



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

October 26, 2018

ArborSystems, Inc.
c/o
Kim Davis
RegWest Company, LLC
8203 West 20th Street, Suite A
Greeley, CO 80634

Subject: Label Amendment – To add back previous approved labeling; split label into additional sublabels for alternate application equipment
Product Name: Boxer Insecticide-Miticide
EPA Registration Number: 69117-12
Application Date: November 1, 2017
Decision Number: 535943

Dear Ms. Davis:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, is acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

The alternate brand name “TreeMec Inject” has been added to the product record.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. “To distribute or sell” is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

Should you wish to add/retain a reference to the company’s website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product’s label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA’s Office of Enforcement and Compliance.

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Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. If you have any questions, please contact Gene Benbow by phone at 703-347-0235, or via email at Benbow.Gene@epa.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Gene Benbow".

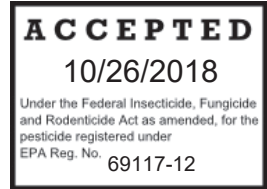
Gene Benbow, Product Manager 7
Invertebrate & Vertebrate Branch 3
Registration Division (7505P)
Office of Pesticide Programs

{Sublabel A: For Use with ArborSystems' Direct-Inject Tree Injection System}

BOXER™ Insecticide-Miticide

{Collapsible Pouch Label (BX_TAG) - used for both sizes}

{ABN: TreeMec® Inject}



BOXER™ Insecticide-Miticide

Active Ingredient:

Emamectin Benzoate (CAS No. 155569-91-8) 4%

Other Ingredients 96%

Total 100%

Net Contents: 4 fl oz (120 ml); Contains 0.18 oz (5 grams) active ingredient per 4 fl oz (120 ml) pack.
Net Contents: 1 qt 2 fl oz (1000 ml); Contains 1.54 oz (43.5 grams) active ingredient per 1 qt 2 fl oz (1000 ml) pack.

**Keep Out of Reach of Children
WARNING**

See booklet for First Aid, additional Precautionary Statements and complete Directions for Use.
EPA Reg. No. 69117-12 • EPA Est. 69117-NE-1

ArborSystems
800-698-4641 • Fax: 402-339-5011
P.O. Box 34645 • Omaha, NE 68134

{Booklet (BX_BK) – used for both sizes}

BOXER™ Insecticide-Miticide

For systemic two-year control of listed insect and mite pests in a variety of deciduous/coniferous ornamental trees and palms in utility rights-of-way, urban environments, residential areas and interior landscapes.

Active Ingredient:

Emamectin Benzoate (CAS No. 155569-91-8) 4%

Other Ingredients 96%

Total 100%

Contains 0.36 lb. emamectin per gallon

Net Contents: 4 fl oz (120 ml); Contains 0.18 oz (5 grams) active ingredient per 4 fl oz (120 ml) pack.
[1 qt 2 fl oz (1000 ml); Contains 1.54 oz (43.5 grams) active ingredient per 1 qt 2 fl oz (1000 ml) pack.]

**Keep Out of Reach of Children
WARNING**
See inside for First Aid, additional Precautionary Statements and complete Directions for Use.

BOXER™ Insecticide-Miticide
An ArborSystems™ Direct-Inject™ Chemical
• Easy • No Drilling • Saves Time and Money

For systemic two-year control of listed insect and mite pests in a variety of deciduous/coniferous ornamental trees and palms in utility rights-of-way, urban environments, residential areas and interior landscapes (such as those in

domestic landscape/garden areas, public display plantings, recreation areas, highway and other transportation rights-of-way, scenic corridors, forest areas, campgrounds and other uncultivated, nonagricultural areas).

Intended for use by professional arborists/applicators, foresters, grounds maintenance professionals and landscapers.

To be used only with the ArborSystems Direct-Inject Tree Injection System.



Tree Injection Solutions

800-698-4641 • Fax: 402-339-5011
P.O. Box 34645 • Omaha, NE 68134

EPA Reg. No. 69117-12 • EPA Est. 69117-NE-1

PRECAUTIONARY STATEMENTS

Hazards to Humans & Domestic Animals

WARNING: Causes substantial but temporary eye injury. Harmful if swallowed. Do not get in eyes or on clothing. Wear protective eyewear such as goggles or safety glasses. Thoroughly wash with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

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

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

Environmental Hazards

This product is highly toxic to fish, mammals and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters or rinsate. This product is highly toxic to bees exposed to direct treatment or residues on blooming trees. Do not apply this product to blooming trees if bees are foraging the treatment area.

BOXER™ Insecticide-Miticide

DIRECTIONS FOR USE

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

Intended for use by professional arborists/applicators, foresters, grounds maintenance professionals and landscapers.

Restriction: Do not apply to trees that may be harvested for food consumption by humans or used in animal feed.

ArborSystems™ Direct-Inject™ Tree Injection System

The ArborSystems Direct-Inject Tree Injection System is easy to use. Most trees are treated in as little as five minutes or less, allowing applicators to treat trees quickly. There is no need to wait for absorption (translocation). Chemical is injected into the cambial area (the active vascular system) of the tree. Because the chemical is placed right where the tree can use it, effectiveness of the chemical is increased. Use in sunny or overcast conditions, rainy or dry, at any time of day. As no drilling or implants are required, you can treat trees year after year, with no threat of long-term or permanent damage to the tree. This system minimizes wounding and promotes long-term tree vigor.

Indications

As a preventative, apply in the early spring prior to insect activity in the tree. As a remedial (on trees already showing symptoms of infestation), apply as needed spring through fall, provided the bark is pliable enough to accept the chemical injections.

Dosage

1 ml per 4" to 6" of trunk circumference measured within 12" of the ground.

Dosage may be increased to a maximum of 2 ml per injection site for trees with a circumference greater than 38" (diameter greater than 12"), for challenging insect infestations or for remedial or longer residual control.

Note: Younger or small trees with thinner bark may be less able to retain the full dose per injection site; in such cases, to obtain the appropriate per-tree dosage, reduce the dosage per injection site to 0.5 to 1 ml and increase the number of injection sites accordingly.

Do not exceed the maximum annual application rate of 192.5 ml of product (0.3 oz (8.5 g) active ingredient) per tree.

Pests Controlled

- Ambrosia Beetles*
- Aphids*
- Bagworms
- Clearwing Borers (such as Ash and Sequoia Pine Pitch Tube Moth)
- Cone Beetles (*Conophora* spp.)*
- Conifer Mites*
- Cynipid Gall Wasps*
- Fall Webworms
- Flatheaded Borers (such as adult and larvae of Bronze Birch* and Two-lined Chestnut*)
- Gypsy Moths
- Honeylocust Plant Bugs
- Japanese Beetles
- Leafminers (such as *Lepidoptera*, *Coleoptera*, *Hymenoptera*)
- Mimosa Webworms
- Oak Worms
- Pine Cone Seed Bugs (suppression of *Leptoglossus* and *Tetyra* spp. in the year of treatment)
- Pine Coneworms (*Dioryctria* spp.)
- Pine Needle Scale
- Pinewood Nematodes
- Red Palm Mites
- Roundheaded Borers (excluding Asian Longhorned Beetles)
- Sawflies (such as Elm, Pine)
- Scolytids (Bark Beetles) *Ips* Engraver Beetles, Mountain Pine Beetles, Southern Pine Beetles, Spruce Beetles, Western Pine Beetles)
- Tent Caterpillars (such as Eastern, Forest, Pacific and Western)
- Tussock Moths
- Western Spruce Budworms
- Winter Moths

*Not registered for use in California

Personal Protective Equipment (PPE)

Use protective eyewear and gloves when handling ArborSystems Direct-Inject chemicals. Use chemical-resistant gloves made of barrier laminate, butyl rubber \geq 14 mils, nitrile rubber \geq 14 mils, neoprene rubber \geq 14 mils, natural rubber \geq 14 mils, polyethylene \geq 14 mils, polyvinylchloride (PVC) \geq 14 mils or viton \geq 14 mils.

How to Use ArborSystems Direct-Inject Chemicals with ArborSystems Direct-Inject Tree Injection System

1. Use only ArborSystems Direct-Inject chemicals with your unit as they have been formulated specifically for the Direct-Inject system. Use of other chemicals will invalidate warranty.
2. Attach the chemical pack to the Direct-Inject unit and prepare the unit to make injections.
3. Set the delivery volume on the unit.
4. Follow the label directions in this booklet label to determine the amount of chemical and number of injection sites.
5. Determine where to make injections in the bark. Generally, the injection tip is inserted into the fissure (valley) of the tree bark. Inject thin-barked trees in the thicker part of the tree bark. Thick-barked trees require a longer injection tip.
6. Make injections working around the circumference of the tree. Make Wedgle® Tip injections within 12" of the ground. Portle® Tip injection height varies depending on type of tree and location.
7. When treating hardwoods, use Wedgle® Tips and make injections within 12" of the ground. Initially, use the shorter Wedgle Tip; if no resistance is met after this initial insertion past the bark (i.e., if the tip does not reach the outer xylem ring), withdraw the Tip. Replace the short Tip with the longer Tip to ensure the Tip fully penetrates the bark to reach the outer xylem ring. Use Portle® Tips when treating conifers and Palm Tips when treating palms.
8. When the Tip is correctly inserted, firmly squeeze the injection unit handles using a smooth, slow motion. This releases a pre-measured chemical dose into the tree.
9. Continue making injections moving around the tree until the entire tree trunk has been treated.
10. During use, periodically clean the Direct-Inject unit to prevent clogging.

Storage and Disposal

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

Pesticide Storage: Store in original container in a cool, dry place away from children and pets. Keep from freezing. **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:** Non-refillable container; do not reuse or refill this container. Completely empty pack into application equipment, then offer for recycling if available; otherwise, dispose of empty pack in a sanitary landfill.



Tree Injection Solutions

800-698-4641 • Fax: 402-339-5011
P.O. Box 34645 • Omaha, NE 68134

Notice of Warranty

ArborSystems warrants that this product conforms to the chemical description on the label and is reasonably fit for use under average conditions when used strictly in accordance with the directions on the labeling. ArborSystems does not make or authorize any agent or representative to make any other warranty, guarantee or representation, express or implied, concerning this product.

Portle® and Wedgle® are registered trademarks of ArborSystems.

ArborSystems™, BOXER™ Insecticide-Miticide, Direct-Inject™ and WedgeChek™ are trademarks of ArborSystems.

Direct-Inject™ unit is protected by U.S. Patent #5,901,498

Wedgle® Tip is protected by U.S. Patent #5,239,773
WedgeChek™ is protected by U.S. Patent #5,797,215
Portle® Tip is protected by U.S. Patent #7,178,286

{Cylinder Label (BX-PL) – only 4 fl oz container}

BOXER™ Insecticide-Miticide

For systemic two-year control of listed insect and mite pests in a variety of deciduous/coniferous ornamental trees and palms in utility rights-of-way, urban environments, residential areas and interior plantscapes.

**Keep Out of Reach of Children
WARNING**

**See booklet for First Aid, additional
Precautionary Statements and
complete Directions for Use.**

Active Ingredient:

Emamectin Benzoate
(CAS No. 155569-91-8) 4%

Other Ingredients 96%
Total 100%

Net Contents: 4 fl oz (120 ml)
Contains 0.18 oz (5 grams) active ingredient
per 4 fl oz (120 ml) pack.

**Net Contents 4 fl oz (120 ml)
EPA Reg. No. 69117-12
EPA Est. 69117-NE-1**



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DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. The ArborSystems Direct-Inject units are designed to be used only with ArborSystems pre-packed chemicals. Tampering with packs or contents may cause non-warranted damage to your injection system.

Storage and Disposal

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

Pesticide Storage: Store in original container in a cool, dry place away from children and pets. Keep from freezing. **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:** Non-refillable container; do not reuse or refill this container. Completely empty pack into application equipment, then offer for recycling if available; otherwise, dispose of empty pack in a sanitary landfill.

{Outer Box Label (BX_PXL) (BX_1MS) – used for both sizes}

BOXER™ Insecticide-Miticide

BOXER™ Insecticide-Miticide

For systemic two-year control of listed insect and mite pests in a variety of deciduous/coniferous ornamental trees and palms in utility rights-of-way, urban environments, residential areas and interior plantscapes.

Active Ingredient:

Emamectin Benzoate (CAS No. 155569-91-8) 4%

Other Ingredients 96%
Total 100%

Net Contents: 4 fl oz (120 ml); Contains 0.18 oz (5 grams) active ingredient per 4 fl oz (120 ml) pack.
[Net Contents: 1 qt 2 fl oz (1000 ml); Contains 1.54 oz (43.5 grams) active ingredient per 1 qt 2 fl oz (1000 ml) pack.]

Keep Out of Reach of Children WARNING

See booklet for First Aid, additional Precautionary Statements and complete Directions for Use.

DIRECTIONS FOR USE

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Storage and Disposal

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

Pesticide Storage: Store in original container in a cool, dry place away from children and pets. Keep from freezing. **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:** Non-refillable container; do not reuse or refill this container. Completely empty pack into application equipment, then offer for recycling if available; otherwise, dispose of empty pack in a sanitary landfill.

Net Contents: 4 fl oz (120 ml)
[Net Contents: 1 qt 2 fl oz (1000 ml)]
EPA Reg. No. 69117-12 • EPA Est. 69117-NE-1



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[] Denotes alternate/optional language

{ } Denotes language intended to clarify or describe label elements and will not appear on the market labeling

{Additional Selling/Marketing Copy for use in conjunction with other label elements; on the website; and in promotional materials, displays, etc.}

ArborSystems™ Direct-Inject™ Tree Injection System

The ArborSystems Direct-Inject Tree Injection System is effective. Chemicals are injected directly into the tree. Because the chemical is placed right where the tree can use it, effectiveness of the chemical is increased and control of most problems can start to be seen in as little as three to five days. Also, because no chemical is lost in non-active wood, the Direct-Inject system allows you to use less chemical to achieve high levels of effectiveness; this saves money and reduces chemical waste. The Direct-Inject System injects chemicals into a tree with minimal wounding. With no holes to drill, no air or pathogens are allowed to enter the tree, potential decay never starts and long term wounding is prevented. The tree's ability to move water and nutrients, and to store food, is not compromised.

Chemical packs are supplied in self-sealing containers. After injections have been made, you have only one small container of which to dispose. Concerns you may have had when spraying will be eliminated. And with a closed system there is no mixing.

With no drilling required the ArborSystems Direct-Inject System:

- Minimizes wounding to keep out fungi, bacteria, and insects.
- Prevents air from getting into the tree. When air is allowed into a tree's vascular system, it cuts off the flow of water and nutrients.
- Allows multiple or annual treatments without damaging the tree.
- Requires no drills, power supply or other bulky equipment.

With this system and chemicals, tree care professionals effectively combat and manage many of the most devastating environmental plant threats.

The ArborSystems Direct-Inject System is designed to preserve and protect the natural and urban forest. Treat almost any non-food bearing/ornamental tree in five minutes or less. The Direct-Inject System is an efficient chemical delivery system. You achieve control with less chemical because chemical is placed precisely where the tree can best use it. No chemical is lost in dead wood.

ArborSystems Direct-Inject chemicals are integral parts of the Direct-Inject Tree Injection System. Use only ArborSystems' Direct-Inject chemicals with the Direct-Inject Units. Using unauthorized chemicals with the ArborSystems Direct-Inject System constitutes a violation of Federal law.

Chemical Selection

Your distributor can advise you on the best chemical selections for trees in your area.

BOXER™ Insecticide-Miticide

Common name: Emamectin Benzoate

Chemical: Emamectin benzoate

{Sublabel B: For Use with Other Application Systems/Methods}

BOXER™ Insecticide-Miticide

{Booklet-Front}

{ABN: TreeMec® Inject}

BOXER™ Insecticide-Miticide

Active Ingredient:

Emamectin Benzoate (CAS No. 155569-91-8) 4%

Other Ingredients 96%

Total 100%

Contains 0.36 lb Emamectin per gallon

Net Contents: 1 qt (946.35 ml)

Keep Out of Reach of Children

WARNING

[Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)]

See booklet for First Aid, additional Precautionary Statements and complete Directions for Use.

EPA Reg. No. 69117-12 • EPA Est. 69117-NE-1



800-698-4641 • Fax: 402-339-5011
P.O. Box 34645 • Omaha, NE 68134

{Booklet}

BOXER™ Insecticide-Miticide

**Injected insecticide for two-year control of listed insect and mite pests
in deciduous and coniferous trees and palms.**

Active Ingredient:

Emamectin Benzoate (CAS No. 155569-91-8) 4%

Other Ingredients 96%

Total 100%

Contains 0.36 lb Emamectin per gallon

Keep Out of Reach of Children

WARNING

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)

See inside for First Aid, additional Precautionary Statements and complete Directions for Use.

EPA Reg. No. 69117-12 • EPA Est. 69117-NE-1



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Notice of Warranty

ArborSystems warrants that this product conforms to the chemical description on the label and is reasonably fit for use under average conditions when used strictly in accordance with the directions on the labeling. ArborSystems does not make or authorize any agent or representative to make any other warranty, guarantee or representation, express or implied, concerning this product.

TreeMec® is a registered trademark of ArborSystems.
ArborSystems™ and BOXER™ are trademarks of ArborSystems.

BOXER™ Insecticide-Miticide

PRECAUTIONARY STATEMENTS

Hazards to Humans & Domestic Animals

WARNING: Causes substantial but temporary eye injury. Harmful if swallowed. Do not get in eyes or on clothing. Wear protective eyewear such as goggles or safety glasses. Thoroughly wash with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

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

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants;
- Chemical-resistant gloves (Category C) such as barrier laminate, butyl rubber > 14 mils, nitrile rubber > 14 mils or neoprene rubber > 14 mils;
- Shoes and socks; and
- Protective eyewear.

Environmental Hazards

This product is highly toxic to fish, mammals and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters or rinsate. This product is highly toxic to bees exposed to direct treatment or residues on blooming trees. Do not apply this product to blooming trees if bees are foraging the treatment area.

DIRECTIONS FOR USE

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

Important: Read the entire label before using this product. Failure to follow label instructions may result in poor control or tree injury and may cause injury to people, animals and the environment.

Product Information

BOXER™ Insecticide-Miticide [This product] is for the control of mature and immature insect and mite pests of deciduous and coniferous trees and palms including, but not limited to, those growing in residential and commercial landscapes, parks, plantations, seed orchards and forested sites in private, municipal, state, tribal and national areas. BOXER™ Insecticide-Miticide [This product] contains the active ingredient Emamectin Benzoate and is formulated to translocate in the tree's vascular system when injected. This product must be placed into active sapwood and will actively control pests for up to two years.

BOXER™ Insecticide-Miticide [This product] is designed to be used with tree injection devices that meet the label and dose requirements for the control of listed pests of trees. Follow manufacturer's directions for equipment use.

Dosages are based on the Diameter (in inches) of the tree at Breast Height ("DBH"). DBH is the outside bark diameter of the trunk at 4.5 feet (1.37 m) above the ground on the uphill side of the tree. For the purposes of determining breast height, the ground includes the duff layer that may be present, but does not include unincorporated woody debris that may rise above the ground line. The diameter is determined by measuring the circumference of the tree at DBH and dividing the circumference (in inches) by three (3). To determine DBH for multi-stemmed woody ornamentals, measure the DBH for each stem or branch and add together for the total DBH per tree.

Placement of Application/Injection Sites: Inject at the base of the tree. Inject into the stem within 12" of the soil, into the trunk flare or into tree roots exposing them by shallow excavation. Make applications into intact, healthy sapwood. Do not inject into injured areas or areas with decay.

Number of Injection Sites: Work around the tree, spacing injection sites approximately every 4 to 8 inches of the tree's circumference or according to the manufacturer's recommendation for the application device.

Drill Depth: Drill through the bark, then 5/8" to 1-5/8" (hardwoods) or 1-5/8" to 2" (conifers) into the sapwood with the appropriate sized drill bit. Use clean, sharp drill bits. Take precautions to avoid diseased areas and transferring infected tissues to other injection sites.

Resinous Conifers: In resinous conifers, such as pine and spruce, start the injection immediately after drilling into the sapwood. A prolonged delay may reduce uptake due to resin flow into the opening.

When to Treat: BOXER™ Insecticide-Miticide [This product] contains the active ingredient Emamectin Benzoate which is a glycoside insecticide. It is active against immature and adult stages of arthropods. The primary route of toxicity is through ingestion.

Environmental Conditions: Uptake of BOXER™ Insecticide-Miticide [this product] is dependent upon the tree's transpiration which is dependent upon a number of abiotic and biotic factors such as soil moisture/temperature, ambient temperature and time of day. For uptake, apply when soil is moist, soil temperature is 45° to 90°F and during the 24-hour period when transpiration is greatest (typically before 2:00 p.m.). Applications to drought- or heat-stressed trees may result in injury to tree tissue, poor treatment and subsequent control. Avoid treating trees that are moisture stressed or suffering from herbicide damage.

Monitor Tree Health and Pest Infestations: Effective injection treatment is favored by a full canopy (i.e., leaves) and healthy vascular system. Once these tissues are compromised by pest damage (larval galleries, defoliation, leaf mining, etc.) an effective and uniform application of BOXER™ Insecticide-Miticide [this product] may be difficult to achieve and subsequent control may be poor. For optimum results, treat at least 2 to 3 weeks before pests historically infest the host tree. As a result of systemic movement and longevity of BOXER™ Insecticide-Miticide [this

product] in trees, this interval may be extended much earlier to 6 months should tree dormancy, adverse weather, management, asynchronous life cycle of pests, etc. allow earlier application timing.

BOXER™ Insecticide-Miticide [This product] may also be effective as a remedial treatment against some pests, such as those with slower development or if multiple life stages are susceptible to Emamectin Benzoate. Pests that attack the stem and branches, such as bark beetles and clearwing borers, may disrupt vascular tissue resulting in poor distribution in an infested tree. This includes the initial larval stages of pests, such as flat-headed borers and clearwing borers, which attack the stem and branch, which may disrupt vascular tissue resulting in poor distribution of the product in an infested tree. However, control may be achieved if larvae come into contact with or feed on Emamectin Benzoate-treated tissues.

{Optional Use Directions “A”}

Use Rates

Use as formulated or dilute with equivalent 1 to 3 volumes of water or more, as necessary.

Tree Diameter (DBH) (Inches)	Low (mL product/tree)	Medium (mL product/tree)	Medium-High (mL product/tree)	High (mL product/tree)
4 to 6	15	25	50	-
7 to 9	20	40	80	-
10 to 12	30	55	110	165
13 to 15	35	70	140	210
16 to 18	42	85	170	225
19 to 21	50	100	200	300
22 to 24	-	115	230	345
25 to 27	-	130	260	390
28 to 30	-	145	290	435
31 to 33	-	160	320	480
34 to 36	-	175	350	525
37 to 39	-	190	380	570
40 to 42	-	205	410	615
43 to 45	-	220	440	660
46 to 48	-	235	470	705
49 to 51	-	250	500	750
52 to 54	-	265	530	795
55 to 57	-	280	560	840
58 to 60	-	295	590	885
61 to 63	-	310	620	930
64 to 66	-	325	650	975
67 to 69	-	340	680	1020
70 to 72	-	355	710	1065

The use of low, medium, medium-high and high rates is based on the professional judgement of the applicator as to what constitutes a low, medium or high infestation. Higher rates tend to provide a longer residual and control of more difficult-to-control insects. See **Target Pests** table for additional information in choosing the amount of product to apply.

Additional Directions for Application in Trees

Tree Tissue	Target Pest	Application Rate Range ¹	Comments
Seed and Cone	Cone Beetle ² (<i>Conophthora</i> spp.) Pine Cone Seed Bug (suppression of <i>Leptoglossus</i> and <i>Tetyra</i> spp. in the year of treatment) Pine Coneworm (<i>Dioryctria</i> spp.)	Medium to High	For optimal control, apply in the fall for early season pests or at least 30 days before insect attack.
Bud and Leaf	Aphid ² Bagworm Conifer Mites ² Fall Webworm Gypsy Moth Honeylocust Plant Bug Japanese Beetle Leafminers (such as <i>Coleoptera</i> , <i>Hymenoptera</i> <i>Lepidoptera</i>) Mimosa Webworm Oak Worm Pine Needle Scale Red Palm Mite Sawfly (such as Elm, Pine) Tussock Moth	Low to High	Apply at least 2-3 weeks before the pest has historically been present. Consult with a local extension agent for when this will occur in your area.
Shoot, Stem Trunk and Branch	Flatheaded Borers (such as adult and larvae of Bronze Birch Borer ² , Emerald Ash Borer and Two-lined Chestnut Borer ²) Tent Caterpillars (such as Eastern, Forest, Pacific and Western) Western Spruce Budworm Winter Moth		For optimal control, apply at least 30 days before historical egg hatch or adult flight and to trees whose vascular tissue is not damaged. If vascular tissue is damaged or plugged by insect galleries, nematodes or fungi, uniform treatment and control may not be achieved.
Shoot, Stem Trunk and Branch (continued)	Clearwing Borers (such as Ash and Sequoia Pine Pitch Tube Moth) Ambrosia Beetles ² Cynipid Gall Wasps ² Pinewood Nematode Roundheaded Borers (excluding Asian Longhorn Beetles) Scolytids (Bark Beetles) <i>Ips</i> Engraver Beetles, Mountain Pine Beetle, Southern Pine Beetle, Spruce Beetle, Western Pine Beetle	Low to High Medium to High	

¹Use medium to high rates for remedial and longer residual control.

²Not registered for use in California

Compatibility: Do not mix BOXER™ Insecticide-Miticide [this product] before injection with other products such as insecticides, fungicides, plant growth regulators, surfactants, adjuvants and fertilizers with labels indicating that the other product should not be mixed with BOXER™ Insecticide-Miticide [this product]. If there is no prior experience with a particular tank mix, check the physical compatibility by making a small clear jar test using correct proportions to be tank mixed.

Restriction: Do not apply to trees that may be harvested for food consumption by humans or used in animal feed.

{Optional Use Directions “B”}

Use Rates

Use as formulated or dilute with equivalent 1 to 3 volumes of water or more, as necessary.

Tree Diameter (DBH) (Inches)	Low (mL product/tree)	Medium (mL product/tree)	High (mL product/tree)
4 to 6	15	25	50
7 to 9	20	40	80
10 to 12	30	55	110
13 to 15	35	70	140
16 to 18	42	85	170
19 to 21	50	100	200
22 to 24	-	115	230
25 to 27	-	130	260
28 to 30	-	145	290
31 to 33	-	160	320
34 to 36	-	175	350
37 to 39	-	190	380
40 to 42	-	205	410
43 to 45	-	220	440
46 to 48	-	235	470
49 to 51	-	250	500
52 to 54	-	265	530
55 to 57	-	280	560
58 to 60	-	295	590
61 to 63	-	310	620
64 to 66	-	325	650
67 to 69	-	340	680
70 to 72	-	355	710

The use of low, medium and high rates is based on the professional judgement of the applicator as to what constitutes a low, medium or high infestation. Higher rates tend to provide a longer residual and control of more difficult-to-control insects. See **Target Pests** table for additional information in choosing the amount of product to apply.

Additional Directions for Application in Trees

Tree Tissue	Target Pest	Application Rate Range ¹	Comments
Seed and Cone	Cone Beetle² (<i>Conophthora</i> spp.) Pine Cone Seed Bug (suppression of <i>Leptoglossus</i> and <i>Tetyra</i> spp. in the year of treatment) Pine Coneworm (<i>Dioryctria</i> spp.)	Medium to High	For optimal control, apply in the fall for early season pests or at least 30 days before insect attack.
Bud and Leaf	Aphid² Bagworm Conifer Mites² Fall Webworm Gypsy Moth Honeylocust Plant Bug	Low to High	Apply at least 2-3 weeks before the pest has historically been present. Consult with a local extension agent for when this will occur in your area.

	Japanese Beetle Leafminers (such as <i>Coleoptera</i> , <i>Hymenoptera</i> <i>Lepidoptera</i>) Mimosa Webworm Oak Worm Pine Needle Scale Red Palm Mite Sawfly (such as Elm, Pine) Tussock Moth		
Shoot, Stem Trunk and Branch	Flatheaded Borers (such as adult and larvae of Bronze Birch Borer ² , Emerald Ash Borer and Two-lined Chestnut Borer ²) Tent Caterpillars (such as Eastern, Forest, Pacific and Western) Western Spruce Budworm Winter Moth		For optimal control, apply at least 30 days before historical egg hatch or adult flight and to trees whose vascular tissue is not damaged. If vascular tissue is damaged or plugged by insect galleries, nematodes or fungi, uniform treatment and control may not be achieved.
	Clearwing Borers (such as Ash and Sequoia Pine Pitch Tube Moth)		
Shoot, Stem Trunk and Branch (continued)	Ambrosia Beetles² Cynipid Gall Wasps² Pinewood Nematode Roundheaded Borers (excluding Asian Longhorn Beetles) Scolytids (Bark Beetles) <i>Ips</i> Engraver Beetles, Mountain Pine Beetle, Southern Pine Beetle, Spruce Beetle, Western Pine Beetle	Medium to High	

¹Use medium to high rates for remedial and longer residual control.

²Not registered for use in California

Compatibility: Do not mix BOXER™ Insecticide-Miticide [this product] before injection with other products such as insecticides, fungicides, plant growth regulators, surfactants, adjuvants and fertilizers with labels indicating that the other product should not be mixed with BOXER™ Insecticide-Miticide [this product]. If there is no prior experience with a particular tank mix, check the physical compatibility by making a small clear jar test using correct proportions to be tank mixed.

Restriction: Do not apply to trees that may be harvested for food consumption by humans or used in animal feed.

Storage and Disposal

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

Pesticide Storage: Store in original container in a cool, dry place away from children and pets. Keep from freezing. **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:** Non-refillable container; do not reuse or refill this container. Offer for recycling if available. Promptly clean container after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds then pour rinsate into application equipment or a mix tank or store rinsate for use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times, then offer the container for recycling, if available; or puncture and dispose of in a sanitary landfill; or by incineration, if allowed by local and state authorities. Stay out of smoke from burning container.

{Optional Low-Pressure Injection Technology Use Directions}

Factors Affecting Application: Applications are most effective when made prior to insect infestation and in conjunction with good cultural management practices. The species and health of the tree, as well as local environmental conditions, will determine the rate of uptake when using low-pressure injection technology.

Environmental Conditions: This technology relies on the natural uptake rate of the tree; and thus, factors that affect the transpiration rate can greatly affect the uptake rate. Transpiration is dependent on a number of factors, such as soil moisture/temperature, ambient temperature and time of day. For optimum uptake, apply when soil moisture is adequate and soil temperatures are above 45°F. Preferred conditions for injections are morning to early afternoon hours with warm temperatures (55°F to 85°F/13°C to 30°C) accompanied by low humidity, clear skies and a slight breeze. Sunny conditions along with moist soil and a well-hydrated tree will also increase the transpiration rate and will therefore improve uptake. Conversely, cool temperatures, cloudy and/or evening skies and trees under moisture stress will slow down the uptake rate. Extreme heat and cold temperatures will adversely affect rates as well.

Trees that have a healthy vascular system will have correspondingly higher uptake rates. Trees in advanced stages of pest development may not respond to treatment, as vascular plugging caused by disease inhibits transpiration. If the device has not started to absorb within one hour consider removing the device (following the proper sequence provided in the removal instructions) and drill a new hole in a different area of the trunk and inject again. The injection devices need to be evenly placed at points on the trunk free of visible decay areas and wounds from the point of injection to where branching begins. If the device has not started to absorb within one hour after the second attempt, the vascular system of the tree may be too compromised for treatment and there is significant decay in that local injection areas.

Do not inject trees that are drought stressed. Applications to drought- or heat-stressed trees may result in injury to tree tissue, poor treatment and subsequently poor control. Avoid treating trees that are moisture-stressed or suffering from herbicide damage.

Do not inject trees that are in a state of dormancy.

Monitor Tree Health and Pest Infestations: Effective injection treatment is favored by a full canopy (i.e., leaves) and a healthy vascular system. Once these tissues are compromised by pest damage (larval galleries, defoliation, leaf mining, etc.) an effective and uniform application of BOXER™ Insecticide-Miticide [this product] may be difficult to achieve and subsequent control may be poor. For optimum results, treat at least 2 to 3 weeks before pests historically infest the host tree. As a result of systemic movement and longevity of BOXER™ Insecticide-Miticide [this product] in trees, the interval may be extended much earlier to 6 months should tree dormancy, adverse weather, management, asynchronous life cycle of pests, etc., allow earlier application timing.

BOXER™ Insecticide-Miticide [This product] may also be effective as a remedial treatment against some pests, such as those with slower development or if multiple life stages are susceptible to Emamectin Benzoate. Pests that attack the stem and branches, such as clearwing borers, may disrupt vascular tissue resulting in poor distribution in an infested tree. However, control may be achieved if larvae come into contact or feed on tissues treated with BOXER™ Insecticide-Miticide [this product].

Application Instructions

Injection dosages are based on the Diameter (inches or centimeters) of the tree at Breast Height (“DBH”). DBH is the outside bark diameter of the trunk at 4.5 feet (1.37 m) above the ground on the uphill side of the tree. For the purposes of determining breast height, the ground includes the duff layer that may be present, but does not include unincorporated woody debris that may rise above the ground line.

The diameter is determined by measuring the circumference of the tree at DBH and dividing the circumference (in inches) by three (3). To determine DBH for multi-stemmed woody ornamentals, measure the DBH for each stem or branch and add together for the total DBH per tree (**Figure 1**).

Number of Injection Devices Required for Treatment: Take the DBH of the tree and divide by five (5) to determine the appropriate number of devices to adequately treat the tree at the desired application rate. **Do not** treat newly established trees less than 5" DBH or 15" in circumference.

In the event that the tree has multiple trunks that separate less than three (3) feet from the ground (i.e., avocado, citrus, peach, etc.) each individual trunk must be treated separately to ensure equally homogenous distribution of solution to all parts of the tree. In this instance, each individual trunk must be measured in the same way as if the trunks were standing individually (**Figure 1**).

Refer to the **Application Rate/Number of RTU Injection Devices** chart. **Do not** exceed calculated number of RTU injection devices per tree as injury may occur.

Preparing the Holes: To ensure an equal and homogenous delivery of Emamectin Benzoate to all parts of the tree's branching structure, evenly space the required number of holes around the tree's circumference. Hole placement can range from lowest point at the root flare to highest point of chest height (approximately 4.5 ft. (1.358 m) above the ground). Injection holes must be at least 20" (50.8 cm) below the lowest branch on the trunk. The preferred method is to inject at the base of the tree, within 12" (30.48 cm) of the soil. Prepare injection sites in healthy wood free from any defects such as old wounds or decayed areas. Avoid any placement of devices in between the root flare where there is tight compressing of the bark and cambium tissue.

Using an electric drill, select a 15/64" (0.5842 cm) fast spiral drill bit (for optimal performance, a high-helix drill bit is recommended). It is necessary to drill holes into the tree deep enough to reach the tree's vascular system for translocation of Emamectin Benzoate throughout the tree. Make injection holes at least 1/2 to 3/4 inch into healthy xylem (white wood) with actual depth up to 2 inches (5.08 cm) or more from the outer trunk surface, depending upon the tree species and outer bark thickness. For conifer species with high resin pressure, drill holes higher on the trunk (36-48" or 91.44-121.92 cm) and to a deeper drill depth of 2+ inches (5.08+ cm).

For optimal device performance, to minimize leakage and improve holding capacity of the injector be sure to:

1. Use clean, sharp drill bits;
2. Slightly angle depth of hole downwards;
3. Make one clean drill entrance into the tree (i.e., avoid multiple in-and-out motions of drill bit in hole) to reduce shavings' residual left inside the hole (**Figure 2**); and
4. Follow good application practices by disinfecting drill bits prior to use on each tree to minimize the spread of disease where known infections occur.

Inserting the Connector: Once the injection site is drilled, insert the longer and thicker part of the connector into the tree hole; secure its placement by pushing and twisting of hand, or by gently tapping the connector with a nylon hammer or rubber mallet. Insert the connector only to the point where it fits snugly in the hole. **Do not** force the connector too deep into the hole. Be sure to leave approximately 1/2" (1.27 cm) of open chamber at the end of the connector to allow the solution to collect and be pulled through the vascular system of the tree (**Figure 3**).

Connecting the RTU Injection Device: Remove the colored device cap and connect the RTU Injection Device to the connector by firmly pushing the connector through the membrane of the device top. To ensure the device is securely inserted, slightly twist and gently force the RTU Injection Device until it snaps into final position. The RTU Injection Device can be placed upright, sideways or upside-down on the connector depending upon the placement of the connector on the tree (**Figure 4**).

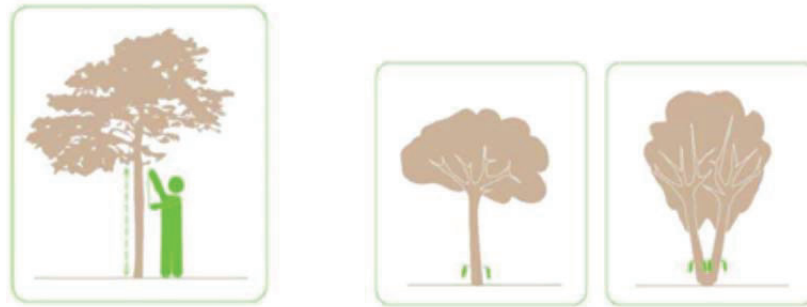
Resinous Conifers: In resinous conifers, such as pine and spruce, start the injection immediately after drilling into the sapwood. A prolonged delay may reduce uptake due to resin flow into the opening.

Removing the RTU Injection Device: When the RTU Injection Device is emptied, remove the device from its connector then remove the connector from the tree. Gently shake the device to ensure all contents have been injected. If there is remaining solution, re-insert the connector and connect the device for further uptake. **Note:** The RTU Injection Device membrane will re-seal itself to avoid any leakage or spillage until it is re-penetrated with the connector (**Figure 5**).

It is not necessary to treat the drill holes with wound paint or other sealing compounds.

Retreatment: At the time of initial application, make note of the health level of each tree. Re-evaluate level in treated trees at 12-month intervals to determine the need for additional treatment. Consider applying preventative applications 12-36 months after the initial injection. Trees in high pest pressure areas or highly valued trees should be evaluated for retreatment 12 months after each treatment. Follow application procedures described above for repeat injections; new drill holes will be required for subsequent treatment. To ensure proper intake equally stagger the holes in subsequent applications.

Figure 1: When making a determination for the application site using the RTU Injection Device, consider trunk configuration.



- A. Single trunk trees: The RTU Injection Device can be injected anywhere from the root flare to at least 20" (50.8 cm) below the branches, preferably at the base of the tree, within 12" (30.48 cm) of the soil.
- B. Multi-stem trees: Be sure to calculate the combined total diameter of the stems and install the devices evenly between the stems, preferably at the base of the tree, within 12" (30.48 cm) of the soil.

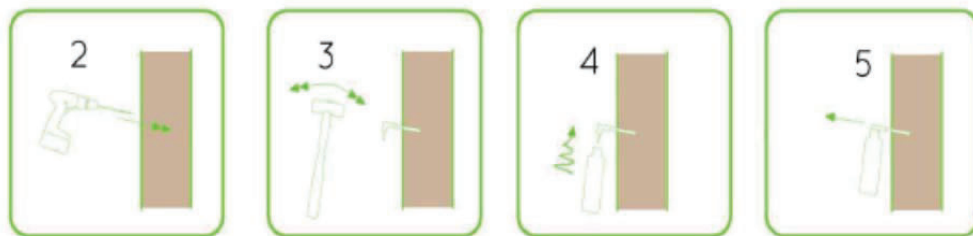


Figure 2: Using an electric drill, select a 15/64" (0.5842 cm) fast-spiral high-helix drill bit and drill a hole 2" (5.08 cm) deep slightly angled downwards. Hole depth will vary depending on bark thickness. Hole placement can range from injection at the root flare to chest height (approximately 4.5 ft. (1.368 m) above the ground) remaining at least 20" (40.8 cm) below lowest branch. The preferred method is to inject at the base of the tree within 12" (30.48 cm) of the soil.

Figure 3: Insert the longer and thicker branch of the connector into tree hole and secure its placement by pushing and twisting of hand OR by gently tapping the connector with a nylon hammer or rubber mallet.

Figure 4: Remove colored cap and connect RTU Injection Device to the connector by firmly pushing the connector through the membrane of the device top. To ensure the device is securely inserted, slightly twist and snap the device into final position.

Figure 5: When the device is emptied, (1) first remove the device from its connector; (2) remove the connector from the tree. Gently shake the device to ensure all contents have been injected. If there is any remaining solution, re-insert the connector and connect the device for further uptake. Uptake rate will vary and there is no need to cover the holes – the tree will heal naturally. **Note:** The RTU Injection Device membrane will re-seal itself to avoid any leakage or spillage until it is re-penetrated with the connector.

**Use Rates
 (25 ml RTU Injector)
 Application Rate/RTU Injector Table**

Tree Diameter (DBH) (Inches)	Circumference (Inches)	Number of RTU Injectors	Application Rate	
			fl oz	mls
4 to 6	12 to 18	1	0.8	25
7 to 9	21 to 27	2	1.7	50
10 to 12	30 to 36	3	2.5	75
13 to 15	39 to 45	3	2.5	75
16 to 18	48 to 54	4	3.4	100
19 to 21	57 to 63	4	3.4	100
22 to 24	66 to 72	5	4.2	125
25 to 27	75 to 81	6	5.1	150
28 to 30	84 to 90	6	5.1	150
31 to 33	93 to 99	7	5.9	175
34 to 36	102 to 108	7	5.9	175
37 to 39	111 to 117	8	6.8	200
40 to 42	120 to 126	9	7.6	225
43 to 45	129 to 135	9	7.6	225
46 to 48	138 to 144	10	8.4	250
49 to 51	147 to 153	10	8.4	250
52 to 54	156 to 162	11	9.3	275
55 to 57	165 to 171	12	10.1	300
58 to 60	174 to 180	12	10.1	300
61 to 63	183 to 189	13	11.0	325
64 to 66	192 to 198	13	11.0	325
67 to 69	201 to 207	14	11.8	350
70 to 72	210 to 216	15	12.7	375

Additional Directions for Application in Trees

Tree Tissue	Target Pest	Comments
Seed and Cone	Cone Beetle ¹ (<i>Conophthora</i> spp.) Pine Cone Seed Bug (suppression of <i>Leptoglossus</i> and <i>Tetyra</i> spp. in the year of treatment) Pine Coneworm (<i>Dioryctria</i> spp.)	For optimal control, apply in the fall for early season pests or at least 30 days before insect attack.
Bud and Leaf	Aphid ¹ Bagworm Conifer Mites ¹	Apply at least 2-3 weeks before the pest has historically been present. Consult with a local extension agent for when this will

	Fall Webworm Gypsy Moth Honeylocust Plant Bug Japanese Beetle Leafminers (such as <i>Coleoptera</i> , <i>Hymenoptera</i> , <i>Lepidoptera</i>) Mimosa Webworm Oak Worm Pine Needle Scale Red Palm Mite Sawfly (such as Elm, Pine) Tussock Moth	occur in your area.
Shoot, Stem Trunk and Branch	Flatheaded Borers (such as adult and larvae of Bronze Birch Borer ¹ , Emerald Ash Borer and Two-lined Chestnut Borer ¹) Tent Caterpillars (such as Eastern, Forest, Pacific and Western) Western Spruce Budworm Winter Moth Clearwing Borers (such as adult and larvae of Bronze Birch Borer, Emerald Ash Borer ¹ and Two-lined Chestnut Borer ¹) Ambrosia Beetles ¹ Cynipid Gall Wasp ¹ Pinewood Nematode Roundheaded Borers (excluding Asian Longhorn Beetles)	For optimal control, apply at least 30 days before historical egg hatch of adult flight and to trees without vascular tissue damage. If vascular tissue is damaged or plugged by insect galleries, nematodes or fungi, uniform treatment and control may not be achieved.

¹Not registered for use in California.

Restriction: Do not apply to trees that may be harvested for food consumption by humans or used in animal feed.

Storage and Disposal

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

Pesticide Storage: Store in original container in a cool, dry place away from children and pets. Keep from freezing. **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:** Non-refillable container; do not reuse or refill this container. Offer for recycling if available.

{Optional Graphics}



[Emerald Ash Borer Winter Moth Japanese Beetle]

[] Denotes alternate/optional verbiage
 { } Denotes language that does not appear on market labeling