

34704-447

9-2-2003

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460



OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

SEP 2 2003

Ms. Glenda Haage  
Platte Chemical Co.  
7251 W. 4<sup>th</sup> Street  
PO Box 667  
Greely, CO 80632-0667

Dear Ms. Haage:

Subject: Revised Labeling and Confidential Statement of Formula  
Carbaryl 4L  
EPA Registration No. 34704-447  
Your Submission Dated January 15, 2003

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable provided you make the following changes before you release the product for shipment bearing the amended labeling:

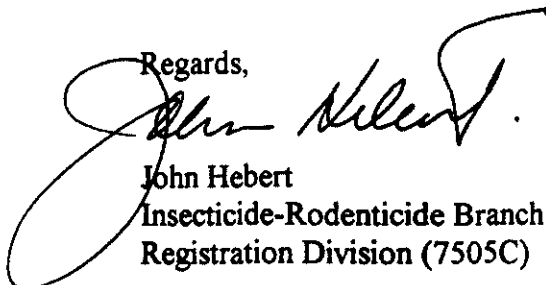
1. Revise the Precautionary Statements as follows: "Harmful if swallowed, inhaled or absorbed through the skin. Avoid breathing of spray mist. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse."  
  
Move the sentence, "Do not use this product in food areas...where food is prepared or processed" to the Directions for Use.
2. Under Environmental Hazards delete the phrase, "For terrestrial uses." Your product only has terrestrial uses.
3. In our July 15, 2002 letter we requested the deletion of certain uses from your labeling because they were not found on your technical source's label. Some of these uses still appear on the subject label. We will allow these uses to remain on the label for now. However, we will readdress this subject during carbaryl product reregistration.

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The confidential statement of formula for the basic formulation dated January 15, 2003 is acceptable. This CSF has been added to your file and supercedes all pervious versions.

Submit two copies of your final printed labeling before you release the product for shipment. A stamped copy is enclosed for your records. If you have any questions, please contact me at (703) 308-6249 or [hebert.john@epa.gov](mailto:hebert.john@epa.gov).

Regards,

A handwritten signature in black ink, appearing to read "John Hebert", with a large, stylized flourish extending from the end of the signature.

John Hebert  
Insecticide-Rodenticide Branch  
Registration Division (7505C)

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# CARBARYL 4L

## Insecticide

For Agricultural And Commercial Use Only  
N-Methyl Carbamate Insecticide

ACTIVE INGREDIENT:  
Carbaryl (1-naphthyl N-methylcarbamate) ..... 43.0%  
INERT INGREDIENTS ..... 57.0%  
Total 100.0%

**KEEP OUT OF REACH OF CHILDREN**  
**CAUTION**

EPA REG NO. 34704-447

EPA EST. NO. \_\_\_\_\_

NET CONTENTS \_\_\_\_\_ GALS. ( \_\_\_\_\_ KG)

BT

EXP01Y03

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

**CAUTION**

**MAY BE HARMFUL IF SWALLOWED.** Avoid breathing of spray mist. Do not take internally. Avoid contact with skin, eyes and clothing. Do not use this product in food areas of commercial food-handling establishments, restaurants or other places where food is prepared or processed.

**Personal Protective Equipment (PPE):**

Applicators and other handlers must wear: long-sleeved shirt and long pants, waterproof gloves and shoes plus socks.

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

**Engineering Controls Statement:**

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets with requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.340(d)(4-6)), the handler PPE requirements may be reduced or modified as specified in the WPS.

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

ACCEPTED  
with COMMENTS  
In EPA Letter Dated:

SEP 2 2003  
Under the Federal Insecticide,  
Fungicide, and Rodenticide Act,  
as amended, for the pesticide  
registered under EPA Reg. No.  
34704-447

**FIRST AID**

If swallowed:	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have a person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
If in eyes:	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-30 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
If on skin or clothing:	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
If inhaled:	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>

FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-800-228-6034, EXT. 136, OR CALL COLLECT, 612-651-6166, EXT. 136. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**NOTE FOR PHYSICIAN:** Carbaryl contains an N-methyl carbamate that inhibits cholinesterase. Atropine is antidotal.

**ENVIRONMENTAL HAZARDS**

This product is extremely toxic to aquatic and estuarine invertebrates. For terrestrial uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Discharge from rice fields may kill aquatic and estuarine invertebrates. Do not contaminate water by cleaning equipment or disposing of wash waters.

**BEE CAUTION**

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops and weeds. Do not apply this product or allow it to drift to blooming crops or weeds 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.

**AGRICULTURAL USE REQUIREMENTS**

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

**Agricultural Use Requirements cont. d.:**

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.  
PPE required for 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, waterproof gloves and 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 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.

The area being treated must be vacated by unprotected persons.

Keep unprotected persons out of treated areas until sprays have dried.

**STORAGE AND DISPOSAL**

**PROHIBITIONS:** Do not contaminate water, food, or feed by storage or disposal. Open dumping is prohibited. Do not reuse empty container. Do not store under conditions which might adversely affect the container or its ability to function properly.

**STORAGE:** Store in a safe manner. Store in original container only. Store in cool, dry place. Keep container tightly closed when not in use. Reduce stacking height where local conditions can affect package strength. Personnel should use clothing and equipment consistent with good pesticide handling.

**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: METAL:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities; **PLASTIC:** 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.

**GENERAL INFORMATION**

This product is a suspension of a microfine carbaryl insecticide in an aqueous medium. It is dispersible in water and may be applied by ground or air.

**PREPARATION OF SPRAY**

Before using, agitate, stir or recirculate product in container to assure product uniformity. Be certain mix tanks and entire spray system are clean and free from foreign matter. Flush with clean water. Fill tank  $\frac{1}{2}$  to  $\frac{3}{4}$  with desired amount of water. Begin agitating tank and slowly add the required amount of this product. Add the remaining volume of water. Continuously agitate spray during mixing and application to assure a uniform suspension. Do not store spray mix for prolonged periods. Prepare only as much spray mix as can be applied on the day of mixing.

**PRODUCT COMPATIBILITY**

When diluted with an equal volume of water, this product may be tank mixed with a wide range of pesticides. If compatibility with another product and the resulting crop response are unknown, the combination should be tested on a small scale. Do not mix this product with diesel fuel, kerosene, fuel oil or aromatic solvents.

When tank mixing, first add this product to at least an equal volume of water, mix thoroughly, and then add combination products. Do not apply this product in a tank mix unless previous experience indicates that the mixture is effective and will not result in application problems, excessive residues, or plant injury. Observe all precautions and limitations on labeling of all products used in mixtures.

This product is unstable under highly alkaline conditions and is not effective if used with alkaline materials such as Bordeaux, lime-sulfur and casein-lime sprayers.

**APPLICATION**

For all applications, use sufficient spray volume to obtain thorough and uniform coverage. Calibrate spray equipment to deliver the required volume. Use 50 mesh strainers in spray system and 25 mesh silted strainers behind nozzles.

To clean spray system after use, drain and flush with a water and detergent mixture. Rinse thoroughly with clean water. Refer to the storage and disposal section for disposal instructions.

**Note:** Staining may occur on certain surfaces such as stucco, brick, cinder block, and wood. Spray deposits on painted or stained surfaces or finishes (i.e., cars, houses, trailers, boats, etc.) should be immediately removed by washing to prevent discoloration. Avoid applications to surfaces where visible spray residues are objectionable.

**Ground Application**

Apply in sufficient volume for adequate coverage on all crops and sites. To prepare small volumes of spray mixture, use  $\frac{1}{2}$  fl. oz. (approximately 2 teaspoons) of this product in an adequate amount of water and apply to 500sq.ft. where rates of 1 quart per acre are indicated.

**Aerial Application**

For adequate distribution, use at least 10 gallons of spray mixture per acre for application for trees and orchard crops or at least 2 gallons of spray mixture per acre for application to other crops.

**Sprinkler Irrigation Items**

Apply this product through sprinkler irrigation systems including center pivot and solid set. Do not apply this product through any other type of irrigation system. General Precautions for Applications through Sprinkler Irrigation Systems: Maintain continuous agitation in mix tank during mixing and application to assure a uniform suspension.

Greater accuracy in calibration and distribution will be achieved by injecting a larger volume of more dilute solution per unit time.

The system must contain a functional check valve, vacuum relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow. The pesticide injection pipeline must contain a functional, automatic quick-closing check valve to prevent the flow of fluid back toward the injection pump. The pesticide injection pipeline must also contain interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shutdown. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. The irrigation line or water pump must include a functional pressure switch, which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected. Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being filled with a system interlock. Do not apply when wind speed favors drift beyond the area intended for treatment. Do not apply when wind speed favors drift, when system connection or fittings leak, when nozzles do not provide uniform distribution when lines containing the product must be dismantled and drained.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop may result from nonuniform distribution treated water.

Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation water. A person knowledgeable of the chemigation system and responsible for its operation shall shut the system down and make necessary adjustments should the need arise.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to public water system unless the label-prescribed safety devices for public water supplies are in place.

**Resistant Species**

All references to armyworm on the crops listed below refer to the species, *Pseudaletia unipuncta*. Except where indicated otherwise, this product is not registered for the control of other armyworm species. Regional differences have been noted in the susceptibility of certain strains of fall armyworm, diamondback moth, Colorado potato beetle and Southern green stink bug to carbaryl. If local experience indicates inadequate control, use an alternative pesticide.

**CAUTIONS AND RESTRICTIONS**

Carbaryl 4L insecticide is a suspension of microfine brand carbaryl insecticide in an aqueous medium. It readily disperses in water to form a spray which may be applied by air or ground.

**PLANT RESPONSE PRECAUTIONS**

Application to wet foliage or during periods of high humidity may cause injury to tender foliage. Do not use on Boston ivy, Virginia creeper and maidenhair fern as injury may result. Carbaryl may also injure Virginia and sand pines. The use of adjuvants may increase the potential for crop injury to sensitive crops.

**PREHARVEST AND GRAZING RESTRICTIONS AND LIMITATIONS**

Tolerances established under the Federal Food, Drug and Cosmetic Act permit the sale of labeled crops bearing probable carbaryl residues when this product is used in accordance with the label directions. If used as directed, treated forage may be grazed or used as feed for dairy and meat animals without causing illegal residues in meat or milk. Do not apply at greater rates or at more frequent intervals than stated on the label. To do so may result in illegal residues in crops, meat, and milk.

Do not use reclaimed irrigation water from crops treated with carbaryl or crops for which carbaryl tolerances are not established.

Do not plant rotational food and feed crops not listed on this or other carbaryl labels in carbaryl treated soil.

**FRUIT, VEGETABLE, GRAIN CROPS, & TOBACCO**

Begin application when insect populations reach recognized economic threshold levels. Consult the Cooperative Extension Service, or other qualified authorities to determine appropriate threshold levels for treatment and specific use information in your area. Where a dosage range is indicated, use the lower rate on light to moderate infestations, young plants and early instars and use the higher rate on heavy infestations, mature plants, advanced instars and adults. Thorough and uniform spray coverage is essential for effective control.

**CAR 7YL 4L**  
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CROP	INSECT	QTS. OF THIS PRODUCT/ ACRE	SPECIFIC DIRECTIONS
Asparagus	Asparagus beetle, cutworms, Apache cicada	1 to 2	Repeat applications as necessary up to a total of 3 times prior to harvest or a total of 6 times per crop but not more often than once every 7 days.  For cutworm control, this product is most effective against species which feed on the upper portions of the plant.
		2 to 4	Application to ferns or brush growth following harvest of spears: Repeat applications as necessary but not more often than every 7 days. Do not make more than a total of 5 applications per year to spears and ferns combined.

- Do not apply more than a total of 6 quarts per acre before harvest of spears.
- Do not apply more than a total of 10 quarts per acre per year.
- Do not apply within 1 day of harvest.

Broccoli, Brussels Sprouts, Cauliflower, Cabbage, Chinese Cabbage, Collards, Kale, Kohlrabi, Mustard Greens	Flies beetles, Harlequin bug, Leafhoppers	X to 1	Repeat applications as needed up to a total of 4 times but not more often than once every 7 days.
	Armyworm, Apter leafhopper, Corn earworm, Diamond-back moth, Fall armyworm, Imported cabbageworm, Lygus bug, Spittlebug, Stink bug, Tarnished plant bug	1 to 2	Do not apply more than a total of 6 quarts per acre per crop.

- Do not apply more than a total of 6 quarts per acre per crop.
- For Chinese Cabbage, Collards, Kale, and Mustard Greens, do not apply within 14 days of harvest.
- For Broccoli, Brussels Sprouts, Cabbage, Cauliflower, and Kohlrabi, do not apply within 3 days of harvest.

Carrots, Parsnips, Garden Beets, Horseradish, Rutabaga, Turnip, Sweet Potato	Flies beetles, Leaf hoppers	X to 1	Repeat applications as necessary up to a total of 4 times but not more often than once every 7 days.
	Armyworm, Apter leafhopper, Colorado potato beetle, Corn earworm, Cutworm, European corn borer, Fall armyworm, Lace bug, Lygus bug, Spittlebug, Stink bug, Tarnished plant bug	1 to 2	For cutworm control, this product is most effective against species which feed on the upper portions of the plant.

- Do not apply more than a total of 6 quarts per acre per crop.
- Do not apply within 7 days of harvest.

Cucumber, Melon, Pumpkin, Squash	Flies beetles, Harlequin bug, Leafhoppers	X to 1	Repeat applications as necessary up to a total of 6 times but not more often than once every 7 days.
	Cucumber beetle, Flies beetles, Leafhoppers, Squash bug	1	For optimum control of squash bugs, apply sufficient spray volume for thorough coverage and time sprays for early morning or late afternoon.

- Do not apply more than a total of 6 quarts per acre per crop.
- Observe plant response precautions.
- Do not apply within 3 days of harvest.

Celery, Dandelion, Endive, Lettuce (head and leaf), Parsley, Spinach, Swiss Chard	Flies beetles, Harlequin bug, Leafhoppers	X to 1	Repeat applications as necessary up to a total of 6 times but not more often than once every 7 days.
	Armyworm, Apter leafhopper, Corn earworm, Fall armyworm, Imported cabbageworm, Lygus bug, Spittle bug, Stink bug, Tarnished plant bug	1 to 2	

- Do not apply more than a total of 6 quarts per acre per crop.
- Do not apply within 14 days of harvest.

CROP	INSECT	QTS. OF THIS PRODUCT/ ACRE	SPECIFIC DIRECTIONS
Legumes Vegetables: Soybeans, Fresh and Dried Beans (including snap, navy and kidney) Fresh and Dried Peas, Lentils, Cowpeas, Southern Peas	Bean leaf beetle, Star beetle, Cucumber beetle, Green cloverworm, Japanese beetle, Mexican bean beetle, Velvetbean caterpillar	X to 1	Repeat applications as necessary up to a total of 4 times but not more often than once every 7 days.  For cutworm control, this product is most effective against species which feed on the upper portions of the plant.
	Corn earworm	X to 1½	Use lower rates for light to moderate populations and eroder insects and provide maximum survival of beneficial insects and spiders. Use the higher rates for heavy populations and larger insects.
Do not use on lentils in California	Adults caterpillar, Colorado potato beetle, Flea beetle, Leafhoppers, Three cornered alfalfa hopper, Thrips, Western bean cutworm	1	
	Armyworm, Cutworm, European corn borer, Fall armyworm, Stink bug, Tarnished plant bug, Yellowjacket	1 to 1½	
	Adults leaper (suppressor), Cowpea cutworm (suppressor), Painted lady (Thistle caterpillar), Post leaf weevil, Post weevil, Saltmarsh caterpillar, Woollybean caterpillar, Yellow-striped armyworm	1½	
	Cutworms only: Corn earworm (suppressor), Lima bean podborer (suppressor), Lygus bug (suppressor) stink bug (suppressor)	1½	

- Do not apply more than a total of 6 quarts per acre per crop.
- Do not apply a combination of this product and 2,4-DB herbicides to soybeans as crop injury may result.
- Observe plant response precautions.
- Do not apply within 14 days of grazing or harvest for forage or within 3 days of harvest of fresh beans or peas or within 21 days of harvest of dried beans or peas, corn, or hay.

Olives	Scale insects (olive scale, black scale)	5 to 7½	Up to 2 applications per crop may be made but not more often than once every 14 days.
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- Do not apply more than a total of 15 quarts per acre per crop.
- Do not apply within 14 days of harvest.

Onion, Eggplant, Pepper	Colorado potato beetle, European cornborer, Fall armyworm, Lace bug, Stink bug, Tarnished plant bug, Thrips (suppressor), Tomato fruit worm, Tomato hornworm, Tomato pinworm	1 to 2	Repeat applications as necessary up to a total of 4 times but not more often than once every 7 days.  Thorough coverage is essential to effectively suppress stink bugs.  When disease resistance is suspected, monitor fields following application and control if resistance occurs but not more often than once every 7 days.
	Flies beetles, Leafhoppers	X to 1	
	Cutworms	2	For cutworm control, this product is most effective against species which feed on the upper portions of the plant.

- Do not apply more than a total of 6 quarts per crop.
- Do not apply within 3 days of harvest.

Field corn, Popcorn	Armyworm, Chinch bug, Corn earworm, Corn rootworm adults, European corn borer, Fall armyworm, Flea beetle, Japanese beetle, Sap beetle, Southern corn borer, Leafhopper	1 to 2	<b>CAUTION: BEE CAUTION.</b> Repeat applications as needed up to a total of 4 times but not more often than once every 14 days.  Optimum timing and good coverage are essential for effective control.
	European corn borer	1½ to 2	For optimum chinch bug control, use ground equipment to apply at least 20 gallons of water per acre and direct spray toward stalk to provide thorough coverage.
	Cutworms, Western bean cutworm	2	For optimum European corn borer control, do not apply in less than 3 gallons of water per acre by air and 15 gallons of water by ground.  For western bean cutworm, treat when infestation averages 10% and at 80% to 100% insect emergence. Treatment after 100% silk emergence will reduce effectiveness.  For optimum cutworm control, apply in a 12-inch band, over the row.

**CARE YL 4L**  
EPA REG. NO. 34704-447

CROP	INSECT	QTS. OF THIS PRODUCT/ACRE	SPECIFIC DIRECTIONS
Field corn, Soybean ext. 4:			using sufficient volume of water to obtain thorough coverage. For broadcast application, use at least 20 gallons by ground or 5 gallons by air per acre.  For cutworm control, this product is most effective against species which feed on the upper portions of the plant.
<ul style="list-style-type: none"> <li>Do not apply more than a total of 8 quarts per acre per crop.</li> <li>Do not apply within 45 days of harvest of grain and fodder or within 14 days of harvest or grazing of hogs or sows.</li> </ul>			
Peanut	Armyworm	1 to 1½	Up to 2 applications per crop may be made but not more often than once in every 14 days.
<ul style="list-style-type: none"> <li>Do not use in California.</li> <li>Do not apply more than a total of 3 quarts per acre per crop.</li> <li>Do not apply within 42 days of harvest for seed or forage.</li> </ul>			
Green soybeans	Armyworms, Cutworms, Corn earworm, Fall armyworm, Stink bugs, Webworms	1 to 2	Repeat applications as necessary up to a total of 4 times but not more often than once every 7 days.
	Southern corn borer	1½	Direct spray into forming heads for optimum control of insects attacking heads.
	Cutworms	2	For optimum chinch bug control, use high gallonage ground application at the base of plants.  For cutworm control, this product is most effective against species which feed on the upper portions of the plant.
<ul style="list-style-type: none"> <li>Do not apply more than a total of 8 quarts per acre per crop.</li> <li>Do not apply within 21 days of harvest for grain or fodder or within 14 days of harvest or grazing of hogs or sows.</li> </ul>			
Peanut	Beet beetles, Mexican bean beetle	¾ to 1	Repeat applications as necessary up to a total of 5 times but not more often than once every 7 days.
	Alysiid caterpillar, Bean leaf beetle, Cucumber beetle, Green downy mildew, Japanese beetle, Leafhoppers, Red-necked peanut worm, Three corned alysiid hopper, Thrips, Velvet bean caterpillar	1	For optimum control of thrips, use directed or banded spray with halber cone spray nozzles. Ensure adequate coverage for the underside of leaves.
	Armyworms, Corn earworm, Fall armyworm, Stink bugs, Webworms	1 to 1½	For cutworm control, this product is most effective against species which feed on the upper portions of the plant.
	Whitestringed beetle adults, Cutworms	2	
<ul style="list-style-type: none"> <li>Do not apply more than a total of 8 quarts per acre per crop.</li> <li>Observe plant response procedures.</li> <li>Do not spray within 14 days of harvest.</li> </ul>			
Rice	Armyworm, Cutworm, Leafhoppers, Stink bugs	1 to 1½	Up to 2 applications per crop may be made but not more often than once every 7 days.
	Tadpole shrimp	1½	California only: For optimum tadpole shrimp control, apply to water when post first signers.
<ul style="list-style-type: none"> <li>Do not apply more than a total of 4 quarts per acre per crop.</li> <li>CAUTION: May kill shrimp, crabs and oysters.</li> <li>Do not apply preplant herbicides within 15 days before or after application of this product or plant injury will result.</li> <li>Do not spray within 14 days of harvest for grain or straw.</li> </ul>			
Small Fruits and Berries: Cranberries, Blueberries, Raspberries, Grapes, Strawberries	European fruit leucostem, European raspberry aphid, Pine beetles, Grape leaf folder, Grape leaf miner, Japanese beetle, Leafhoppers, Leafrollers, Meadow spittlebug, Omnivorous leafhopper, Rose chador, Snowy tree cricket, Strawberry bud weevil, Strawberry clipper, Strawberry fruitworm, Strawberry leafroller, Strawberry weevil, Western grape leaf skeletonizer, Western yellowstriped armyworm	1 to 2	<b>OBSERVE BEE CAUTION</b>  Repeat applications as necessary up to a total of 5 times but not more often than once every 7 days.  For cutworm control, this product is most effective against species which feed on the upper portions of the plant.  In grapes for grape leaf folder control, apply below leaf brood larvae emergence from rolls.  In grapes, do not concentrate spray on the bunch or visible residues may result.
	Blueberry maggot, Cherry fruitworm, Cranberry fruitworm,	1½ to 2	
			For optimum European cutworm control, do not apply in less than 3 gallons of water per acre by air and 15 gallons of water by ground.  For western bean cutworm, treat when infestation average 10% and at 50% to 100% larval emergence. Treatment after 100% silk emergence will reduce effectiveness.  For optimum cutworm control, apply in a 12-inch band, over the row, using sufficient volume of water to obtain thorough coverage.  For broadcast application, use at least 20 gallons by ground or 5 gallons by air per acre.  For cutworm control, this product is most effective against species which feed on the upper portions of the plant.
			For optimum chinch bug control, use ground equipment to apply at least 20 gallons of water per acre and direct spray toward bank to provide thorough coverage.

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CROP	INSECT	QTS. OF THIS PRODUCT/ACRE	SPECIFIC DIRECTIONS
Small Fruits and Berries: Cranberries, Blueberries, Raspberries, Grapes, Strawberries	Cranberry fruitworm, Cranberry leaf girdler, Elm sawworm, Gypsy moth, Sparganothis worm, Tarnished plant bug	2	
	Eight-spotted forester, Cutworms, Grape berry moth, June beetles, Omnivorous leafroller, Orange tortrix, Raspberry fruitworm, Raspberry sawfly, Red-banded leafroller, Redbreast caterpillar		
<ul style="list-style-type: none"> <li>Do not apply more than a total of 10 quarts per acre per crop.</li> <li>CAUTION: Use in cranberries may kill shrimp and crabs. Do not use in areas where there are important resources.</li> <li>Carbaryl may injure Early Dawn and Sunrise varieties of strawberries.</li> <li>Do not spray within 7 days of harvest.</li> </ul>			
Sugar beets	Armyworm, Beet leaf beetle, Fall armyworm, Flea beetles, Leaf hoppers, Webworms	1 to 1½	Repeat applications as necessary up to a total of 2 times but not more often than once every 14 days.
	Cutworms	1½	For cutworm control, this product is most effective against species which feed on the upper portions of the plant.
<ul style="list-style-type: none"> <li>Do not apply more than a total of 3 quarts per acre per crop.</li> <li>Do not apply within 28 days of harvest for roots or forage.</li> </ul>			
Sulfur	Bean weevil, Burrowing beetle, Cutworms, Armyworm, Fall armyworm, Sunflower moth	1 to 1½	Up to 2 applications may be made but not more often than once every 7 days.
		1½	For cutworm control, this product is most effective against species which feed on the upper portions of the plant.
<ul style="list-style-type: none"> <li>Do not apply more than a total of 3 quarts per acre per crop.</li> <li>Do not spray within 30 days of emergence or harvest for forage or within 60 days of harvest for seed.</li> </ul>			
Sweet Corn	Armyworm, Cutworm, Corn earworm, Corn rootworm adults, Fall armyworm, Flea beetles, Japanese beetle, Sap beetle, Southern corn borer, Leafhoppers	1 to 2	<b>OBSERVE BEE CAUTION</b> Repeat applications as necessary up to a total of 5 times but not more often than once every 3 days.  Optimum timing and good coverage are essential for effective control.
	European corn borer	1½ to 2	For insects attacking silks and ears, insecticide sprays should be applied starting when first silks appear and continuing until silks begin to dry. During silking, the minimum retreatment interval (5 days) may not provide adequate levels of protection under conditions of rapid growth or severe pest pressure. The use of an alternative product should be considered in conjunction with this product.
	Western bean cutworm, Cutworms	2	For optimum chinch bug control, use ground equipment to apply at least 20 gallons of water per acre and direct spray toward bank to provide thorough coverage.
			For optimum European cutworm control, do not apply in less than 3 gallons of water per acre by air and 15 gallons of water by ground.  For western bean cutworm, treat when infestation average 10% and at 50% to 100% larval emergence. Treatment after 100% silk emergence will reduce effectiveness.  For optimum cutworm control, apply in a 12-inch band, over the row, using sufficient volume of water to obtain thorough coverage.  For broadcast application, use at least 20 gallons by ground or 5 gallons by air per acre.  For cutworm control, this product is most effective against species which feed on the upper portions of the plant.
<ul style="list-style-type: none"> <li>Do not apply more than a total of 16 quarts per acre per crop.</li> <li>Do not apply within 2 days of harvest of ears, within 14 days of harvest or grazing of hogs, or within 45 days of harvest of fodder.</li> </ul>			
Sweet potatoes	Corn earworm, Cucumber beetles, Flea beetles, Sweet potato hornworm, Sweet potato weevil, White-striped beetle, Tortoise beetles	1 to 2	Preplant dip for control of sweet potato weevil. Just prior to planting, dip sweet potato cuttings in a suspension containing 2 gallons of this product in 100 gallons of water (2.5 fluid ounces per gallon of water).
	Yellowstriped armyworm	2	For faller weevils, repeat applications as necessary up to a total of 5 times but not more often than once every 7 days.
<ul style="list-style-type: none"> <li>Do not apply more than a total of 8 quarts per acre per crop with in-season sprays.</li> <li>Do not apply more than a total of 1.2 quarts per acre as a preplant dip treatment.</li> <li>Do not apply within 7 days of harvest.</li> </ul>			

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CROP	INSECT	QTS. OF THIS PRODUCT/ACRE	SPECIFIC DIRECTIONS
Tobacco	Grasshopper, Flea beetle, Tobacco flea beetle, Hornworm, Japanese beetle, June beetle, Soddy	1 to 2	Repeat treatments as necessary up to a total of 4 times per crop but not more often than once every 7 days.  Use lower rate on young plants (up to three heights). Use at least 10 gallons of prepared spray per acre. Begin treatment when insects are small.

- Do not apply more than a total of 5 quarts per acre per crop.
- Observe plant response precautions.
- Tobacco may be harvested on the day of treatment.

CROP	INSECT	QTS. OF THIS PRODUCT/ACRE	SPECIFIC DIRECTIONS
Wheat, Proso Millet	Flour beetle, Cereal leaf beetle	1 to 3	Up to 2 applications per crop may be made but not more often than once every 14 days.
Do not use in California	Armyworm, Fall armyworm	1 to 1½	Application is effective against eggs, larvae, and adults of the cereal leaf beetle.  Application for armyworm control should be made when armyworms are actively feeding on the upper foliage and night temperatures are not expected to drop below 65°F. If applying by air to lush growth, use a minimum spray volume of 8 gallons per acre in suitable conditions.

- Do not apply more than a total of 3 quarts per acre per crop.
- Do not apply within 21 days of harvest for grain or straw or within 7 days of harvest or grazing of horses.

**TREE FRUIT AND NUT CROPS**

For all tree fruit and nut crops, apply in sufficient volume for adequate coverage. This will vary depending on the pest and its severity, the tree conditions, size, density, and other factors.

CROP	QTS. OF THIS PRODUCT PER ACRE	SPECIFIC DIRECTIONS
APPLES ONLY For Fruit Thinning	1 to 3	Apply 1 to 3 quarts per acre. Use higher rates on difficult to thin varieties and lower rates on easy to thin varieties.  Apply to apples between 80% petal fall and up to 1½ inch fruit size. Use sufficient water volume to ensure thorough coverage. Avoid spraying to runoff. Direct spray volume to upper ½ of tree canopy and reduce spray coverage to lower ½ of tree canopy or possible over-thinning may occur. Tree age, variety, nutrition, previous crop, pruning, bloom, and degree of nut influence fruit thinning results. Exercise caution to avoid possible over thinning. Avoid application when temperatures exceed 85°F. Consult with your County Extension Service or other experts for advice on the proper use of this product.

- Do not apply more than a total of 15 quarts per acre per crop.
- Do not make more than a total of 8 applications per crop.
- Do not apply within 3 days of harvest.

**Notes:** 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 it to drift to blooming trees or weeds if bees are visiting the treatment area. Applications must be timed to coincide with periods of minimum bee activity, between late evening and midnight. If weeds (particularly dandelions) are in bloom, mow the cover crop on the orchard floor and before prior to the application to remove weed blossoms and reduce bee foraging. Remove all bee hives from the orchard area to be treated prior to the application. Notify beekeepers and surrounding orchardists of planned applications 24-48 hours in advance. Dandelions on the orchard floor are a main attractant to bees during and shortly after the apple blossoming period. To control dandelions and other broadleaf weeds, apply a labeled 2,4-D in the fall after apple harvest or in the spring prior to bloom. Refer to restrictions pertaining to 2,4-D applications.

CROP	INSECT	QTS. OF THIS PRODUCT/ACRE	SPECIFIC DIRECTIONS
Apples, Peaches, Lemons, Citrus, Oriental pears	White apple leafhopper	5 to 15	<b>OBSERVE BEE CAUTION</b>  On apples, avoid use during the period from full bloom until 30 days after full bloom unless fruit thinning is desired. Use for pest control during this period also may result in fruit removal.
	Apple aphid, Coding moth	1 to 3	
	Apple aphid, Apple maggot, Apple mite, Bagworm, California pearling (pear sawfly), European apple sawfly, Eucalyptus bud moth, Fruitless leafhopper, Gypsy moth, Japanese beetle, Lesser appleworm, Lygus bugs, Orange tortrix, Pearleaf tortrix, Pear psylla,	1½ to 3	Repeat applications as necessary up to a total of 8 times per crop (including thinning sprays on apples) but not more often than once every 14 days.  For psylla control, apply when eggs hatch or young nymphs are present.  For scale control, apply when crawlers are present.

CROP	INSECT	QTS. OF THIS PRODUCT/ACRE	SPECIFIC DIRECTIONS
Apples, Peaches, Oriental pears and d.	Pear leaf miner, Pearleaf tortrix, Plum curculio, Red-banded leafhopper, Rose apple aphid, Scale insects (Pearce scale, Locustian scale, San Jose scale), Tarnished plant bug, Tortricid leafminer, Woolly apple aphid, Yellow-banded leafminer		

- Do not use on pears between the light flower cluster up to the 20 mm fruit size.
- Do not use on quince.
- Do not apply more than a total of 16 quarts per acre per crop.
- Do not make more than a total of 8 applications per crop.
- Do not apply within 3 days of harvest.

CROP	INSECT	QTS. OF THIS PRODUCT/ACRE	SPECIFIC DIRECTIONS
Apricots, Cherries, Nectarines, Peaches, Plums, and Prunes	Apple pomonid, Black cherry aphid, Cherry fruitworm, Cherry maggot (Cherry fruit fly), Coding moth, Cucumber beetle, Eastern tent caterpillar, Eucalyptus bud moth, European sawfly, Fruitless leafhopper, Green leafhopper, Gypsy moth, Japanese beetle, June beetle, Lesser peachtree sawer, Mistle plant aphid, Orange tortrix, Oriental fruit moth, Peach twig borer, Pearleaf tortrix, Plum curculio, Plum leafhopper, Red-banded leafhopper, Rose chafer, Scale insects (Brown soft scale, Pearleaf scale, Locustian scale, Olive scale, Cystosiphid scale, San Jose scale), Tarnished plant bug, Tortricid moth, Yellow-banded leafhopper	2 to 3	<b>OBSERVE BEE CAUTION</b>  Repeat applications as necessary up to a total of 3 times per crop but not more often than once every 7 days. An additional application at the dormant or delayed dormant timing may be made.  For optimum scale control, apply when crawlers are present.  For lesser peachtree sawer, best results have been found by thoroughly spraying limbs and tree trunks at weekly intervals during each flight.

CROP	INSECT	QTS. OF THIS PRODUCT/ACRE	SPECIFIC DIRECTIONS
	Black cherry aphid, Cherry fruitworm, Cherry maggot (Cherry fruit fly), Coding moth, Cucumber beetle, Eucalyptus bud moth, European sawfly, Fruitless leafhopper, Green leafhopper, Mistle plant aphid, Orange tortrix, Oriental fruit moth, Peach twig borer, Scale insects (Brown soft scale, Pearleaf scale, Locustian scale, Olive scale, Cystosiphid scale, San Jose scale), Tarnished plant bug, Tortricid moth	3 to 4	<b>OBSERVE BEE CAUTION</b>  Repeat applications as necessary up to a total of 3 times per crop but not more often than once every 14 days. An additional application at the dormant or delayed dormant timing may be made.  For optimum scale control, apply when crawlers are present.
	Peach twig borer, Scale insects (Brown soft scale, Pearleaf scale, Locustian scale, Olive scale, Cystosiphid scale, San Jose scale), Tarnished plant bug, Tortricid moth	4 to 6	For dormant or delayed dormant timing, apply in combination with recommended dormant oil. Refer to the dormant oil product label or additional use directions and restrictions.

- Do not apply more than a total of 14 quarts per acre per crop.
- Do not apply more than a total of 8 quarts per acre at the dormant or delayed dormant timing.
- Do not apply more than a total of 8 quarts per acre during the production season.
- Do not apply within 3 days of harvest. In California do not apply within 1 day of harvest.

CROP	INSECT	QTS. OF THIS PRODUCT/ACRE	SPECIFIC DIRECTIONS
Citrus Fruits	Aracade leafhopper, California orange-girdler, Citrus sawfly, Fruitless leafhopper, Orange Tortrix, Western leafhopper	2 to 3	<b>OBSERVE BEE CAUTION</b>  Repeat applications as necessary up to a total of 8 times but not more often than once every 14 days.
	Citrus rust mite, Eriophyid mites, Pear leafhopper, Scale insects (Black scale, brown soft scale, California red scale (except in California), citrus snow scale, yellow scale (except in California))	3 to 5	For scale control, apply when crawlers are present.  For best control of Eriophyid mites including citrus rust mite, apply when pest populations are low.
	Apple weevil (adult), Citrus rust weevil	5 to 7½	

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CROP	INSECT	QTS. OF THIS PRODUCT/ ACRE	SPECIFIC DIRECTIONS
Cotton Pests etc. 4.	(adult), Fuller Rose Beetle, Little leaf natcher (adult)		
	California only: California red scale, Yellow scale	5 to 10	Do not make more than 1 application per season for California red scale. Apply when crawlers are present.

- Do not apply more than a total of 20 quarts per acre per crop.
- Do not apply within 5 days of harvest.

Peanut	Brown soil scale Lecanium scale Navel orangeworm	3 to 5	Repeat applications as necessary up to a total of 4 times per crop (including any applications at the dormant or delayed dormant timing) but not more often than once every 7 days.
	Scale insects	4 to 6	For scale control, apply when crawlers are present.  For dormant or delayed dormant timing, apply in combination with a recommended dormant oil. Refer to the dormant oil product label for additional use directions and restrictions.

- Do not apply more than a total of 18 quarts per acre per crop, including any application at the dormant or delayed dormant timing.
- Do not apply within 14 days of harvest.

Almonds, Chestnuts, Filberts, Pecans, Walnuts	Black margined aphid, Cotton scale, Coddling moth, European fruit lecanium, Fall webworm, Filbert aphid, Filbert leafhopper, Filbertworm, Frested scale, Fruitless leaf-miner, Hickory shoot-borer, Lesser webworm, Navel orangeworm, Peach twig borer, Pecan leaf phylloxera, Pecan red cankerworm, Pecan scalebug, Pecan weevil, San Jose scale, Twig pruner, Walnut caterpillar	2 to 5	<b>OBSERVE BEE CAUTION</b>  Repeat applications as necessary up to a total of 4 times per crop (including any applications at the dormant or delayed dormant timing) but not more often than once every 7 days.  Use lower rates for pests attacking leaves. Use higher rates for pests attacking fruit and for higher infestations.  For scale control, apply when crawlers are present.  For peach twig borer, best results with later applications have been found by making applications in "popcorn" or "pistol" fall stages when the May brood begins to hatch.  For navel orangeworm in almonds and walnuts, best results have been found by timing early and mid-season applications to correspond with moth flight peaks.  For filbert leafhopper, best results have been found by making applications when eggs are hatching, repeating application on first appearance of moths and again 3 to 4 weeks later.  For coddling moth in walnuts, best results have been found by making applications when average cross-sectional diameter of developing nuts are 0.5 to 0.75 inches and again during middle or later June as needed.
	Chestnut weevil, European sawfly	4 to 6	For chestnut weevil, best results have been found with 4 applications at weekly intervals beginning in late July. The last application should be made prior to shock split.  For European sawfly, thorough coverage of trunks, branches, and roots is needed for best results.

Almonds only	Peach twig borer, Scale insects	4 to 5	For dormant or delayed dormant timing, apply in combination with a recommended dormant oil. Refer to the dormant oil product label for additional use directions and restrictions.
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- Do not apply more than a total of 18 quarts per acre per crop, including any application at the dormant or delayed dormant timing.
- Do not apply within 14 days of harvest.

CROP	INSECT	QTS. OF THIS PRODUCT/ ACRE	SPECIFIC DIRECTIONS
Alfalfa, Clover, Strawberry	Blow fly larvae, Mexican bean beetle	5 to 1	<b>OBSERVE BEE CAUTION</b>  Observe plant response procedures.
	Alfalfa caterpillar, Bean leaf beetle, Cucumber beetle, Green cloverworm, Japanese beetle, Leafhoppers, Three cornered alfalfa hopper, Thrips, Velvet bean caterpillar	1	On dense growth, use 25 to 40 gallons of water per acre with ground equipment to ensure adequate coverage.
	Alfalfa weevil larvae, Armyworm, Clover head weevil, Corn earworm, Egyptian alfalfa weevil larvae, Green skipper, European alfalfa beetle, Fall army worm, yellow striped armyworm	1 to 1 1/2	For alfalfa weevil larvae, if pre-dormant damage is extensive, cut alfalfa and treat the stubble. This product is not effective against adult alfalfa weevils.  For cutworm control, this product is most effective against species which feed on the upper portions of the plant.
	Alfalfa weevil larvae (west of the Rocky Mountains)	1 to 1 1/2	
	Alfalfa weevil larvae (east of the Rocky Mountains)	1 1/2	

- Do not apply more than once per cutting.
- Do not exceed 1 1/2 quarts per acre per cutting.
- Carbaryl may cause a temporary bleaching of tender alfalfa foliage.
- Do not apply within 7 days of harvest or grazing.

Peanut, Cotton, Grown for Seed	Armyworm, Cutworm bugs, Green skipper, Fall armyworm, striped green hopper, Thrips, Range caterpillar, Range crickets, Ticks	1 to 1 1/2	Up to 3 applications per year may be made but not more often than once every 14 days.  To control thrips in grasses grown for seed use high spray pressure to insure penetration into leaf.  Carefully mark swaths to avoid over-application.
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- Do not exceed a total of 3 quarts per acre per year.
- Do not apply within 14 days of harvest or grazing.

Rangeland	Black green bug, Grasshoppers, Mormon cricket, Range caterpillar, Range crane fly,	5 to 1	Do not make more than 1 application per year.
	Ticks	1	Carefully mark swaths to avoid over-application.

- Do not apply more than 1 quart per acre per year
- May be harvested or grazed the same day as treatment

**NONCROPLAND**

CROP	INSECT	QTS. OF THIS PRODUCT/ ACRE	SPECIFIC DIRECTIONS
Conservation Reserve Program, Acreage Set-aside Program, Acreage Withdrawal, Rights-of-Way, Hedgerows, Discharge, Prunings	Black green bug	5 to 5	Up to 3 applications per year may be made but not more often than once every 14 days.
	Mormon cricket, Range caterpillar, Range crane fly	5 to 1	Carefully mark swaths to avoid over-application.
	Ticks	1 to 1 1/2	

- Do not apply more than a total of 3 quarts per acre per year.
- Do not apply within 14 days of grazing or harvest for forage or hay.

**GRASSHOPPER CONTROL**

CROP	INSECT	QTS. OF THIS PRODUCT/ ACRE	SPECIFIC DIRECTIONS
All crops on this label	Grasshopper	5 to 1 1/2	Apply 5 to 5 1/2 quarts per acre of this product for nymphs on small plants or sparse vegetation. Apply 1 to 1 1/2 quarts per acre for mature grasshoppers or applications to dense foliage or if estimated control is desired. Be certain spray volumes are appropriate to ensure adequate coverage.

\*Note: Refer to individual site label instructions on this label for use limitations and restrictions. Do not use rates higher than listed for the site or exceed other use restrictions.

**TREES AND ORNAMENTALS**

For dilute-spray ground applications to trees (including shade trees, shelter belts, non-urban forests, tree plantations, Christmas trees, rangeland trees, parks and recreation areas, rural shelter belts), ornamentals, woody plants and shrubs, apply in the specified dosage per 100 gallons of water. For concentrate spray ground applications, apply the specified dosage per acre in sufficient spray volume to provide thorough coverage. For aerial applications to forest trees (including shade trees, shelter belts, plantations, parks and recreation areas) and



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commercially grown ornamentals, woody plants and shrubs apply the specified dosage per acre in sufficient spray volume to provide thorough coverage. Avoid direct application to lakes, streams and ponds. Do not make more than 6 foliar and 2 direct trunk applications per year.

INSECT	AMOUNT OF THIS PRODUCT TO PREPARE		SPECIFIC DIRECTIONS
	1 GAL. (100 GALS.)	1 qt.	
<b>Arts:</b> Apple aphid, Armyworm, Azalea leafminer, Bagworm, Birch leafminer, Winter beetle, Boulder bug, Sawtooth leafminer, Brown tail moth, Cankerworm, Caterpillar, Chigger, Cuckoo sparrow gill aphid, Cypress, Cypress tip moth, Douglas fir tussock moth, Eastern spruce gill aphid, Elm leaf aphid, Elm leaf beetle, Elm sawfly, Eriophyid mite, European pine shoot moth, Fall armyworm, Flea beetle, Fuller rose beetle, Gall midges, Girdler, Green striped caterpillar, Gummy scale, Gypsy moth, Hackberry sawfly, Holly leaf moth, Holly leafminer, Japanese sawfly, Japanese beetle, Jeffrey pine needleminer, June beetle, Lace bugs, Leaf hoppers, Leaf rollers, Locust borer, Maple leafminer, Mealy bugs, Minnow webworm, Nymphal pine tip moth, Oak leafminer, Oak leaf skeletonizer, Oakworm complex, Olive sallow, Olive saw, Orange striped caterpillar, Orange tortrix, Periodical cicada, Pine sawfly, Pine spruce sawfly, Pitch pine tip moth, Plant bugs, Pineshell bark worm, Pinyon, Pupa caterpillar, Red humped oak worm, Rose aphid, Rose chalcid, Rosemary, Scattered prominent, Sawtooth (sawfly), Scale insects, Saw bugs, Spiny oak caterpillar, Springtails, Spruce sawfly, Spruce needleminer, Sub-tropical pine tip moth, Tule sawfly, Turpentine, Turpentine (sawfly), Tule, Walnut caterpillar, Webworms, Western hickory looper, Western spruce budworm, Willow leaf beetle, Willow (sawfly)	1 gal.	1 qt.	<p>Use sufficient spray volume to obtain thorough coverage of upper and lower leaf surfaces. To control scale insects, treat trunks, stems, and twigs in addition to plant foliage.</p> <p>For optimum worm control, treat when in early instars. Addition of a sticker may improve residual control.</p> <p>Observe plant response precautions.</p> <p>Applications for control of Maple leafminer on sugar maple should be made when larvae are in 2nd instar after mining, and as cones are being formed.</p> <p>Repeat treatments as necessary up to a total of 2 times per year but not more often than once every 7 days.</p>

INSECT	AMOUNT OF THIS PRODUCT TO PREPARE		SPECIFIC DIRECTIONS
	1 GAL. (100 GALS.)	1 qt.	
<b>Arts:</b> Elm bark beetle, Ips engraver beetle, Mountain pine beetle, Roundheaded pine beetle, Western pine beetle	1 gal.	1 qt.	<p>Apply as a preventive treatment only. Repeat annually as required to prevent beetle attacks.</p> <p>Apply 1 gallon of spray per 50 square feet of bark in May to early July or prior to beetle attack. Treat tree trunks from ground level up until trunk diameter is less than 6 inches.</p> <p>Applications for control of Elm bark beetle should consist of 20-30 gallons of spray for 50 feet height of elm trees for thorough coverage of all bark surfaces on trunk, limbs and twigs.</p>

• Do not make more than 2 applications per year  
 • Do NOT ALLOW PUBLIC USE OF TREATED AREAS DURING APPLICATIONS OR UNTIL SPRAYS HAVE DRIED

SITE	INSECT	AMOUNT OF THIS PRODUCT TO PREPARE	SPECIFIC DIRECTIONS
Turf Grasses	Ailanthus, Armyworm, Bagworm, Billbug, Caterpillar, Chigger, Chinch bug, Cuckoo sparrow gill aphid, European spruce sawfly, Fall armyworm, Flax sawfly, Flea beetle, Gummy scale, June beetle, Leafhopper, Lesser moth, Millipede, Mosquito, Red webworm (stem miner), Sawtooth, Springtails, Tule, White grub, Yellow-striped army worm	1 gal.	1 qt.
	Imported Fire Ants	1 gal.	1 qt.

(Refer to OUTDOORS section of PEST CONTROL IN AND AROUND BUILDINGS)

**ULT MOSQUITO CONTROL**

GROUP	AMOUNT OF THIS PRODUCT TO PREPARE		SPECIFIC DIRECTIONS
	1 GAL. (100 GALS.)	1 qt.	
Pastures, Pastureland, Parks, Public Recreation Areas, Logging Camps, Military Posts, Pastoral Lands, Wetlands	1 gal.	1 qt.	<p>Test thoroughly and areas where adult mosquitoes are active in early morning or late evening. Repeat at 7 to 10 day intervals. Mix 1/2 to 3/4 quart of this product per 100 gallons in mist blower; mix 1/2 to 1 quart of this product in sufficient volume of water per acre in low pressure sprayer; mix 1 quart of this product in sufficient volume of water per acre in low pressure sprayer.</p> <p>For residual control in suboptimal regions apply 4 gallons of prepared spray per 2000 square feet of surface area. Repeat in 3 to 6 months or when necessary.</p>

• Do not allow public use of treated areas during application or until sprays have dried.  
 • May kill children and cattle. Do not use in areas where these are important resources.

**PEST CONTROL IN AND AROUND BUILDINGS**

**GENERAL INFORMATION**

**Notes:** Staining may occur on certain surfaces such as stucco, brick, Cinder block and wood. Therefore, applications of this product to surfaces where a noticeable residue or discoloration is objectionable should be avoided. Do not apply to carpets or draperies as staining may occur. Care should also be exercised to avoid spilling of wallpaper and fabrics. Do not use this product in commercial food areas of food handling establishments, restaurants or other places where food is prepared or processed. Do not use in serving areas while food is exposed.

**INDOORS (NOT REGISTERED FOR INDOOR USE IN NEW YORK STATE)**  
**Anticlimax (German cockroach):** Mix 3 oz. of this product per gallon of water and apply as fine, low pressure (20 psi) mist spray or as crack and crevice application to areas where these pests hide, such as baseboards, storage areas, closets, around water pipes, doors and windows, behind and under refrigerators, cabinets, sinks, stoves, dishwashers, hot water heaters, the underside of shelves, drawers and similar areas. For ants, apply to ant trails, around doors and windows and other places where ants enter premises.

**Bees and Wasps:** Mix 3 oz. of this product per gallon of water and thoroughly spray nest and entrance and surrounding areas where insects alight. It is generally advisable to spray the nests in the evening when the insects are less active and have returned to the nest. For best results, check nest carefully one or two days after spraying to ensure complete kill, then remove and destroy nest to prevent emergence of newly hatched insects.

**Bees, Wasps, Flies and Fleas:** Mix 3 oz. of this product per gallon of water and thoroughly spray infested areas such as pet beds and resting quarters, nearby cracks and crevices, between and under cushions and upholstered furniture, along and behind baseboards, window and door frames and other areas where these pests may be present.

**Cockroach Ants:** Mix 3 oz. of this product per gallon of water and apply to ant trails, around doors and windows and other places where ants enter premises. Where possible, apply this product directly to ant nest or infested wood.

**Catclaw (American cockroach):** Mix 3 oz. of this product per gallon of water and apply around water pipes, doors and windows, and other places where these pests may enter premises. Spray baseboards, storage areas, garages, porches, basements and other areas, where these pests are found.

**Scorpion:** Efficacy varies with species sensitivity. This product is generally not highly effective in controlling German cockroaches. However, the following may be controlled with the rates as stated. American cockroach, Australian cockroach, Brown cockroach, Smoky brown cockroach, and others. Mix 3 oz. of this product per gallon of water and apply as a fine, low pressure (20 psi) mist spray or as crack and crevice application to areas where these pests hide, such as baseboards, storage areas, closets, around water pipes, doors and windows, behind and under refrigerators, cabinets, sinks, stoves, dishwashers, hot water heaters, the underside of shelves, drawers and similar areas.

**OUTDOORS**  
**Outdoor Treatment:** Residual spray for control of ants, bees and wasps, brown dog ticks, carpenter ants, cockroaches, crickets, earwigs, fleas, ticks and silverfish, flies, mosquitoes, scorpions and spiders. Mix 10 oz. of this product per 50 gallons of water (2 1/2 oz. per 3 gallons), and apply via power spray or other spray methods. To help prevent infestations of buildings by the above pests, outside perimeter treatment should be in a band 6 to 10 feet wide and confined to shrub beds, foundation plantings and lawn or soil areas immediately adjacent to the structure. Direct application to structures should be minimal and restricted to cracks and crevices and other areas where insects tend to congregate.

**Imported Fire Ants:** Mix 1 1/2 pints of this product per 50 gallons of water (3/4 oz. per gallon). Apply a total of 2 gallons of the diluted solution over the surface of each mound or at least 1 quart per 6 inches of mound diameter using a bucket, can or other appropriate equipment. Thoroughly wet mound and surrounding area to a 4 ft. diameter (12 sq. ft.). Do not disturb mounds prior to treatment. Pour solution from a height of about three feet to give sufficient force to break mound apart and flow into ant tunnels. For best results apply in cool weather, 65-80°F, or in early morning or late evening hours. Repeat application if mound activity resumes after 10 days. Treat new mounds as they appear. Pressurized sprays may disturb the ants and cause migration, reducing product effectiveness.

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**NOTICE**

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 PLATTE, THE MANUFACTURER OR SELLER. IN NO CASE SHALL PLATTE, THE MANUFACTURER OR SELLER BE LIABLE FOR 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, PLATTE, THE MANUFACTURER OR SELLER 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. BUYER'S OR USER'S EXCLUSIVE REMEDY, AND PLATTE'S, THE MANUFACTURER'S OR SELLER'S TOTAL LIABILITY, SHALL BE FOR DAMAGES NOT EXCEEDING THE COST OF THE PRODUCT.