

238-605

01/30/2009

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U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Pesticide Programs  
Registration Division (H7505C)  
1200 Pennsylvania Avenue, N.W.  
Washington, D.C. 20460

EPA Reg. Number:  
228-605

Date of Issuance:  
JAN 30 2009

Term of Issuance:  
Conditional

Name of Pesticide Product:  
Nufarm Permethrin Pro

NOTICE OF PESTICIDE:

☒ Registration  
☐ Reregistration

(Under FIFRA as amended)

Name and Address of Registrant (include ZIP Code):

Nufarm Americas, Inc.  
150 Harvester Drive, Suite 200  
Burr Ridge, IL 60527

~~Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.~~

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is **conditionally** registered in accordance with FIFRA sec. 3(c)(7)(A), provided that:

1. You will submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product under FIFRA section 4.
2. You will make the following label changes before you release the product for shipment:
  - a) Revise the EPA Registration Number to read "EPA Reg. No. 228-605."
  - b) Revise Precautionary Statements to read as follows:
    1. Replace "Wash thoroughly with soap and water after handling" with "Wash thoroughly with soap and water handling and before eating, drinking, chewing gum, or using tobacco".
    2. Move "Do not allow people or pets on treated surfaces until the spray has dried. Do not touch treated surfaces until the spray has dried" Directions for Use section.
  - c) Add instructions for "Tip N Measure" containers. These instructions are required in all sizes, 1 pint to 2.5 gallons if the cap closure is a Rexam FO.

Signature of Approving Official:

*Richard Gebken*  
Richard Gebken Interim Product Manager 13  
Insecticide Branch/Registration Division (7505P)

Date:

*Jan 30, 2009*

Enclosure

- d) On pages 14 & 15, delete "Recommended" from the "Recommended Application Rates for Ornamental Plants and Trees" table.
  - e) On page 16 delete "Common" from the "Common Indoor Insect Pests Controlled by Nufarm Permethrin Pro" table.
  - f) Under the instructions for Preconstruction Lumber and Log Application limit the use site to "unseasoned lumber and logs".
  - g) On page 17, replace "Overhead space spray system – 4 11. oz." with "Overhead space spray system – 4fl. oz."
  - h) Add, "If recycling is not available puncture or dispose of in a sanitary landfill or incineration or if allowed by state and local authorities by burning. If burned stay out of smoke" after "Offer for recycling if available" under *Container Disposal* section.
3. Please submit three (3) copies of your final printed labeling before releasing the product for shipment. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product bearing amended labeling constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records.

If you have any questions regarding this action, please contact BeWanda Alexander at (703) 305-7460.

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

228-605

# Nufarm Permethrin Pro

For use by commercial applicators as an insecticide on ornamentals grown in greenhouse and interiorscapes for perimeter insect control on lawns, ornamental trees and shrubs around residential, institutional, public, commercial and industrial buildings, parks, recreational areas and athletic fields, and for use on buildings/structures.

For control of subterranean termites: For use by individuals/ firms licensed or registered by the state to apply termiticide products. States may have more restrictive requirements regarding qualifications of persons using this product. Consult the pest control regulatory agency of your state prior to use of this product.

## Active Ingredient

Permethrin*	36.8%
Other Ingredients**	63.2%
TOTAL	100.0%

\*cis/trans ratio: Max. 42% (±) *cis* and min. 58% (±) *trans*

\*\*Contains petroleum distillates.

Contains 3.2 pounds permethrin per gallon as an emulsifiable concentrate.

**KEEP OUT OF REACH OF CHILDREN**

## CAUTION

FIRST AID	
IF SWALLOWED	<ul style="list-style-type: none"> <li>• Immediately call a poison control center or doctor.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give any liquid to the person.</li> <li>• Do not give anything by mouth to an unconscious person.</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 IN EYES	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 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 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>
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. <b>FOR CHEMICAL EMERGENCY:</b> Spill, leak, fire, exposure, or accident call CHEMTREC 1-800-424-9300	
NOTE TO PHYSICIAN: Contains petroleum distillates — vomiting may cause aspiration pneumonia	

(See attached booklet for additional precautionary statements)

EPA Reg. No. 228-

## Manufactured for:

Nufarm Americas Inc.  
150 Harvester Drive  
Burr Ridge, IL 60527

EPA Est. No.

Net Contents:

**PRECAUTIONARY STATEMENTS**  
**Hazards to Humans & Domestic Animals**  
**CAUTION**

Harmful if swallowed, inhaled or absorbed through the skin. Avoid contact with skin, eyes or clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse. Do not allow people or pets on treated surfaces until the spray has dried. Do not touch treated surfaces until the spray has dried.

**Environmental Hazards**

This product is highly toxic to bees exposed to treatment and for 3 days following treatment. Do not apply this pesticide to blooming, pollen-shedding or nectar-producing parts of plants if bees may forage on the plants during this time period. The 3 day limitation does not apply if the applicator operates in a state with a formal, state-approved bee protection program, and the applicator follows all applicable requirements of the state-approved program designed to ensure that managed bees are not present in the treatment area during this time period.

This product is extremely toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of equipment washwaters. Do not apply when weather conditions favor drift from treated areas,

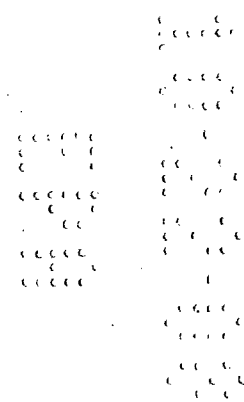
For Treatment of Preconstruction Lumber and Logs: Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National-Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

**Physical/Chemical Hazards**

Do not use or store near heat or open flame.

**Personal Protection Equipment (PPE)**

All pesticide handlers (mixers, loaders, and applicators) must wear long-sleeved shirt and long pants, socks, shoes, and chemical-resistant gloves. After the product is diluted in accordance with label directions for use, and/or when mixing and loading using a closed spray tank transfer system such as U-Turn, or an in-line injector system, shirt, pants, socks, shoes, and waterproof gloves are sufficient. In addition: all pesticide handlers must wear a respiratory protection device approved by the Mine Safety and Health Administration (MSHA)/National Institute for Occupational Safety and Health (NIOSH) such as TC-23C, TC-21C, TC-19C, TC-13F, and TC-14G when working in a non-ventilated space; all pesticide handlers must wear protective eyewear when working in a non-ventilated space or when applying termiticide by rodding or sub-slab injection.



### 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 statement on *this label about personal* protective equipment (PPE). The requirements in this box only apply to uses on this product that are covered by Worker Protection Standard.

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.

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

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

- Coveralls over long-sleeved shirt and long pants.
- Chemical-resistant gloves, such as barrier laminate or butyl rubber.
- 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 and greenhouses.

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

### DIRECTIONS FOR USE

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

States may have more restrictive requirements regarding qualifications of persons using this product. Consult your State Pest Control Regulatory Agency prior to use of this product.

### GENERAL USE INFORMATION

#### Important

Nufarm Permethrin Pro is toxic to fish. Exercise care when making applications near ponds, lakes, streams, reservoirs and other aquatic environments where fish are present.

Nufarm Permethrin Pro may also be used as a broadcast or spot application in crawl spaces and indoors to carpeting, wood, tile, concrete or other structural building materials as a crack and crevice injection, or paint-on treatment. Consult tables for specific use instructions.

Nufarm Permethrin Pro can be applied to interior plantscapes, and landscape ornamental gardens including parks, lawns and grounds.

For advice concerning current control practices with relation to specific local conditions, consult your local State Cooperative Extension or regulatory agencies.

Nufarm Permethrin Pro is formulated as an emulsifiable concentrate (EC) formulation and is to be diluted with water and applied as an emulsion. When tank mixing as an emulsion with other products, observe all precautions and limitations on the labels of each product in the mixture.

Nufarm Permethrin Pro can be tank-mixed with pyrethrin-containing products or Insect Growth

Regulators (IGRs). Do not tank mix with dichlorvos (DDVP) or other fumigant products. Do not tank mix when applied as a soil termiticide.

### **Applications for the Control of Subterranean Termites**

#### **General Application Instructions**

Nufarm Permethrin Pro acts as an insecticidal barrier to control and prevent subterranean termite (*Coptotermes*, *Heterotermes*, *Reticulitermes* and *Zootermopsis*) infestations in and around structures. For effective control the insecticide emulsion must be adequately dispersed in the soil to establish a barrier between the structure and the termites in the soil. To establish an effective insecticidal barrier with this product the proper control practices and application techniques should be selected by a trained service technician familiar with current termite control practices.

When treating adjacent to an existing structure, the applicator must check the area to be treated, and immediately adjacent areas of the structure, for visible and accessible cracks and holes to prevent any leaks or significant exposures to persons occupying the structure. People present or residing in the structure during application must be advised to remove their pets and themselves from the structure if they see any signs of leakage. After application, the applicator is required to check for leaks. All leaks resulting in the deposition of termiticide in locations other than those prescribed on this label must be cleaned up prior to leaving the application site. Do not allow people or pets to contact contaminated areas or to reoccupy contaminated areas of the structure until the clean-up is completed.

When applying Nufarm Permethrin Pro indoors, procedures should include structural design consideration and variable post-application effects from heating, ventilation and air conditioning systems (HVAC)

Outdoor application procedures should include consideration of such variable factors affected by soil type, soil compaction, grade conditions, utilities and, location and type of domestic water supply.

Contamination of public and private water supplies must be avoided by using anti-backflow equipment or procedures to prevent siphonage of insecticide into water supplies.

Do not contaminate wells or cisterns.

#### **Structures With Wells/Cisterns Inside Foundations**

Structures that contain wells or cisterns within the foundation of a structure can only be treated using the following techniques:

1. Do not treat soil while it is beneath or within the foundation or along the exterior perimeter of a structure that contains a well or cistern. The treated backfill method must be used if soil is removed and treated outside/away from the foundation. The treated backfill technique is described as follows:
  - (a) Trench and remove soil to be treated onto heavy plastic sheeting or similar material or into a wheelbarrow.
  - (b) Treat the soil at the rate of 4 gallons of dilute emulsion per 10 linear feet per foot of depth of the trench, or 1 gallon per 1.0 cubic feet of soil. See Mixing Directions section of the label.
  - (c) After the treated soil has absorbed the diluted emulsion, replace the soil into the trench.
2. Treat infested and/or damaged wood in place using an injection technique such as described in the Control of Wood infesting Insects section of this label.

#### **Structures With Adjacent Wells/Cisterns And/Or Other Water Bodies**

Applicators must inspect all structures with nearby water sources such as wells, cisterns, surface ponds, streams, and other bodies of water and evaluate, at a minimum, the treatment recommendations listed below, prior to making an application.

1. Prior to treatment, if feasible, expose the water pipe(s) coming from the well to the structure, if the pipe(s) enter the structure within 3 feet of grade.
2. Prior to treatment applicators are advised to take precautions to limit the risk of applying the termiticide into subsurface drains that could empty into any bodies of water. These precautions include evaluating whether application of the termiticide to the top of the footer may result in contamination of the subsurface drain. Factors such as depth to the drain system and soil type and degree of compaction

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- Application Rate:** Use a 0.5% emulsion for subterranean termites. For other pests on the label use specific listed rates

To establish an effective insecticidal barrier with this product, the service technician must be familiar with current termite control practices such as: trenching, rodding, sub-slab injection, coarse fan spraying of soil surfaces, crack and crevice (void) injection, excavated soil treatment, and brush or spray applications to infested or susceptible wood. These techniques must be correctly employed to prevent or control infestations to subterranean termites such as *Coptotermes*, *Heterotermes*, *Reticulitermes*, and *Zootermopsis*. The biology and behavior of the species involved should be considered by the service technician in determining which control practices to use to eliminate or prevent termite infestation.

Contamination of public and private water supplies must be avoided by following these procedures: Use anti-backflow equipment or procedures to prevent siphonage of insecticide into water supplies. Do not contaminate cisterns or wells.

Do not treat while precipitation is occurring.

Follow all State and Local specifications for recommended treatment distances of wells and aquatic habitat.

**Note:** Crawlspace are considered inside of structure.

**Mixing Instructions:** To produce an emulsion, mix Nufarm Permethrin Pro with water only. For the desired application rate, use the chart below to determine the amount of product required for a given volume of finished emulsion.

**Nufarm Permethrin Pro  
Rate/Volume Conversion Chart**

Desired Gallons of Finished Emulsion	Emulsion Concentration (Nufarm Permethrin Pro + Water)		
	0.5%	1.0%	2.0%
1	1 2/3 fl. oz. + 125 1/3 fl. oz. water	3 1/3 fl. oz. + 124 2/3 fl. oz. water	6 2/3 fl. oz. + 121 1/3 fl. oz. water
5	8 1/3 fl. oz. + 4 gal, 119 2/3 fl. oz. water	16 2/3 fl. oz. + 4 gal, 111 1/3 fl. oz. water	33 1/3 fl. oz. + 4 gal, 94 2/3 fl. oz. water
10	16 2/3 fl. oz. + 9 gal, 111 1/3 fl. oz. water	33 1/3 fl. oz. + 9 gal, 94 2/3 fl. oz. water	66 2/3 fl. oz. + 9 gal, 61 1/3 fl. oz. water
19	0.25 gal + 18.75 gal water	0.5 gal + 18.5 gal water	1.0 gal + 18 gal water
38	0.50 gal + 37.5 gal water	1.0 gal + 37 gal water	2.0 gal + 36 gal water
58	0.75 gal + 57.25 gal water	1.5 gal + 56.5 gal water	3.0 gal + 55 gal water
96	1.25 gal + 94.75 gal water	2.5 gal + 93.5 gal water	5.0 gal + 91 gal water
192	2.5 gal + 189.5 gal water	5.0 gal + 187 gal water	10.0 gal + 182 gal water

See Application Volume Considerations section for Pre- & Post-Construction Applications below.

Common Units of Measure:

1 pint = 16 fluid ounces (oz.)

1 gallon = 4 quarts 8 pints = 128 oz.

Mix the termiticide use dilution in the following manner:

1. Fill tank 1/4 to 1/3 full.
2. Start pump to begin by-pass agitation and place end of treating tool in tank to allow circulation through hose.
3. Add appropriate amount of Nufarm Permethrin Pro. (See Rate/Volume Conversion Chart)
4. Add remaining amount of water.
5. Let pump run and allow recirculation through the hose for 2 to 3 minutes.

**Application Volume:** To provide maximum control and protection against termite infestation apply the specified volume of the finished water emulsion and active ingredient as set forth in the directions for use section of this label. If soil will not accept the labeled application volume, the volume may be reduced provided there is a corresponding increase in concentration so that the amount of active ingredient applied to the soil remains the same.

**NOTE:** Large reductions of application volume reduce the ability to obtain a continuous barrier. Variance is allowed when volume and concentration are consistent with label directed rates and a continuous barrier can still be achieved.

**Pre- and Post-Construction Applications**

**Application Volume Considerations:** Adjustments to application volumes are often needed to ensure thorough and complete coverage in different soil types while keeping the application rate as close as possible to the recommended labeled use rate. Certain types of soils, such as clay, require lower volumes of water due to their low permeability characteristics. In such cases reduced volumes of emulsion can be used while still delivering the recommended concentration of termiticide to the soil (see Rate/Volume Conversion Chart above).

**Application Volume Adjustments:** Where necessary to reduce the application volume for pre- and post-construction treatments, the volume of a 1.0% emulsion may be reduced by 1/2 the labeled volume or a 2.0% emulsion may be applied at 1/4 the labeled volume (see Volume Adjustments for Horizontal and Vertical Applications).



## Pre-Construction Treatment

Nufarm Permethrin Pro may be applied as a vertical and/or horizontal insecticidal barrier to control or prevent infestation of subterranean termites using a 0.5% emulsion.

Prior to each application, applicators must notify the general contractor, construction superintendent, or similar responsible party, of the intended termiticide application and intended sites of application and instruct the responsible person to notify construction workers and other individuals to leave the area to be treated during application and until the termiticide is absorbed into the soil.

**DO NOT APPLY AT A LOWER DOSAGE AND/OR CONCENTRATION THAN SPECIFIED ON THIS LABEL FOR APPLICATIONS PRIOR TO THE INSTALLATION OF THE FINISHED GRADE.**

When treating foundations deeper than 4 feet, apply the termiticide as the backfill is being replaced, or if the construction contractor fails to notify the applicator to permit this, treat the foundation to a minimum depth of 4 feet after the backfill has been installed. The applicator must trench and rod into the trench or trench along the foundation walls and around pillars and other foundation elements, at the rate prescribed from grade to a minimum depth of 4 feet. When the top of the footing is exposed, the applicator must treat the soil adjacent to the footing to a depth not to exceed the bottom of the footing. However, in no case should a structure be treated below the footing.

**Horizontal Barrier:** Pre-construction horizontal termiticide barrier applications are most commonly made to soil that will be covered (i.e., concrete slabs and footings, porches, stairs and crawl spaces). Using a course spray nozzle at low pressure (less than 50 psi) apply 1 gallon of a 0.5% emulsion per 10 square feet. If fill consists of gravel or other course material use a rate of 1.5 gallons of a 0.5% emulsion per 10 square feet (see Volume Adjustment Chart below). If more than 24 hours is expected between the time of application and pouring of the concrete, it is recommended that the site be covered with a water proof barrier (polyethylene).

**Vertical Barrier:** Vertical barriers must be established in areas such as around the base of foundations, plumbing, utility entrances, backfilled soil against foundation walls, and other critical areas.

For a 0.5% rate, apply 4 gallons of dilution per 10 linear feet per foot of depth or 6.4 fluid ounces of Nufarm Permethrin Pro per 10 linear feet of depth from grade to top of footing in sufficient water (no less than 2 gallons or more than 8 gallons) to ensure complete coverage.

1. When trenching and rodding into the trench or trenching, it is important that emulsion reaches the top of the footing. Rod holes **must** be spaced so as to achieve a continuous insecticidal barrier, but in no case more than 12 inches apart.
2. Care should *be taken* to avoid soil wash-out around footing.
3. Trenches need not be wider than 6 inches. Emulsion should be mixed with the soil as it is being replaced in the trench.
4. For a monolithic slab, an inside vertical barrier may not be required.

Hollow block voids may be treated at a rate of 2 gallons of emulsion per 10 linear feet so that the emulsion will reach the top of the footing.

**Volume Adjustments for Horizontal and Vertical  
Nufarm Permethrin Pro Applications**

Application Type	Application Rate		
	0.5% Emulsion	1.0% Emulsion	2.0%* Emulsion
Horizontal (gallons per 10 square ft)	1.0	0.5	0.25
Vertical (gallons per 10 linear ft.)	4.0	2.0	1.0

\* Not recommended for sub-slab injection

## Post-Construction Treatment

Apply Nufarm Permethrin Pro by injection, rodding and/or trenching as a 0.5% emulsion for post-construction treatment. Do not use excessive pressure (above 25 psi) when injecting to avoid soil wash-out around the foundation.

Do not apply emulsion until location of wells, radiant heat pipes, water and sewer lines, and electrical conduits are known and identified. Care must be taken to avoid puncturing and injection into these elements.

**Foundations:** For applications made after the final grade is installed, the applicator must trench and rod into the trench or trench along the foundation walls and around pillars and other foundation elements, at the rate prescribed from grade to the top of the footing. When the footing is more than four (4) feet below grade, the applicator must trench and rod into the trench or trench along the foundation walls at the rate prescribed to a minimum depth of four feet. The actual depth of treatment will vary depending on soil type, degree of compaction, and location of termite activity. When the top of the footing is exposed, the applicator must treat the soil adjacent to the footing to a depth not to exceed the bottom of the footing. However, in no case should a structure be treated below the footing.

**Treating Slabs:** Vertical barrier applications may be established by sub-slab injection within the structure and rodding and trenching / or trenching outside using a treatment rate of 4 gallons of emulsion per 10 linear feet per foot of depth. If necessary, adjust the spacing of the drill holes, or volume required (see Volume Adjustment Chart above) for adequate dispersal of the emulsion in the slab sub-soil.

**Note:** Sub-slab volume adjustments greater than 1% are not recommended. Treatment should not extend below the bottom of the footing. Treat along the outside of the foundation and where necessary beneath the slab on the inside of the foundation walls. Treatment may also be required beneath the slab along both sides of interior footing-supported walls, one side of interior partitions and along all cracks and expansion joints. Horizontal barriers may be established where necessary by long-rodding or by grid pattern injection vertically through the slab. Plug all holes in the interior structure after injection.

1. Drill holes in the slab and/or foundation to allow for the application of a continuous insecticidal barrier no more than 12 inches apart.
2. For shallow foundations (1 foot or less) dig a narrow trench approximately 6 inches wide along the outside of the foundation walls. Do not dig below the bottom of the footing. The emulsion should be applied to the trench and soil at 4 gallons per 10 linear feet per foot of depth as the soil is replaced in the trench.
3. For foundations deeper than 1 foot follow the rates for basements.
4. Exposed soil in bath traps may be treated with a 0.5% emulsion.

## **Basements and Crawl Spaces**

### **Basements**

Where the footing is greater than 1 foot in depth from grade to the bottom of the foundation, application must be made by trenching and rodding into this trench, or injecting at the rate of 4 gallons of emulsion per 10 linear feet per foot of depth. When the footing is more than 4 feet below grade, the applicator may trench and rod into the trench, or trench along foundation walls at the rate prescribed for 4 feet of depth. Rod holes must be spaced so as to achieve a continuous termiticide barrier, but in no case more than 12 inches apart. The actual depth of treatment will vary depending on soil type, degree of compaction, and location of termite activity. However, in no case should a structure be treated below the footing. Sub-slab injection may be necessary along the inside of foundation walls, along cracks and partition walls, around pipes, conduits, piers, and along both sides of interior footing-supported walls.

### **Accessible Crawl Spaces**

For crawl spaces, apply vertical termiticide barriers at the rate of 4 gallons of emulsion per 10 linear feet per foot of depth from grade to the top of the footing, or if the footing is more than 4 feet below grade, to a minimum depth of 4 feet. Apply by trenching and rodding into the trench, or trenching. Treat both sides of foundation and around all piers and pipes. Where physical obstructions, such as concrete walkways adjacent to foundation elements, prevent trenching, treatment may be made by rodding alone. When soil type and/or conditions make trenching prohibitive, rodding may be used. When the top of the footing is exposed, the applicator must treat the soil adjacent to the footing to a depth not to exceed the bottom of the footing. Read and follow the mixing and use direction section of the label if situations are encountered where the soil will not accept the full application volume.

- 1) Rod holes and trenches must not extend below the bottom of the footing.
- 2) Rod holes must be spaced so as to achieve a continuous chemical barrier but in no case more than 12 inches apart.

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- 3) Trenches must be a minimum of 6 inches deep or to the bottom of the footing, whichever is less, and need not be wider than 6 inches. When trenching in sloping (tiered) soil, the trench must be stepped to ensure adequate distribution and to prevent termiticide from running off. The emulsion must be mixed with the soil as it is replaced in the trench.
  - 4) When treating crawl spaces, turn off the air circulation system of the structure until application has been completed and all termiticide has been absorbed by the soil.

#### **Inaccessible Crawl Spaces**

For inaccessible interior areas, such as areas where there is insufficient clearance between floor joists and ground surfaces to allow operator access, excavate, if possible, and treat according to the instructions for accessible crawl spaces. Otherwise, apply one, or a combination of the following two methods.

- 1) To establish a horizontal barrier, apply to the soil surface, 1 gallon of emulsion per 10 sq. ft. overall using a nozzle pressure of less than 25 p.s.i. and a coarse application nozzle (e.g., Delavan Type RD Raindrop, RD-7 or larger, or Spraying Systems Co. 8010LP TeeJet or comparable nozzle). For an area that cannot be reached with the application wand, use one or more extension rods to make the application to the soil. Do not broadcast or power spray with higher pressures.
- 2) To establish a horizontal barrier, drill through the foundation wall or through the floor above and treat the soil perimeter at a rate of 1 gallon of emulsion per 10 square feet. Drill spacing must be at intervals not to exceed 16 inches. Many states have smaller intervals so check state regulations which may apply.

When treating crawl spaces, turn off the air circulation system of the structure until application has been completed and all termiticide has been absorbed by the soil.

It is highly recommended that prior to treatment, inadequately ventilated crawl spaces be brought into compliance with FHA Minimum Property Standards specifying 1 square foot of ventilator opening per 150 square feet of crawl space area.

When treating crawl spaces with plenums, turn off all air circulation systems for the structure until application has been completed and all termiticide has been absorbed by the soil.

Wear respiratory protection when treating crawl spaces.

**Masonry or Hollow Block Voids:** Drill and treat voids in multiple masonry elements of the structure extending from the structure to the soil in order to create a continuous treatment barrier in the area to be treated. Apply at the rate of 2 gallons of emulsion per 10 linear feet of footing using a nozzle pressure of less than 25 p.s.i. When using this treatment, access holes must be drilled below the sill plate and should be as close as possible to the footing as is practical. Care should be exercised not to drill entirely through and into the structure. Treatment of voids in block or rubble foundation walls must be closely examined. Applicators must inspect areas of possible runoff as a precaution against application leakage in the treated areas. Some areas may not be treatable or may require mechanical alteration prior to treatment. All leaks resulting in the deposition of termiticide in locations other than those prescribed on this label must be cleaned up prior to leaving the application site. Do not allow people or pets to contact contaminated areas or to reoccupy the contaminated areas of the structure until the clean up is completed.

In treating voids containing rigid foam insulation, holes must be drilled through the sillplate and through the foam to the base of the footing before the emulsion is applied.

Use low pressure to ensure penetration of the emulsion into the void area between the base of the foam and footer. Slowly remove the spray rod as the emulsion is being delivered, avoiding excess buildup in the foam insulation.

**Note:** When treating behind veneer, care should be taken not to drill beyond the veneer. If concrete blocks are behind the veneer, both the blocks and the veneer may be drilled and treated at the same time.

**Excavation Technique:** If treatment must be made in difficult situations, such as near wells, cisterns, along fieldstone or rubble walls, along faulty foundation walls, or around pipes and utility lines which lead

downward from the structure to a well or pond, application may be made in the following manner:

- a. Trench and remove soil to be treated onto heavy plastic sheeting or similar material.
- b. Treat the soil at the rate of 4 gallons of emulsion per 10 linear feet per foot of depth of the trench. Mix the emulsion thoroughly into the soil taking care to prevent liquid from running off the liner.
- c. After the treated soil has absorbed the liquid emulsion, replace the soil in the trench.

Prior to using this technique near wells or cisterns, consult state, local or federal agencies for information regarding approved treatment practices in your area.

### **Foam Applications**

Nufarm Permethrin Pro emulsion may be converted to a foam, and the foam used to control and prevent termite infestation. When applying the product as either a foam application alone, or in combination with an emulsion treatment, do not exceed the maximum-labeled application rate. Exercise care and safety around electrical utilities. Note location of electrical sources prior to foaming voids to avoid possible shock hazard.

### **Localized Application**

Foam may be used to treat voids to control or prevent localized infestations of: termites, ants, bees, wasps or other arthropods harboring in voids. Application may be made to voids such as: behind veneers, piers (concrete or wood), chimneys into rubble and stone foundations, into block voids, structural voids (i.e., between stud walls), poles, stumps, and wood in crawlspaces using either the foam alone or in combination with liquid emulsion.

Note location of electrical sources prior to foaming voids to avoid possible shock hazards.

### **Application Under Slabs or to Soil in Crawlspaces to Prevent or Control Termites**

Application may be made using Nufarm Permethrin Pro foam alone or in combination with liquid emulsion. The equivalent of at least 4 gallons (6.4 oz. of Nufarm Permethrin Pro concentrate) of 0.5% emulsion per 10 linear feet (vertical barrier), or at least 1 gallon (1.6 oz. of Nufarm Permethrin Pro concentrate) of 0.5% emulsion per 10 square feet (horizontal barrier) must be applied either as emulsion, foam, or a combination of both. For a foam only application, apply Nufarm Permethrin Pro concentrate in sufficient foam concentration and foam volume to deposit 6.4 oz. of concentrate per 10 linear feet or 1.6 oz. of concentrate per 10 square feet. For example, 1 gallon of 2% emulsion generated as foam to cover 10 linear feet is equal to the application of 4 gallons of 0.5% emulsion per 10 linear feet.

Foam and liquid application must be consistent with volume and active ingredient instructions in order to ensure proper application has been made. The volume and amount of active ingredient are essential to an effective treatment. At least 75% of the labeled liquid emulsion volume of product must be applied, with the remaining percent delivered to appropriate areas using foam application. Refer to label and use recommendations of the foam manufacturer and the foaming equipment manufacturer.

Foam applications are generally a good supplement to liquid treatments in difficult areas, but may be used alone in difficult spots.

### **Sand Barrier Installation and Treatment**

Termites can build mud tubes over treated surfaces as long as they have access to untreated soil and do not have to move Nufarm Permethrin Pro-treated soil. Fill in cracks and spaces with builder's or play box sand and treat the sand with Nufarm Permethrin Pro. The sand should be treated as soil following the termiticide rates listed on the Nufarm Permethrin Pro label.

### **Retreatment Intervals**

Retreatment for subterranean termites can only be performed if there is clear evidence of reinfestation or disruption of the barrier due to construction, excavation, or landscaping and/or evidence of the breakdown of the termiticide barrier in the soil. These vulnerable or reinfested areas may be retreated in accordance with application techniques described in this product's labeling. The timing and type of

these retreatments will vary, depending on factors such as termite pressure, soil types, soil conditions and other factors which may reduce the effectiveness of the barrier.

Annual retreatment of the structure is prohibited unless there is clear evidence that reinfestation or barrier disruption has occurred.

### **Pest Control Specialty Applications General Application Instructions**

Nufarm Permethrin Pro has demonstrated excellent plant safety; however, not all cultivars have been tested. Before treating large numbers of plants of a particular cultivar, treat a few plants and observe prior to full scale application.

Use the higher rates for heavy pest infestations. Use sufficient volume to cover plant surface. Higher volumes should be used if arid or drought conditions exist. Repeat applications as necessary to maintain control.

Do not apply more than 2.0 lb. a.i./Acre/Year for lawn and ornamental use.

### **Spray Drift Precautions:**

Nufarm Permethrin Pro may be applied by most conventional ground application sprayers. Exercise care not to apply when wind velocity favors non-target movement or temperature inversions.

Do not apply by air.

Do not apply within 25 feet of lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries, and commercial fish ponds.

### **Chemigation General Information**

Apply this product only through the following types of sprinkler irrigation: center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move irrigation systems. Do not apply this product through any other type of irrigation system.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system.

Crop injury, lack of effectiveness, or illegal residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, you should contact the equipment manufacturer, your local State Extension Service specialists, or other experts.

A person knowledgeable of the chemigation system and responsible for its operation, or person under the supervision of the person responsible, shall shut the system down and make necessary adjustments should the need arise.

The system must contain a functional check valve, vacuum relief valve and low-pressure drain appropriately located on the irrigation pipeline, upstream from the point of pesticide introduction, to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

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.

The system 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 fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

Nufarm Permethrin Pro should be applied continuously for the duration of the water application. Nufarm Permethrin Pro should be diluted in sufficient volume to ensure accurate application over the area to be treated. When using chemigation, a minimum of 0.5 inch per acre of irrigation water is recommended. Agitation generally is not required when a suitable carrier is used.

### **Underground Structures and Services**

**Posts, Poles, and Other Constructions:** Previously installed poles and posts may be treated by sub-surface injection. Treat on all sides to create a continuous insecticidal barrier around the pole. Use 1 gallon of a 0.5% emulsion per foot of depth for poles and posts less than six inches in diameter. For larger poles, use 1.5 gallons of emulsion per foot of depth. Apply to a depth of 6 inches below the bottom of the wood. For larger diameter constructions, use 4 gallons of emulsion per 10 linear feet per foot of depth.

To control wood infesting insects, such as, termites, ants, carpenter ants, wood infesting beetles (Old House Borer, Powder Post), bees, wasps, hornets and yellow-jackets in posts, poles and other wood constructions in and around structures, paint on, spot spray, or fan spray a 0.5% emulsion to voids and galleries in damaged wood and in spaces between wooden members of a structure and between wood and foundation where wood is vulnerable. Plastic sheeting must be placed immediately below overhead areas that are spot treated except for soil surfaces in crawlspaces. Application may be made to inaccessible areas by drilling, and then injecting emulsion with a crack and crevice injector into the damaged wood or void spaces. This type of application is not intended to be a substitute for soil treatment, mechanical alteration or fumigation to control extensive infestation of wood-infesting insects.

**Control of Bees and Wasps Indoors:** To control bees, wasps, hornets, and yellow jackets apply a 0.5% emulsion. Application should be made in the late evening when insects are at rest. Spray liberally into hiding and breeding places, especially under attic rafters, contacting as many insects as possible. Repeat as necessary.

Termite carton nests in trees or building voids may be injected with 0.5% to 1.0% emulsion. Multiple injection points to varying depths may be necessary. It is desirable to physically remove carton nest material from building voids when such nests are found.

**Important:** Do not apply emulsion until location of heat pipes, ducts, water and sewer lines and electrical conduits are known and identified. Care must be taken to avoid puncturing and injection into these structural elements. Do not apply into electrical fixtures, switches, or sockets.

**Services:** Nufarm Permethrin Pro may be applied as a soil treatment to control termites and ants from attacking underground services, such as, utility lines, pipes, cables, conduits and wires.

Apply 2 to 4 gallons of a 0.5% emulsion per 10 linear feet to the bottom of the trench and allow to soak into the soil. Lay services on the treated soil and cover with approximately 2 inches of fill soil. Apply another 2 to 4 gallons per 10 linear feet over the soil surface to complete the treatment barrier. Volume adjustments for non-porous soils can be made by using 1 to 2 gallons of a 1.0% emulsion per 10 linear feet of trench.

Do not treat electrically active underground services.

### **Pest Control on Outside Surfaces and Around Buildings**

**Broadcast Treatment for Control of Nuisance Pests:** Apply using a 0.5% emulsion as a residual spray to outside surfaces of buildings including, but not limited to, exterior siding, foundations, porches, window frames, eaves, patios, garages, and refuse dumps.

**Lawns:** Nufarm Permethrin Pro can be applied to lawns adjacent to or around private homes, duplexes, townhouses, condominiums, house trailers, apartment complexes, carports, garages, fence lines, storage sheds, barns, residential structures, commercial and institutional buildings, and other areas where pests congregate or have been seen. Repeat treatment as necessary to maintain effectiveness.

**Perimeter Treatment:** Apply a band application 6 to 10 feet wide around and adjacent to the structure. Also, treat the base of the structure to a height of 2 to 3 feet. Use a spray volume of 2 to 10 gallons of emulsion per 1000 square feet. If mulch or debris is present, a higher volume application rate may be needed to ensure adequate coverage. Treat the base of the structure to prevent insects from entering the

structure.

**Pests Under Slabs:** Ants, cockroaches, scorpions and other nuisance pests inhabiting under paved areas may be controlled by drilling and injecting or horizontal rodding and then injecting 1 gallon of a 0.5% to 1.0% emulsion per 10 square feet or 2 gallons per 10 linear feet.

**Pest Control in Crawlspace:** Nufarm Permethrin Pro may be applied at a rate of 0.5% in crawlspaces to control ants, fleas, roaches, scorpions, or other nuisance insects listed in the table below. For proper termite recommendations see section on Applications for the Control of Subterranean Termites. Treat surfaces until wet. Keep children and pets off surface until dry.

### Insect Pests Controlled by Nufarm Permethrin Pro

PEST	SPECIFIC APPLICATION INSTRUCTIONS
Ants Ant Mounds <sup>1</sup> Armyworm Bark Beetles <sup>3</sup> Bees Beetles Borers <sup>3</sup> Boxelder Bugs <sup>2</sup> Carpenter Ants Carpenter Bees Centipedes Chinchbugs <sup>4</sup> Cockroaches Cockroaches (Asian) Crickets Earwigs Elm Leaf Beetles <sup>2</sup> Fire Ants <sup>1</sup> Fleas <sup>4</sup> Flies Firebrats Ground Beetles Gypsy Moths (adults & caterpillars) <sup>2</sup> Millipedes Mole Crickets Pillbugs Scorpions Silverfish Sod Webworm Sowbugs Spiders Ticks (including Deer Tick, Western Black-legged tick which may transport Lyme disease and Rocky Mountain Spotted Fever) <sup>4</sup> Wasps	<p>Application: Apply as a pinstream, as a fine/coarse, low pressure spray (20 psi or less), as a spot treatment or with a paintbrush. Treat where pests are found or entry points of the structure such as window and door frames and along the foundation.</p> <p><sup>1</sup><b>Mound Drench Treatment:</b> Apply 1-2 gallons of emulsion to each mound area by sprinkling the mound until it is wet and treat a 4 foot diameter circle around the mound. Use the higher volume for mounds larger than 12". For best results, apply in cool weather, such as in early morning or late evening hours, but not in the heat of the day.</p> <p><sup>2</sup><b>Boxelder Bugs, Elm Leaf Beetles and Gypsy Moth Caterpillars:</b> Spray thoroughly tree trunks, building siding or wherever pests congregate, but not to the point of runoff.</p> <p><sup>3</sup><b>Borers and Bark Beetles:</b> To prevent infestation of trees and woody ornamentals, spray the bark thoroughly but not to the point of runoff.</p> <p><sup>4</sup><b>Lawns:</b> Mix 0.4 - 0.8 fl. oz. of Nufarm Permethrin Pro in 4 to 25 gallons of water per 1000 square feet. Use the higher rate for fast knockdown and increased residual control. Dense or excessive (greater than 3 inches) lawn height and arid conditions may require higher volume application rates. Repeat application if necessary. Application in combination with compatible surfactants or wetting agents may enhance penetration.</p>

### Lawn and Ornamental Applications

#### General Application Instructions

Nufarm Permethrin Pro may be used to control insect pests on ornamentals, lawns, trees, shrubs, and vines in landscape areas around residential, public, institutional, commercial and industrial buildings, and on plants intended for aesthetic purposes in interior gardens and plantscapes.

Not for use on plants being grown for commercial sale or on plants grown for seed production.

Nufarm Permethrin Pro has demonstrated excellent plant safety; however, not all cultivars have been tested. Before treating large numbers of plants of a particular cultivar, treat a few plants and observe prior to full scale application.

Use the higher rates for heavy pest infestations. Use sufficient volume to uniformly cover plant surface. Higher volumes should be used if arid or drought conditions exist.

Do not apply more than 2.0 lb. a.i./Acre/Year.

### Recommended Application Rates for Ornamental Plants and Trees

PLANT	PEST	TREATMENT RATE	SPECIFIC APPLICATION INSTRUCTIONS
Ornamental Plants, foliage and flowering plants, evergreens, woody and herbaceous non-edible ornamentals and non-bearing plants of fruiting species in landscaped areas around industrial, residential and commercial buildings, non-crop, and, for treatment of plants intended for aesthetic purposes in interior gardens and landscapes	Ants Aphids Bagworm Beet Armyworm Birch Leafminer Cabbage Looper Cankerworms Citrus Thrips Coneworms* Fungus Gnat Gypsy Moth Caterpillars <i>Heliothis</i> spp. Japanese Beetles Lace Bug Leaf Feeding Caterpillars Leafhoppers Leafminers Leaf rollers Lygus Bugs Mealybugs Nantucket Pine Tip Moth* Pine Sawflies Plant Bugs Root Weevils (Adult) Seed Bugs* Tent Caterpillars Webworms Whiteflies Zimmerman Pine Moth	4 to 8 fl. oz. per 100 gallons OR Broadcast 0.9 to 1.8 fl. oz. per 10,000 sq. ft.	Apply sufficient volume of water to adequately cover foliage.  Use higher rate for moderate to high infestations.  Direct application to blooms may cause browning of petals. Marginal leaf burn may occur on <i>Salvia</i> , <i>Dieffenbachia</i> and <i>Pteris</i> Fern.  *For control of coneworms, Nantucket pine tip moth and seed bugs in evergreens: Begin application when adults appear. Repeat applications may be made on 5-7 day intervals as needed. To control Webbing Coneworms, make first application just prior to peak pollen flight. To control other Coneworms and Seed Bugs, make application 30 days following flower closure. Mix 8 oz. in 100 gals. of water and apply 5 to 10 gals. of spray per tree.
	Clearwing Moth Borers Ash Borer Banded Ash Clearwing Dogwood Borer Lesser Peachtree Borer Lilac Borer Oak Borer Peachtree Borer, Rhododendron Borer	1 to 2 qts. per 100 gallons	Apply to the lower branches and trunks prior to adult emergence.  Adult emergence varies according to Pest species, host tree, environmental conditions and geographic locations.  Thorough coverage of bark is required for best control.
Ornamental Trees	Bark Beetles <i>Dendroctonus</i> spp. <i>Ips</i> spp. Elm Bark Beetle Mountain Pine Beetle Pine Engravers Turpentine Beetle Western Pine Beetle	2 to 5 qts. per 100 gallons	
	Coleopteran borers Bronze Birch Borer Flatheaded Appletree borer	2 to 5 qts. per 100 gallons	
	For maximum residual control of the above pests	5.35 qts. per 100 gallons	



### Recommended Application Rates for Lawns

PLANT	PEST	TREATMENT RATE	SPECIFIC APPLICATION INSTRUCTIONS
Lawns around residential, commercial, industrial, institutional, and public areas	<p>Ants Chinchbugs Pillbugs Fleas Mole Crickets Sod Webworm Ticks (including Deer Tick, Western Black-legged Tick which may transport Lyme disease and Rocky Mountain Spotted Fever)</p> <p>For additional pests controlled, consult the list of pests under Outside Surfaces and Around Buildings.</p>	0.4 to 0.8 fl. oz. per 1000 sq. ft.	<p>Apply using 4 -25 gallons of spray volume.</p> <p><b>Subsurface Injection:</b> For flushing of mole crickets, subsurface injection may be used as a flush treatment in conjunction with an EPA-registered mole cricket control product. Inject 0.2 to 0.8 fluid ounces of Nufarm Permethrin Pro per 1000 square feet.</p> <p>Observe precautions and restrictions on more restrictive label. Do not exceed label rates for these products. Do not mix products with label prohibitions against such mixing</p>

## Indoor Applications

**Pest Control Indoors (Non-Food/Feed Areas):** Inside residential homes and the non-food/feed areas of commercial establishments including garbage rooms, lavatories, floor drains (to sewers), entries and vestibules, offices, locker rooms, machine rooms, garages, mop closets, packaged goods storage areas and other non-food/feed areas of Food Handling Establishments. Use Nufarm Permethrin Pro to control pests listed in the following table by application of a 0.5% emulsion.

Do not use in food/feed areas of food/feed handling establishments, restaurants or other areas where food/feed is commercially prepared or processed. Do not use in serving areas while food is exposed or facility is in operation, Serving areas are areas where prepared foods are served such as dining rooms, but excluding areas where foods may be prepared or held. In the home, all food processing surfaces and utensils should be covered during treatment or thoroughly washed before use. Exposed food should be covered or removed. Not for use in Federally Inspected Meat and Poultry Plants.

### Common Indoor Insect Pests Controlled by Nufarm Permethrin Pro

PEST	SPECIAL APPLICATION INSTRUCTIONS
Fleas	<p>Prior to treatment, carpets and furniture should be vacuumed thoroughly and vacuum cleaner bag discarded in an outdoor trash container. Evenly apply a broadcast spray at a rate of 1 gallon per 800 to 1600 square feet to infested areas such as crawlspaces, rugs, carpets, pet beds and other pet resting areas.</p> <p>Avoid wetting or soaking. For crawlspace applications, the applicator must wear a respirator recommended by NIOSH for filtering spray mists and organic vapors. When treating upholstered furniture take care to treat between and under cushions. Pay particular attention to areas which are frequented by pets. Old pet bedding should be replaced with clean, fresh bedding after treatment. To control the source of flea infestations, pets inhabiting the treated premises should be treated with a flea-control product registered for application to animals.</p>
Ants (including Carpenter Ants, Fire Ants) Bat Bugs Bed Bugs Bees Boxelder Bugs Brown Dog Ticks Carpenter Bees Carpet Beetles Centipedes Cockroaches, (including Asian) Crickets Earwigs Firebrats Flies (such as Drain, Cluster, House) Ground Beetles Leaf Beetles Millipedes Pantry Pests** (such as: Flour Beetles, Indian Meal Moths, Larder Beetles) Pillbugs Scorpions Silverfish Sowbugs Spiders Ticks (including Deer Tick and Western Black-legged Tick which may transport Lyme disease and Rocky Mountain Spotted Fever) Wasps	<p>Apply to cracks and crevices, as a pinstream, as a fine/coarse, low-pressure spray, spot application or with a paintbrush. Treat where pests are found or normally occur, such as cracks and crevices in walls, in and around kitchen cabinets and drawers**, along baseboards, behind sinks and around plumbing and other utility installations. Ant infested wood may be drilled and injected with Nufarm Permethrin Pro.</p> <p>**Remove all utensils, uncovered foodstuffs (or any having original package opened), shelf paper and other objects before spraying. Allow treated surfaces to dry and cover shelves with clean paper before replacing any utensils, foodstuff or other items. Any foodstuff accidentally contaminated with spray solution should be discarded.</p> <p>For the control of carpet beetles, evenly apply the spray to rugs, carpets, along baseboards and edges of carpeting, under carpeting, rugs and furniture, in closets, on shelving, and wherever else these insects are seen or suspected. Avoid wetting or soaking.</p> <p>For the control of Brown Dog Ticks, evenly apply the spray to infested areas, such as pet beds and resting quarters, nearby cracks and crevices, along baseboards, windows and doorframes, and areas of floor and floor coverings where these pests may be present. Avoid wetting or soaking. Old bedding should be removed and replaced with clean, fresh bedding after treatment.</p>

### Agricultural Structures

Nufarm Permethrin Pro can be used for residual pest control in and on buildings and structures used for agricultural purposes and their immediate surroundings. Pests controlled are listed in the accompanying tables. Nufarm Permethrin Pro may be applied as a space spray or directly to walls and ceilings as a residual surface treatment. When applied as a fog or fine mist, direct the spray toward the ceiling and upper corners until the area is filled with mist. For best results, close doors and windows before spraying and keep them closed for 10-15 minutes. Vacate the treated area and ventilate before reoccupying. Animals should be removed from area prior to treatment. Repeat treatment as necessary.

The use of any residual fly spray should be supplemented with proper manure management and general sanitation to reduce or eliminate fly breeding areas.

### As a surface or space spray — Livestock Premises

APPLICATION	PEST	DILUTE	APPLICATION RATE
Dairies, barns, feedlots, stables, poultry houses, swine and livestock houses, animal hospitals, pens and kennels, outside meat processing premises	Lesser mealworm, house flies, stable flies, beetles (such as Darkling Beetle) and other manure breeding insects. Also aids in the reduction of cockroaches, mosquitoes and spiders.	As a spray — 4 fl. oz. To 12.5 gallons water	Spray surfaces until wet or 1 gallon per 750 square feet. (Do not use in milk rooms.)
		As a fog or mist — 1.5 to 2.0 fl. oz. to 1 gallon water	Apply until area is filled with mist, using 2 fluid ounces per 1,000 cubic feet of space. (Can be used in milk rooms.)
		Overhead space spray system — 4 fl. oz. to 10 gallons mineral oil	4 fl. oz. spray per 1000 cu. ft. of air space. (Do not use in milk rooms.)
	Temporary reduction of annoyance from pests mentioned above	Outdoor space spray — 1.5 fl. oz. to 1 gallon water	Fill area with mist. Apply while the air is still and avoid wetting foliage.
	Bedbugs and chicken mites	As a spray — 4 fl. oz. to 10 gallons water. For severe infestation, it is permissible to use 4 fl. oz. to 4 gallons	Spray crevices of roost poles, cracks in walls and cracks in nest and nest boxes
	Ticks, including the deer tick, fleas	Indoor spray — 3 fl. oz. to 2 gallons water	Treat around windows, doors, porches, screens, eaves, patios, garages, under stairways and in crawl spaces where these pests may occur. Apply until surface is wet (approx. 1 gallon per 750-1000 sq. ft.)
		Outdoor spray — 4 fl. oz. to 100 gallons water. For longer residual, use up to 8 fl. oz. to 100 gallons water	Use enough finished spray to penetrate foliage, usually 50-100 gallons per acre. To prevent infestation of buildings, treat a band of vegetation 6-10 feet adjacent to the structure

Avoid contamination of feed and water. Do not apply dilutions for premise spray directly to livestock or poultry.

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## Livestock Spray

Consult a veterinarian before using this product on medicated, debilitated, aged, pregnant or nursing animals.

ANIMALS	PEST	DILUTE & USE	APPLICATION RATE
Lactating and non-lactating dairy cattle and goats, beef cattle and sheep	Horn flies only	4 fl. oz. to 50 gallons water (treats 200 head), 0.025% Active Ingredient (AI) high pressure spray	1 qt. of coarse spray per animal.
	Horn flies, face flies, stable flies, house flies, horse flies, deer flies, black flies, eye gnats, mange mites, scabies mites, ticks, lice and sheep keds.	4 11. oz. to 25 gallons water (treats 50-100 head), 0.05% AI high pressure spray.	1-2 qt. of coarse spray per animal over whole body surface. For mange, scabies, ticks and lice, thoroughly wet animal. Repeat application 10-14 days for mites and lice.
	Horn flies, face flies, stable flies, ear ticks and lice	4 fl. oz. to 2 <sup>1</sup> gallons water (treats 64-80 head), 0.05% AI low pressure spray (hand pump)	For fly and lice control, spray midline from face to tailhead to point of runoff (4-5 fl. oz.). For ear tick control, spray directly into each ear (V2 fl. oz. each).
	Horn flies, face flies and stable flies	4 ft. oz. to 10 gallons diesel oil or suitable mineral oil, 0.125% AI backrubber, self oiler.	Keep rubbing device charged. Results improved by daily forced use.
Poultry	Northern fowl mites and lice	1-4 fl. oz. to 3 <sup>4</sup> gallons water (treats 375 birds), 0.08-0.33% AI high pressure spray.	1 gallon of coarse spray per 100 birds, paying particular attention to vent area.
Swine (allow 5 days between last treatment and slaughter)	Lice and mange	4 fl. oz. to 25 gallons water (treats 50-100 head), 0.05% AI sprayer or dip.	Thoroughly wet or dip animals including ears. For mange, spray pen floors, sides and bedding. Repeat at 14 days.
Horses	Horn flies, face flies, stable flies, house flies, horse flies, black flies, eye gnats, mange mites, scabies mites, ticks, lice and fleas	1/4 fl. oz. to 1 pt. water, 0.6257% AI low pressure spray.	1.2 fl. oz. spray per animal. Spot treat back, face, legs tail and ears.
		1/4 fl. oz. to 1 1/4 gallons water, 0.0626% AI dip wash.	Thoroughly wet animal to skin with sponge or rag. Let drip dry.

## Companion Animals (Dogs Only)

Do not use on dogs under twelve (12) weeks old. Consult a veterinarian before using this product on medicated, debilitated, aged, pregnant or nursing animals. Sensitivities may occur after using any pesticide product on pets. If signs of sensitivity occur, bathe your pet with mild soap and rinse with large amounts of water. If signs continue, consult a veterinarian immediately. Avoid contact with face, eyes, and genitalia. Repeat applications every 2 weeks, if necessary.

ANIMALS	PEST	DILUTE & USE	APPLICATION RATE
Dogs (do not use on cats)	Fleas Ticks	1/4 fl. oz. to 1 pt. water, 0.6257% AI low pressure spray.	1-2 fl. oz. spray per animal. Spot treat back, face, legs, tail and ears.
		1/4 fl. oz. to 1% gallons water, 0.0626% AI dip wash.	Thoroughly wet animal to skin with sponge or rag. Let drip dry.
		4 fl. oz. to 20 gallons water, 0.0625% AI dip	Make sure all areas are soaked to skin. Let drip dry on animal. Do not rinse off.

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### Applications for Fruit and Nut Trees Around Residential Sites Only

Apply the appropriate amount of Nufarm Permethrin Pro (see table below) in 100 gallons of water per acre (1 gallon per 436 sq. ft.). Nufarm Permethrin Pro may be diluted and applied in greater volumes of water provided that the maximum application rates listed below are not exceeded on a per acre basis. For example: when attempting to control Navel Orangeworm on almonds using an application volume of 200 gallons per acre (2 gallons per 436 sq. ft.), the maximum legal dilution of Nufarm Permethrin Pro is 8 fluid ounces per 100 gallons (1/2 teaspoon per gallon).

#### Recommended Application Rates for Fruit and Nut Trees Around Residential Sites Only

TREE	PEST	RECOMMENDED RATE	CROP
Almond	Navel Orangeworm Peach Twig Borer	8 to 16 fl. oz. per 100 gal./A or 1/2 to 1 tsp. per 1 gal./436 sq. ft.	Do not harvest nuts within 7 days after application. Do not apply more than 32 fluid ounces per acre during hull split. Do not apply more than 80 fluid ounces per acre per
Apples	Green Fruitworm Oblique Banded Leafroller Plum Curculio Redbanded Leaf roller Rosy Apple Aphid Spotted Tentiform Leafminer Tarnished Plant Bug White Apple Leafhopper	4 to 8 fl. oz. per 100 gal./A or 1/4 to 1/2 tsp. per 1 gal./436 sq. ft.	Do not apply more than 24 fl. oz. per acre per year.
Cherries	Green Fruitworm Lesser Peachtree Borer Plum Curculio Redbanded Leafroller Rose Chafer Tarnished Plant Bug	4 to 8 fl. oz. per 100 gal./A or 1/4 to 1/2 tsp. per 1 gal./436 sq. ft.	Do not harvest fruit within 3 days after application. Do not make more than 4 applications per year. Do not make more than 3 applications after petal fall.
Filberts	Filbertworm Oblique Banded Leafroller	8 to 16 fl. oz. per 100 gal./A or 1/2 to 1 tsp. per 1 gal./436 sq. ft.	Do not harvest nuts within 14 days after application. Do not apply more than 64 fluid ounces per acre per year.
Peaches	Green Fruitworm Lesser Peachtree Borer Oriental Fruit Moth Peach Twig Borer Plum Curculio Rose Chafer Tarnished Plant Bug	4 to 12 fl. oz. per 100 gal./A or 1/4 to 3/4 tsp. per 1 gal./436 sq. ft.	Do not harvest fruit within 14 days after application. Do not apply more than 60 fluid ounces per acre per year.
Pears	Pear Psylla	8 to 16 fl. oz. per 100 gal./A or 1/2 to 1 tsp. per 1 gal./436 sq. ft.	Apply only during dormant through delayed dormant growth periods. Do not apply more than 32 fluid ounces per acre per year.
Pistachios	Leaffooted Bugs Navel Orangeworm Peach Twig Borer Plant Bugs	8 to 16 fl. oz. per 100 gal./A or 1/2 to 1 tsp. per 1 gal./436 sq. ft.	Nuts may be harvested on the day of application. Do not apply more than 32 fluid ounces per acre per year. Do not apply after 10 percent hull split.

1 fl. oz. = 2 tablespoons = 6 teaspoons

Do not use household utensils to measure Nufarm Permethrin Pro.

Nufarm Permethrin Pro is not for use on commercial fruit and nut trees.

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## Preconstruction Lumber and Log Applications

Dilute Nufarm Permethrin Pro before use using the rates in the chart below.

Gallons of Spray Mixture Desired	Gallons of Nufarm Permethrin Pro to Use		
	0.5% solution	0.75% solution	1.0% solution
40	-	-	1
80	1	1	2
200	2	3	5
400	5	7	10
800	10	15	20

### Treatment Instructions

Treat wood completely with a 0.5% to 1.0% solution of Nufarm Permethrin Pro to protect seasoned and unseasoned lumber and logs from wood destroying insects such as, but not limited to, ambrosia beetles, powder-post beetles old house borers, carpenter *ants* and termites. Apply by brushing, dipping, spraying or a pressure treating. To insure that the proper level of Nufarm Permethrin Pro is maintained, it is necessary to constantly monitor dip and pressure systems. Treated wood may be handled when dry.

### Brush Treatments

Thoroughly treat all surfaces of wood.

### Spray Treatments

Thoroughly spray the wood, including the back and ends.

### Pressure Treatments

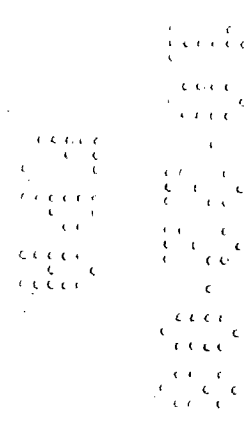
Place the wood in the treatment chamber and then add the Nufarm Permethrin Pro solution to the system. Pressurize up to 250 psi for up to one hour depending on the wood density and type of wood treatment. The Ideal permethrin retention is:

- 500 to 1,000 ppm in the outer 0.5 inch of wood, or
- a loading of 0.0175 to 0.035 lbs. permethrin per cubic foot of wood.

Transfer the treated wood in an appropriate place to dry after the pressure is released and the system is drained.

### Dip Treatments

Completely submerge the wood in the permethrin solution until the wood is thoroughly wet. Transfer the treated wood to an appropriate location and allow to dry. Agitation may be necessary for dipping solutions that have been left unused for long periods of time. Check tanks periodically for sediment, debris and other deposits, and remove if necessary.



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### STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Store in a cool place. Protect from excessive heat. Store product in original container only away from water, food, or feed. Keep container closed to prevent spills and contamination. Carefully open containers. After partial use, replace lid and close tightly. Do not put concentrate or diluted product into food or drink containers.

**PESTICIDE DISPOSAL:** Do not contaminate water, food, or feed by disposal. Improper disposal of excess pesticide, pesticide spray, or rinsate is a violation of Federal law. Wastes resulting from the use of this product that cannot be used according to the label instructions or chemically reprocessed may be disposed of on site or at a landfill or waste disposal facility approved for pesticide disposal, or in accordance with all applicable Federal, state, or local regulations. For further guidance, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container  $\frac{1}{4}$  full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

### WARRANTY DISCLAIMER

The directions for use of this product must be followed carefully. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, (1) THE GOODS DELIVERED TO YOU ARE FURNISHED "AS IS" BY MANUFACTURER OR SELLER AND (2) MANUFACTURER AND SELLER MAKE NO WARRANTIES, GUARANTEES, OR REPRESENTATIONS OF ANY KIND TO BUYER OR USER, 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. UNINTENDED CONSEQUENCES, INCLUDING BUT NOT LIMITED TO INEFFECTIVENESS, MAY RESULT BECAUSE OF SUCH FACTORS AS THE PRESENCE OR ABSENCE OF OTHER MATERIALS USED IN COMBINATION WITH THE GOODS, OR THE MANNER OF USE OR APPLICATION, INCLUDING WEATHER, ALL OF WHICH ARE BEYOND THE CONTROL OF MANUFACTURER OR SELLER AND ASSUMED BY BUYER OR USER. THIS WRITING CONTAINS ALL OF THE REPRESENTATIONS AND AGREEMENTS BETWEEN BUYER, MANUFACTURER AND SELLER, AND NO PERSON OR AGENT OF MANUFACTURER OR SELLER HAS ANY AUTHORITY TO MAKE ANY REPRESENTATION OR WARRANTY OR AGREEMENT RELATING IN ANY WAY TO THESE GOODS.

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If you do not agree with or do not accept any of directions for use, the warranty disclaimers, or limitations on liability, do not use the product, and return it unopened to the Seller, and the purchase price will be refunded.

### ATTENTION

- Do not apply to sources of electricity.
- Do not allow people or pets on treated surfaces, such as carpets until the spray has dried. Do not use concentrate or emulsion in fogging equipment.

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- Firewood is not to be treated.
- Use only in well ventilated areas.
- During any application to overhead areas of structure, cover surfaces below with plastic sheeting or similar material (except where exempt).
- Do not allow spray to contact food, foodstuffs, food contacting surfaces, food utensils or water supplies.
- Thoroughly wash dishes and food handling utensils with soap and water if they become contaminated by application of this product.
- Do not treat areas where food is exposed.
- During indoor surface applications do not allow dripping or run-off to occur.
- Do not apply this product to any rooms while occupied by patients, the elderly or infirm.
- Do not use in aircraft cabins. For use in cargo areas only.
- Do not apply when occupants are present in the immediate area in institutions such as libraries, sport facilities, etc. Do not apply to classrooms when in use.
- Do not touch treated surface until dry.

