTAINER TIGHTLY SEALED WHEN NOT IN USE.

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

CONTAINER DISPOSAL: Do not reuse empty container. Triple rinse, then offer for recycling or reconditioning, or puncture and dispose of in sanitary landfill or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke. Do not reuse empty container. Rinse thoroughly before discarding in trash.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment and restricted-entry intervals. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated such as plants, soil, or water, is:

1. Coveralls
2. ~~Waterproof gloves~~ Chemical resistant gloves made of any

water-proof material.

3. Shoes plus socks
4. Protective eyewear

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 Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. Keep children, pets, and other unprotected persons out of treated areas until sprays have dried.

GENERAL INFORMATION

40% Insecticidal Soap is an effective contact insecticide, miticide and fungicide for control of soft bodied insects, mites and powdery mildew. This product may be used to control targeted pests on crops which include vegetables, grapes and other small fruits, tree fruits, tree nuts, cotton, tobacco, shrubs, shade and ornamental trees, turf, foliage and flowering plants growing outdoors, in greenhouses and in interiorscapes. This product can be applied up to harvest.

Pests Controlled

This product may be used as a foliar spray to control or suppress soft bodied pests which include: adelgids, aphids, caterpillars, earwigs, lace bugs, leafhoppers, leafminers, mealybugs, mole crickets, plant bugs, psyllids, sawfly larvae, scales, spider mites, tent caterpillar, thrips, whiteflies, gypsy moth, and chinch bugs. This product provides curative control of powdery mildew.

MIXING AND APPLICATION**Rates**

- * Stand-alone rate: 40% Insecticidal Soap rates as low as 0.25% v/v or as high as 4% v/v may be used. The 2% v/v is the most frequently used stand-alone rate.
- * Refer to individual sections of this label for specific use rates for control of pests on specific crops.
- * Rates are provided as a % volume/volume (v/v) solution. A 2% v/v solution is prepared by adding 2 gallons of 40% Insecticidal Soap to 98 gallons of spray water.
- * The activity of this product is directly related to the solution concentration and to contact with the pest, not to the amount of product applied per acre.

- * Tank mix rate: To achieve enhanced and residual pest control, use a 1 to 2 % v/v solution of this product in combination with a recommended product.

RATE TABLE

Total Volume	Mix	% v/v Solution	Amount of 40% Insecticidal Soap		Tablespoons
			English	(Metric)	
1 gallon (3.785 liters)		0.25 %	0.315 oz	(9.5 ml)	0.63 tbsp.
		0.5 %	0.63 oz	(19 ml)	1.25 tbsp.
		1 %	1.25 oz	(38 ml)	2.5 tbsp.
		1.5 %	2 oz	(57 ml)	3.75 tbsp.
		2 %	2.5 oz	(76 ml)	5 tbsp.
		4 %	5 oz	(152 ml)	10 tbsp.
100 gallons (378.5 liters)		0.25 %	0.25 gal	(0.95 liter)	
		0.5 %	0.5 gal	(1.9 liters)	
		1 %	1 gal	(3.8 liters)	
		1.5 %	1.5 gals	(5.7 liters)	
		2 %	2 gals	(7.6 liters)	
		4 %	4 gals	(15.1 liters)	

Mixing

- * Always determine the compatibility of water, pesticides and other tank additives with this product prior to addition to the spray tank. Determine compatibility by conducting a jar test using proportional quantities of each material.
- * For best results, use freshly mixed spray made with soft water. If water has high mineral content (hardness > 300 ppm or 17.5 grains/gallon), check for compatibility as described above. If needed, add an approved compatibility agent to the tank prior to the addition of this product. Do not lower the pH of the final spray mixture below 8.0. See Notes to User: Understanding Plant Sensitivity.
- * A defoaming agent may be needed for use in sprayers equipped with an agitator.
- * This product is compatible with many pesticides which include: Agri-mek®, Ambush®, Apollo®, Azatin®, Asana XL®, Avid®, Bayleton®, Baythroid® 2, Bidrin®, Bolstar® 6, Capture®, Cygon®, diazinon, Dursban®, Eagle®, Guthion®, Lannate®, Lorsban®, Margosan C®, malathion, Mavrik®, Aquaflow®, Monitor®, Orthene®, Ovasyn®, Pageant®, Pipron®, Pounce®, Pyrellin®, Pyrenone®, Rally®, Rubigan®, Savey®, Sevin®, Thiodan®, Phaser®, Talstar®, Vendex® and Zephyr®.
- * Unless otherwise noted, do not tank mix this product with adjuvants such as penetrators, spreader stickers or activators, gibberellic acid, calcium nitrate or

diatomaceous earth, foliar nutrients, alkaline based chelating agents (such as EDTA), Aliette®, chlorothalonil and pesticides containing sulfur or metallic ions (such as: manganese, magnesium, iron, zinc, etc.) as they may be physically incompatible and/or phytotoxic.

- * Do not mix with Carzol® as they are physically incompatible.
 - * Do not mix 40% Insecticidal Soap with sulfur. Do not use within 3 days of a sulfur application.
 - * Use freshly prepared spray solutions.
- When using this product in a tank mix, read and follow all product labels. The recommended order of mixing is:
- * Compatibility agent (if needed)
 - * Wettable and soluble powders
 - * Flowable liquids
 - * Emulsifiable oils and concentrates
 - * 40% Insecticidal Soap
- * Application of spray mixtures should conform to use precautions and directions for all products included in the tank mix. Combinations should be kept agitated and sprayed promptly after mixing.

Timing of Application

- * Initiate applications as soon as pest is observed, or as needed to avoid economic injury. Repeat applications at one to two week intervals, or as needed, to control reinfesting or increasing pest populations.
- * Do not make repeat applications at less than 7 day intervals, or make more than 3 sequential applications at 7 to 14 day intervals unless your prior experience has shown the use pattern to be non-injurious to the type and the developmental stage of plant(s) to be treated under local growing conditions.

Application Guidelines

- * This product may be applied with most types of ground or aerial spray equipment. Do not use with pulse or thermal fogger applicators. Do not apply through any type of irrigation system.

This product must come into contact with the targeted soft bodied pests or powdery mildew to be effective. Complete coverage of pests is essential for maximum control. Direct sprays to contact the pests. In general, adequate coverage requires a minimum of 50 gallons of total spray volume per acre. Higher volumes may be required on larger perennial crops.

- * Apply 40% Insecticidal Soap solutions to wet (minimize run-off) to decrease the potential for injury on foliage, fruit and flowers of sensitive plants.
- * Apply promptly after mixing with other pesticides to avoid or reduce alkaline hydrolysis of certain pesticides.

- * Avoid applications when wind conditions impair thorough coverage.
- * Avoid applications on new transplants and unrooted cuttings.

Notes to User: Understanding Plant Sensitivity

Sensitivity of plants to this product can be influenced by several factors which include: pest and disease pressure, cultivar, plant vigor, environmental conditions (temperature, relative humidity, moisture availability, light intensity, etc.), spray concentration, companion products, spray additives, pH of spray mixtures, delivery volume as well as the timing, number and frequency of applications.

- * Potential for plant injury increases when this product is used under the following conditions:
 - * Plants are stressed, such as under hot ($>90^{\circ}$ F), humid and/or drought conditions.
 - * More than 3 sequential applications are made at 7 day intervals.
 - * The pH of the final spray mixture is lowered below 8.0.
 - * High volume applications cause the spray to collect on the bottom of fruit such as apple, pear, nectarine, orange and grape.
 - * Tender new foliage is present on narrow leaf evergreen trees and shrubs.
 - * When existing insect, mite or disease pressure has already stressed plant foliage or damaged fruit (for example, mite burn on leaves).
- * Application of this product may alter the appearance of the glaucous bloom from spruces and the waxy bloom on grapes. Evaluate the effect of this product alone or in combination with desired companion product(s) on a few test plants prior to full scale applications when sensitivity of plant species or cultivars under local use conditions is unknown.
- * Do not apply to very sensitive plants such as: horse chestnut, Japanese maple, mountain ash, Cherimoya, bleeding heart or sweetpeas.
 The following plants may be sensitive to this product: bald cypress, begonia, chrysanthemum, Crown of Thorns and other Euphorbia, cucumber, delicate ferns, narrow leaf evergreens (especially when stressed or when tender new growth is present), Dieffenbachia, fuschia, gardenia, impatiens, jade plant, lantana, ornamental ivy, palms, poinsettia, redbud, river birch, schefflera, Zebra plant and some succulents. Test first on a few plants prior to broad scale applications when sensitivity under local use conditions is unknown.
- * Flowers of plants including African violet, ageratum, azalea, begonia, camellia, chrysanthemum, dahlia, geranium, gloxinia, impatiens, lily, marigold, orchid, pansy, petunia,

poinsettia bracts, rose, salvia, snapdragon, vinca and zinnia may be injured when sprayed with this product. Safety to blooms should be determined for each individual cultivar of plant to be treated by conducting a small test under local use conditions.

INSECTICIDAL/MITICIDAL AND FUNGICIDAL USES

VEGETABLES, HERBS AND SPICES (Greenhouse and Outdoor)

Vegetables: Asparagus, Brassicas (cole), (such as: bok choy, broccoli, broccoli raab, Brussels sprout, cabbage, cauliflower, Chinese broccoli, Chinese cabbage, collards, kale, kohlrabi, mustard greens, napa cabbage), Bulbs (such as: bulb and green onion, garlic, and leek), Cucurbits (such as: cucumber, melon, pumpkin and summer squash), Fruiting (such as: eggplant, pepper and tomato), Leafy (such as: celery, endive (escarole), lettuce, parsley, spinach and Swiss chard), Legumes (such as: beans, peas and soybeans), Root and tuber (such as: artichoke, beet, carrot, horseradish, potato, radish, rutabaga, shallot, sugar beet and yam), Herbs and spices: (such as: basil, chives, dill, marjoram, and sage), Watercress.

Use Recommendations:

Stand alone rate: Apply a 1-2% v/v solution of this product, unless otherwise noted. Refer to the MIXING AND APPLICATION section of this label for general rate, timing and application information except as noted below.

PEST	RECOMMENDATIONS
Leafminers and green peach aphid	Apply this product only in tank mix combination with a labeled companion insecticide.
Other aphids	To achieve enhanced and residual pest control, use a 1-2% v/v solution of this product in combination with a recommended rate of products such as Thiodan (endosulfan), Phosdrin (mevinphos), or Orthene (acephate).
Whiteflies	Apply a 1-2% v/v solution of this product for stand alone use. To achieve enhanced and residual pest control, use a 1-2% v/v solution of this product in combination with a recommended rate of a product such as Thiodan (endosulfan), or Asana XL (fenvalerate). Lower rates (0.25-1% v/v solution) may be applied in knockdown/suppression of adult whiteflies.

PEST	RECOMMENDATIONS
Thrips, plant bugs, spider mites, broad mite, russet mite and leafhoppers	Refer to the MIXING AND APPLICATION section of this label for information on rates, mixing and application.
Powdery mildew	<p>Cucurbits, Fruiting Vegetables, Herbs and Spices, Leafy Vegetables, Legumes, Root and Tuber Vegetables:</p> <p>For stand alone use, apply a 1-2% v/v solution of this product when the first signs of powdery mildew appear and repeat at 7 to 10 day intervals, or as needed. Schedule a follow-up fungicide application within 7 to 10 days after each application when this product is applied alone.</p> <p>For tank mix use, apply a 1-2% v/v solution of this product with a recommended fungicide to achieve protectant/residual control of powdery mildew.</p> <p>Do not mix with sulfur. Do not use within 3 days of a sulfur application.</p>

Post-harvest Treatment: 40% Insecticidal Soap may be used as a post-harvest treatment to kill aphids, whiteflies, mealybugs, leafhoppers, ants and mites contaminating harvested artichokes, leafy vegetables and cole crops. Treatments may be made by dipping harvested commodities in a solution prior to or during post-harvest processing. Submerge commodity completely for 10 to 90 seconds. A solution of 0.5 to 2% should be used depending on the commodity and the necessary residence time to achieve good control. Commodity should be rinsed afterwards to help ensure complete removal of contaminating insects.

FRUIT AND NUT CROPS

Citrus fruits (such as: Citrus citron, grapefruit, kumquat, lemon, lime, orange, tangelo, and tangerine), Pome fruits (such as: apple, crabapple, pear and quince), Small Fruits and Berries (such as: blackberry, blueberry, boysenberry, cane berries, cranberry, currant, grape, olallieberry, raspberry, and strawberry), Stone Fruits (such as: apricot, cherry, nectarine, peach, plum and prune), and Tree Nuts (such as: almond, chestnut, filbert, pecan, pistachio, and black and English walnut).

11/20

Use Recommendations:

Stand alone rate: Apply a 1-2% v/v solution of this product, unless otherwise noted. Refer to the MIXING AND APPLICATION SECTION of this label for general rate, timing and application information except as noted below.

For all Fruit and Nut Crops: Apply to wet (minimize run off) with an air blast or other appropriate sprayer. Application of excessive water volumes will increase the potential for fruit injury by causing collection of spray on the bottom of fruit, especially when poor drying conditions exist.

Grapes: This product may alter the waxy bloom and or cause marking on the surface of grapes which can affect the quality rating of table grapes at harvest. To reduce potential for fruit injury, do not apply in greater than 75 gallons of water per acre on table grapes after berries are 6-7 mm in diameter. Do not apply this product to Calmeria or Italia varieties of grapes.

Citrus: Precaution - Fruit marking may occur when sooty mold is present.

Pears: Applications of this product are not recommended after the delayed dormant stage on fresh market pear varieties including d'Anjou and Asian pears. Applications after fruit set may cause marking which can reduce market value of the fruit.

Stone Fruits: Concentrate (air blast) applications are recommended with a maximum volume of 100 gallons per acre on smooth skinned fruits, except cherries, and 400 gallons per acre on cherries and peaches on large trees. SPRAY TO WET with no run off! Do not make dilute spray applications on smooth skinned fruit after fruit formation. This product is not recommended for use on yellow skinned nectarine varieties.

Nursery and nonbearing trees can be sprayed to runoff with no more than 3 consecutive applications with 7 day intervals.

PEST	RECOMMENDATIONS
Citrus rust mite	Apply a 1-2% v/v solution of this product. Use of a suitable citrus spray oil in combination with this product applied to wet (minimize run-off) with an air blast or other appropriate sprayer may help improve performance.
European red mite, Pacific spider mite,	Apply a 1-2% v/v solution of this product to control motile stages. To achieve enhanced and residual control, use a

PEST	RECOMMENDATIONS
twospotted spider mite, Willamette mite	1-2 % v/v solution of this product in combination with recommended products such as Vendex or Kelthane.
Green apple aphid	To achieve enhanced and residual control, use a 1-2% v/v solution of this product in combination with recommended products such as Thiodan.
Western grape leafhopper and variegated leafhopper	To achieve enhanced and residual control, use of a 1-2 % v/v solution of this product in combination with recommended products such as Pyrellin or Pyrenone. Scout and make first application to control nymphs during the first generation (first brood) when the majority of nymphs are in the third to fourth instars. This product is effective for late season and preharvest suppression of leafhoppers in wine and raisin grapes.
Pear psylla	Apply a 1-2% v/v solution of this product at delayed dormant to control winterform and newly hatched nymphs. Make follow up applications on processing pears at petal fall and turn down for control of 1st and 2nd generation nymphs before they mature into fourth instars.
Rosy apple aphid	Apply a 1-2% v/v solution of this product. Addition of an appropriate spray oil to this product may help to improve performance. Time sprays to coincide with pre-pink or pink stages of apples.
White apple leafhopper	To achieve enhanced and residual control, use a 1-2% v/v solution of this product in combination with recommended products such as Thiodan. Target 1st generation nymphs before they mature into flyers.
Other aphids, Campyloma, mealybugs, rust mite, pear slug (sawfly larvae) scale crawlers, leafhoppers and whiteflies	Refer to the MIXING AND APPLICATION section of this label for information on rates, mixing and application.
Powdery mildew	Grapes: Complete coverage of grape clusters as well as leaf surfaces is essential for effective control. Rates of 40% Insecticidal Soap below 1% v/v will not be fungicidal against powdery

PEST	RECOMMENDATIONS
	<p>mildew.</p> <p>Stand-alone rate: Apply a 1-2% v/v solution of this product to control powdery mildew spores and hyphae. Initiate sprays at bud break or as appropriate based on local powdery mildew control recommendations. Repeat at 7 to 14 day intervals, or as needed through veraison. Use the shorter intervals under more severe mildew pressure. Schedule a follow-up fungicide application within 7 to 14 days after each application when 40% Insecticidal Soap is used alone. Use this product in a scheduled preventive spray program with recommended fungicides such as Bayleton, Rally, Rubigan and/or sulfur to achieve protectant/residual control of powdery mildew.</p> <p>Tank mix rate: This product may be applied in tank mixes with fungicides such as Bayleton, Rally or Rubigan. Tank mix this product at the rate of 1-2% v/v with labeled rates of companion pesticides.</p> <p>Do not mix with sulfur. Do not use within 3 days of a sulfur application.</p>
Powdery Mildew	<p>Citrus fruit, Pome fruit, Stone fruit, Small fruits and Berries, and Tree nuts: Apply a 1-2% v/v solution of this product to control powdery mildew spores and hyphae.</p> <p>Stand alone rate: Apply a 1-2% v/v solution of this product when the first signs of powdery mildew appear or as appropriate based on local powdery mildew recommendations and repeat at 7 to 14 day intervals, or as needed. Schedule a follow-up fungicide application within 7 to 14 days after each application when this product is applied alone.</p> <p>Tank Mix rate: Apply a 1-2% v/v solution of this product with a recommended fungicide to achieve protectant/residual control of powdery mildew. Do not mix with sulfur. Do not use within 3 days of a sulfur application.</p>

FIELD CROPS

Alfalfa, Canola, Corn, Cotton, Peanut, Soybean, Tobacco and Wheat.

Pests controlled: aphids, caterpillars (in tank mix combination only), exposed thrips, greenbug, fleahoppers, plant bugs (such as Lygus), stink bugs, spider mite and whitefly.

Use recommendations:

Refer to the MIXING AND APPLICATION section of this label for general rate, timing and application information except as noted below.

Stand alone rate:

Use 4 pints of this product per acre when applications are made in 3-25 gallons of water per acre. Use a 2% v/v spray solution of this product when 25 or more gallons of water are applied per acre.

Tank mix rate:

When used in combination with other insecticides, use 0.75 to 4 pints of this product per acre when applied in 3-25 gallons of water per acre. Use a 1-2% v/v solution of this product when greater than 25 gallons of water are applied per acre.

To achieve enhanced and residual control of caterpillars, use this product in combination with recommended insecticides such as Baythroid, Bolstar and Orthene.

To achieve enhanced and residual control of other insects (aphids, thrips, greenbug, fleahoppers, plant bugs, spider mites, whiteflies), use this product in combination with recommended insecticides such as Bidrin, Thiodan, Phaser, Orthene, Asana, Capture or Zephyr.

In situations where thorough coverage of pests is not possible or practical, it is recommended that this product be tank mixed with one of the companion pesticides listed above.

This product may be used in tank mixes with penetrator type adjuvants for application to cotton, peanuts and tobacco only if prior use under local use conditions has demonstrated plant safety.

HOPS, COFFEE, BANANA AND PINEAPPLE

Pests controlled: aphids, leafhoppers, mealybugs, spider mites, plant bugs, scales, exposed thrips and whiteflies.

Use recommendations:

Stand-alone rate: Apply a 1-2% v/v solution of this product,

unless otherwise noted. Refer to the MIXING AND APPLICATION section of this label for general rate, timing and application information except as noted below.

Tank mix rate: To achieve enhanced and residual pest control, use a 1 to 2% v/v solution of this product in combination with a recommended companion product.

Use a 1% v/v rate with most companion pesticides targeted at the same pest(s) as 40% Insecticidal Soap. Lower rates (0.25 - 1.0 % v/v solution) of this product may be used in tank mixes for knockdown/suppression of adult whiteflies.

See Application Guidelines and Notes to User: Understanding Plant Sensitivity for additional comments.

TURF

PEST	RECOMMENDATIONS
Chinch bug, cutworms, fleas, greenbug, grubs, mites, mole cricket and sod webworm	Stand-alone rate: Apply a 1-2% v/v solution of this product, unless otherwise noted. Refer to the MIXING AND APPLICATION section of this label for general rate, timing and application information except as noted below. Tank mix rate: To achieve enhanced and residual pest control, use a 1-2% v/v solution of this product in combination with recommended products such as: Pageant, Dursban, malathion, diazinon or Orthene. For use on mole crickets, irrigate turf prior to application of this product to bring mole crickets to the surface.
Dollar spot	Stand alone rate: Apply a 1-2% v/v solution of this product when the first signs of dollar spot appear and repeat at 7 to 10 day intervals, or as needed. Schedule a follow-up fungicide application within 7 to 10 days after each application when this product is applied alone. Tank mix rate: Apply a 1-2% v/v solution of this product with a recommended companion fungicide to achieve protectant/residual control of dollar spot. See Application Guidelines and Notes to User: Understanding Plant Sensitivity for additional comments.
Powdery mildew	Stand alone rate: Apply a 1.5-2% v/v solution of this product when powdery mildew is first

	observed and repeat every 7-14 days, or as needed.
	Tank mix rate: This product can also be tank mixed with other fungicide products suitable for turf powdery mildew use. Tank mixes with products containing Chlorothalonil should be avoided as they can cause severe phytotoxicity.

ORNAMENTAL LANDSCAPE TREES AND SHRUBS, CHRISTMAS TREES, ROSES,
FLOWERS, BEDDING AND INDOOR PLANTS

Pests controlled: adelgids, ants, aphids, buck moth larvae, earwigs, elm leaf beetle larvae, sawfly larvae, gypsy moth eggs and larvae, Japanese beetle, lace bugs, leafhoppers, mealybugs, rust mite, Phylloxera, spider mites, shore fly, plant bugs, psyllids, scales, tent caterpillar, exposed thrips, whiteflies and powdery mildew.

Use recommendations:

Stand-alone rate: Apply a 1-2% v/v solution of this product, unless otherwise noted. Refer to the MIXING AND APPLICATION section of this label for general rate, timing and application information except as noted below.

Tank mix rate: To achieve enhanced and residual pest control, use a 1 to 2 % v/v solution of this product in combination with a recommended product. Tank mixes with products containing Chlorothalonil should be avoided as they can cause severe phytotoxicity. Lower rates (0.25 to 1.0 % v/v solution) of this product may be used in tank mixes for knockdown/suppression of adult whiteflies.

Note: Unless otherwise noted, apply this product to wet (minimize run off). If wilting occurs a few hours after application, rinse with a clean water spray. Since applications may cause injury to flowers of some plant cultivars, test product on a few flowering plants under local use conditions prior to large scale use.

PEST	RECOMMENDATIONS
Adelgids, psyllids, scales on trees and shrubs	Spray to wet infested plant surface.
Balsam woolly adelgid	Spray trees thoroughly when nymphs are abundant in early spring and/or fall. Make a second application 10 days later.

17/20

PEST	RECOMMENDATIONS
Cooley spruce gall adelgid	Apply a 4% v/v solution to spruce in fall or spring when females begin egg laying. On Douglas fir, control exposed "woolly aphids" in early spring immediately before bud break (April) or in the fall (Sept.-Oct.) after foliage has hardened off.
Hemlock woolly adelgid	Apply this product immediately after detecting an adelgid infestation to avoid the spread of the pest. In regions with heavy infestations and on trees with a history of infestation, a total of four applications made in April/May, June, August/September and October may be necessary. Because it is a contact insecticide, do not use this product as a preventive control measure.
Conifer and pine needle scales	When insects first appear, apply a 1-2% v/v spray to thoroughly wet crawlers.
Tent caterpillar	Apply a 3% v/v solution. Spray directly on young larvae when congregated on outside of tent or dismantle tents and spray to thoroughly wet larvae.
Spider mites	Wet underside of leaves and needle sheaths. Wait 7-10 days to allow viable eggs to hatch and make a second application before mites reach egg laying maturity. For residual control, apply in a tank mix combination with a labeled companion product such as Avid.
Earwigs	Spray directly on insects after disturbing their hiding place.
Leafminers (Dipteran)	Apply in tank mix combination with a labeled companion insecticide such as Avid which has residual activity.
Whiteflies	Scout plants regularly and apply a 1-2% v/v solution when pests first appear. Make a second application 7 days later to target newly hatched nymphs. Make additional applications at weekly intervals, but avoid more than three consecutive weekly applications. Do not apply to poinsettia bracts. To achieve enhanced and residual pest control, use a 1 to 2% v/v solution of this product in combination with recommended products such as: Avid, Dursban, Mavrik Aquaflow, Pounce, Talstar or Tempo. Lower rates (0.25 - 1% v/v

.....

PEST	RECOMMENDATIONS
	solution) of this product may be used in tank mixes for knockdown/suppression of adult whiteflies.
Gypsy moth	To suppress gypsy moth populations, apply a 3% v/v solution directly to the larvae.
Blossom thrips on African violets	Spray to contact thrips on blooms.
Euonymous scale	Thoroughly wet crawlers with a 2% solution. Delayed dormant applications of this product (1% v/v solution) plus summer oil (1% v/v solution) will also be effective.
Spruce spider mite on conifers	Apply 1-2% solution of this product to thoroughly wet infested needles. Repeat application after 7 days if needed.
Powdery mildew	<p>Roses: Apply a 1-2% solution of this product to control powdery mildew spores and hyphae. Initiate sprays when first signs of powdery mildew appear and repeat at 5 to 10 day intervals, or as needed. Alternate applications of this product with other recommended fungicides to avoid making more than three successive applications of this product at intervals of 5 days or less. Some rose cultivars are susceptible to flower damage from this product. Evaluate the effect of this product alone or in combination with desired companion product(s) on a few test plants prior to full scale applications when sensitivity of plant species or cultivars under local use conditions is unknown. Overall, there is more risk of phytotoxic effects on flowers under cool or low light conditions when roses are growing slowly.</p> <p>Roses may be treated with sublimated sulfur using sulfur-heating pots or similar devices before or after treatment with 40% Insecticidal Soap. To minimize the potential for plant injury, allow 24 hours to elapse between 40% Insecticidal Soap and sublimated sulfur applications.</p> <p>Do not mix with sulfur. Do not use within 3 days</p>

PEST	RECOMMENDATIONS
	of a sulfur application.
Powdery mildew	<p>Ornamental landscape trees and shrubs, Christmas trees, flowers, bedding and indoor plants:</p> <p>Stand alone rate: Apply a 1-2% v/v solution of this product when the first signs of powdery mildew appear and repeat at 7 to 10 day intervals, or as needed. Schedule a follow-up fungicide application within 7 to 10 days after each application when this product is applied alone.</p> <p>Tank mix rate: Apply a 1-2% v/v solution of this product with a recommended fungicide to achieve protectant/residual control of powdery mildew.</p> <p>Do not mix with sulfur. Do not use within 3 days of a sulfur application.</p>

DEER AND RABBIT REPELLENT

Deer and rabbits	<p>Suppression of browsing: This product, when used at label rates, may reduce or prevent browsing by deer and rabbits. Make applications to fruit, stems or foliage of registered crops before heavy feeding starts. Treat at least bi-weekly or following heavy rainfall. Observe all other cautions on this label. Suppression may not be achieved if deer or rabbit populations are high, feeding patterns are well established, or alternate food is scarce.</p>
------------------	---

CONDITIONS OF SALE

MICRO FLO WARRANTS THAT THIS PRODUCT CONFORMS TO THE CHEMICAL DESCRIPTION ON THE LABEL THEREOF AND IS REASONABLY FIT FOR THE PURPOSE STATED ON SUCH LABEL ONLY WHEN USED IN ACCORDANCE WITH THE DIRECTIONS FOR USE. IT IS IMPOSSIBLE TO ELIMINATE ALL RISKS INHERENTLY ASSOCIATED WITH THE USE OF THIS PRODUCT. CROP INJURY, INEFFECTIVENESS, OR OTHER UNINTENDED CONSEQUENCES MAY RESULT BECAUSE OF SUCH FACTORS AS WEATHER CONDITIONS, PRESENCE OF OTHER MATERIALS, OR THE MANNER OF USE OR APPLICATION, ALL OF WHICH ARE BEYOND THE CONTROL OF MICRO FLO. IN NO CASE SHALL MICRO FLO BE LIABLE FOR THE CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES

RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. ALL SUCH RISKS SHALL BE ASSUMED BY THE BUYER.

EXCEPT AS EXPRESSLY PROVIDED HEREIN, MICRO FLO MAKES NO WARRANTIES, GUARANTEES, OR REPRESENTATIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED, OR BY USAGE OF TRADE, STATUTORY OR OTHERWISE, WITH REGARD TO THE PRODUCT SOLD, INCLUDING BUT NOT LIMITED TO, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, USE OR ELIGIBILITY OF THE PRODUCT FOR ANY PARTICULAR TRADE USAGE.

Agri-mek, Avid and Zephyr are registered trademarks of Merck & Co., Inc.

Dursban, Lorsban, Pageant, and Rubigan are registered trademarks of DowElanco.

Pipron is a registered trademark of SePRO Corp.

Orthene is a registered trademark of Valent U.S.A. Corp.

Aliette and Sevin are registered trademarks of Rhone-Poulenc Ag Co.

Bidrin is a registered trademark of Amvac Chemical Corp.

Lannate, Vendex and Asana XL are registered trademarks of DuPont Agricultural Products.

Ambush is a registered trademark of ZENECA, Inc.

Capture, Pounce, Thiodan and Talstar are registered trademarks of FMC Corp.

Margosan-O is a registered trademark of Grace Sierra Crop Protection Co.

Mavrik Aquaflo is a registered trademark of Sandoz Agro Ltd.

Apollo SC, Carzol, Ovasyn and Phaser are registered trademarks of AgrEvo USA Co.

Apollo is a registered trademark of Hoechst Schering AgrEvo GmbH.

Pyrenone is a registered trademark of AgrEvo Environmental Health, Inc.

Pyrellin is a registered trademark of Webb Wright Corp.

Guthion, Monitor, Bayleton, Baythroid, Bolster and Tempo are registered trademarks Bayer.

Azatin is a registered trademark of AgriDyne Technologies, Inc.

Eagle and Rally are registered trademarks of Rohm and Haas Company.

Savey is a registered trademark of Gowan Company.