

POISON
KEEP OUT OF REACH OF CHILDREN
READ SAFETY DIRECTIONS BEFORE OPENING OR USING



**Lawn Solutions
Battle
Insecticide**

BIFENTHRIN 100SC
TERMITICIDE & INSECTICIDE
ACTIVE CONSTITUENT 100g/L BIFENTHRIN

GROUP 3 A INSECTICIDE

For pre-construction and post-construction management of Subterranean Termites and for the control of a range of other urban pests both indoors and outdoors as specified in the Directions for Use.

RESTRICTED CHEMICAL PRODUCT ONLY TO BE SUPPLIED TO, OR USED BY AN AUTHORISED PERSON

IMPORTANT: Read the attached leaflet BEFORE USE

CONTENTS: 1L



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Use suitable application equipment and preferably cone nozzle combinations to deliver appropriate spray volume and a droplets size of 150 to 200 microns. DO NOT apply as a fog or mist.
For vector control applications: LAWN SOLUTIONS BATTLE INSECTICIDE can be applied by a variety of application techniques, such as power sprayers, hand-held pump sprayers or backpack sprayers, which are operated to produce large droplets to minimise spray drift. However, the product must not be applied by ULV or fogging equipment, which produce small droplets that may result in off-target drift.
For turf applications: Applications should be made with equipment calibrated to deliver a FINE dilute spray in a suitable volume to ensure thorough coverage. Use suitable application equipment and preferably cone nozzle combinations to deliver appropriate spray volume and a droplet size of 150 to 200 microns. DO NOT apply as a fog or mist. Maintain agitation during mixing and application.

COMPATIBILITY:
LAWN SOLUTIONS BATTLE INSECTICIDE is compatible with commonly used fungicides such as Dithane M45*, Antracol*, Bravo 500* and Kocide*.

SURFACTANTS:
LAWN SOLUTIONS BATTLE INSECTICIDE contains a surfactant. Additional surfactant may be only necessary on hard to wet plants and in high volume situations.

CRITICAL APPLICATION DETAILS:
Treatment of Timber and Timber Based Products
The application of LAWN SOLUTIONS BATTLE INSECTICIDE to both Timber and Timber-based products as specified in the directions for use table will protect treated products from damage by subterranean termites. In most situations protection will be afforded against all termites species including *Coptotermes acinaciformis* and *Mastotermes darwiniensis*. The treatment should be conducted in accordance with Australian Standard AS 1604 Series.

Treatment of Structures
The pest control operator must notify site supervisor if any, and workers who come into contact with uncovered treated soil prior to laying the moisture membrane, to wear appropriate personal protective equipment, and to observe re-entry requirements. (For personal protective equipment refer to "SAFETY DIRECTIONS", and for re-entry refer to "PRECAUTIONS AND RE-ENTRY PERIODS", below).
The use of LAWN SOLUTIONS BATTLE INSECTICIDE will help prevent and control subterranean termite infestations in and around buildings and structures when used in accordance with the Australian Standard AS 3660 Series. Termite Management - A dilute termiticidal emulsion must be adequately dispersed into the soil to establish a barrier between the building and subterranean termites in the soil. The purpose of a termite barrier is to prevent concealed termite entry into the building.
The biology and behaviour of the termite species involved should be considered by the Pest Control Operator in determining which control measures are most appropriate to control and prevent termite infestation.
The application of LAWN SOLUTIONS BATTLE INSECTICIDE to form both horizontal and vertical chemical barriers must be in accordance with the Australian Standard AS 3660 Series. For treatment of new and existing buildings, both horizontal and vertical barriers may be required, around and under the building. External perimeter barriers and where required, internal perimeter barriers, are an essential part of this treatment. The purpose of a chemical termite soil barrier is to provide a continuous, no gap barrier between the building and the termite colony. It is therefore essential that the pest control operator is familiar with the construction details of the building. For further details, refer to the "Horizontal Barrier Treatments" and "Vertical Barrier Treatments" statements in this LEAFLET and to the Australian Standard AS 3660 Series.

Horizontal Barrier Treatments:
Use 5 L of solution per m² of soil. Apply the termiticide solution evenly to the soil surface area to ensure the provision of a continuous barrier with no gaps. To minimise drift, use low pressure, high volume spray equipment delivering large coarse droplets. On impervious soils where the application of 5 L/m² would cause excessive run-off, the application volume may be reduced provided the concentration of the solution is increased by a corresponding amount. For example, the volume of applied concentrate must remain constant at 25, 50 or 75 mL/m² depending on the location and the situation. DO NOT apply solution volumes below 2 L/m². In situations where the soil surface is very dry and conditions are conducive to rapid drying, the areas to be treated should be moistened prior to the termiticide application. It is important to note that when applying a horizontal barrier to the perimeter of a building or structure the chemical barrier is deemed to have a depth of 80 mm. In situations where the solution will not readily wet the soil to the required depth, loosen soil to a depth of 80 mm by 150 mm wide and apply 1.5 L of solution per lineal metre.

Vertical Barrier Treatments:
To install vertical barrier use a minimum of 100 L of solution per m³ of soil. Vertical barriers must be a minimum of 150 mm wide, extend down to 80 mm below the top of the footing and be complete and continuous. Vertical barriers can be installed by trenching and treating the soil as it is backfilled, by soil rodding or by the use of certified reticulation systems, as described in the Australian Standard AS 3660 Series. The preferred method of installing a vertical barrier treatment is either by trenching and treating the soil as it is backfilled or by delivery via a certified reticulation system. When using the soil rodding method to establish a vertical barrier the distance between rod spacing should be as per the following table. To improve soil penetration, the soil should be loosened to depth of 150 mm.

Soil type	Rod Spacing (mm)
Heavy clay	150
Clay loams	200
Loams	250
Sands	300

Perimeter Barrier Treatments:
Perimeter barrier consists of horizontal barrier at least 150 mm wide adjoining a vertical barrier of at least 150 mm in width. A perimeter barrier must completely surround all buildings, pipes, piers and service penetrations. In buildings with suspended floors with greater than 400 mm crawl space, perimeter barriers should be installed to surround piers, stumps and service penetrations and completely about all substructure walls. To ensure provision of a continuous barrier use a minimum of 100 L of solution per m³ of soil. This equates to a delivery volume of 5 L of solution per linear metre for a 300 mm vertical barrier, or 10 L of solution per linear meter for a 600 mm vertical barrier. Termites may gain access behind engaged piers against single brick walls unless the soil is treated on both sides of the wall down to the footing.

Post-Construction under Slab Treatments:
For concrete slabs, the solution needs to be injected through pre-drilled holes through the slab, at intervals between 150 mm and 300 mm. The following table shows the recommended hole spacing and recommended volume of spray solution required per hole, depending the soil type.

Soil type	Hole Spacing (mm)	Litres per hole
Heavy clay	150	1.5
Clay loams	200	2.0
Loams	250	2.5
Sands	300	3.0

Application equipment used to inject LAWN SOLUTIONS BATTLE INSECTICIDE through pre-drilled holes in an interior situation must be in good working order, free of any leaks and the injector must have tip shut-off to prevent nozzle dripping. Lateral dispersion tips are recommended. Drill holes must be resealed following injection of the LAWN SOLUTIONS BATTLE INSECTICIDE solution. The decision and/or need for drilling concrete floor slabs should only be made after thorough inspection of the building. The degree of termite activity should also be taken into consideration.

Treatment in Conjunction with Physical Barriers:
In situations where the termite protection system is to consist of a combination of both physical and chemical barriers, each certified system must be installed according to the relevant and appropriate product specification and the Australian Standard AS 3660 Series.

Reticulation systems:
LAWN SOLUTIONS BATTLE INSECTICIDE can be used through reticulation systems to form horizontal and vertical barriers under and around structures and all service penetrations. The reticulation system must be certified and be capable of distributing the termiticide solution according to the product label and Australian Standard AS 3660 Series. In situations using reticulations system to form barriers around perimeter and/or service penetrations only, a full pre-construction soil applied LAWN SOLUTIONS BATTLE INSECTICIDE horizontal barrier is recommended. It is the responsibility of the builder and all relevant sub-contractors to ensure that all termite barrier systems are installed in accordance with the relevant product installation directions and the Australian Standard AS 3660 Series.

Service Requirements:
Service requirements are to be determined as a result of at least an annual inspection by a licensed Pest Control Operator. More frequent inspections may be required in high risk termite areas. In determining

the need for service, factors such as local termite pressure, breaches of the barrier and termiticide longevity should be considered.
Subterranean termites are on occasions capable of bridging termite barriers and therefore regular inspections, as detailed in the Australian Standard AS 4349.3 will significantly increase the probability of detection of termite activity before any damage or costly repairs are required.
Several factors contribute to longevity of the termite treatment and must be considered when evaluating the need for re-treatment. The actual protection period will depend on the termite hazard, climate, soil conditions and rate of termiticide used. Refer to Table A for the expected protection periods provided.

INSECTICIDE RESISTANCE WARNING
GROUP 3 A INSECTICIDE

For insecticide resistance management LAWN SOLUTIONS BATTLE INSECTICIDE is a Group 3A insecticide. Some naturally occurring insect biotypes resistant to LAWN SOLUTIONS BATTLE INSECTICIDE and other group 3A insecticide may exist through normal genetic variability in any insect population. The resistant individuals can eventually dominate the insect population if LAWN SOLUTIONS BATTLE INSECTICIDE or other group 3A insecticides are used repeatedly. The effectiveness of LAWN SOLUTIONS BATTLE INSECTICIDE on resistant individuals could be significantly reduced. Since occurrence of resistant individuals is difficult to detect prior to use, LAWN SOLUTIONS accepts no liability for any losses that may result from the failure of LAWN SOLUTIONS BATTLE INSECTICIDE to control resistant insects. LAWN SOLUTIONS BATTLE INSECTICIDE may be subject to specific resistance management strategies. For further information, contact your local supplier, LAWN SOLUTIONS representatives or local agricultural department agronomist.

PRECAUTIONS AND RE-ENTRY PERIOD
DO NOT spray into the air or directly on humans, pets or animals. Avoid contact with food, food utensils or preparation surfaces.

RE-ENTRY PERIOD
Treatment of Timber and Timber-based Products: DO NOT handle treated timber until it is completely dry.
Pre-construction: Re-entry - DO NOT allow entry into uncovered treated areas until the spray has dried. When prior entry is necessary, wear cotton overalls buttoned to the neck, wrist and elbow-length PVC, neoprene or nitrile gloves and chemical resistant footwear. Clothing must be laundered after each day's use.
Post-Construction and urban pest control: Re-entry - DO NOT allow people and pets to enter treated areas until the spray has dried (normally 3-4 hours) and ventilated buildings before reoccupying. When prior entry is necessary, wear cotton overalls buttoned to the neck, wrist and elbow-length PVC, neoprene or nitrile gloves and chemical resistant footwear. Clothing must be laundered after each day's use.
Re-entry period for vector control applications: Ventilate indoor treated areas and allow all areas to completely dry (normally 1-2 hours) before re-occupying. When prior entry is necessary, wear cotton overalls buttoned to the neck, wrist and elbow-length PVC, neoprene or nitrile gloves and chemical resistant footwear. Clothing must be laundered after each day's use.
Crops, Ornamentals, Turf: DO NOT allow entry into treated areas until the spray deposits have dried or been watered in after treatment. When prior entry is necessary, wear suitable protective clothing (i.e. Water-proof boots, overalls and gloves). Clothing must be washed after each day's use.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND THE ENVIRONMENT
Dangerous to fish and aquatic organisms. DO NOT contaminate dams, rivers, streams or waterways or drains with product or used containers. DO NOT apply to mud, sand, mangrove or aquatic habitats. Drift from treated areas may be hazardous to organisms in adjacent aquatic sites. Extreme caution must be used to avoid aquatic contamination. Avoid spraying flowers that attract and harbour bees.

PROTECTION OF PETS AND LIVESTOCK
Dangerous to bees. DO NOT spray any plants in flower when bees are foraging. Spray in the night or early morning when bees are not actively foraging. Before spraying, remove animals and pets from the areas to be treated. Cover or remove any open food and water containers. Cover or remove fish ponds, aquariums etc before spraying. DO NOT allow re-entry until spray has dried.

STORAGE, SPILLAGE AND DISPOSAL
Store in closed original container, in a cool, well-ventilated area away from children, animals, food and feedstuffs. DO NOT store for prolonged periods in direct sunlight. In case of spillage, confine and absorb spilled product with absorbent material such as sand, clay or cat litter. Dispose of waste as indicated below or according to the Australian Standard AS 2507 – Storage and Handling of Pesticides. DO NOT allow spilled product to enter sewers, drains, creeks or any other waterways.

For REFILLABLE containers: Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.

Triple-rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture and deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots, in compliance with relevant local, state or territory government regulations. Do not burn empty containers or product.
DO NOT bury waste or surplus product. Dispose of undiluted waste by either dilution and use according to the Directions for Use or returning to the point of purchase in the original container for controlled disposal. Dispose of diluted surplus product by using according to the Directions for Use. DO NOT re-use empty container.

Envirodrum Micro Matic valve (200L)
Store the original sealed Envirodrum in cool well-ventilated areas. DO NOT store for prolonged periods in direct sunlight. DO NOT tamper with Micro Matic valve or the security seal. DO NOT contaminate the Envirodrum with water or any foreign matter. After each use of the product, please ensure that the Micro Matic coupler delivery system and hoses are disconnected, triple rinsed with clean water and drained accordingly. When the contents of the Envirodrum have been used, please return the Envirodrum to the point of purchase. The Envirodrum remains the property of LAWN SOLUTIONS.

SAFETY DIRECTIONS
Poisonous if swallowed. May irritate eyes and skin. Repeated exposure may cause allergic disorders. Avoid contact with eyes and skin.

For termite control in buildings and structures: When opening the container, preparing spray and using prepared spray, wear cotton overalls buttoned to the neck and wrist, a washable hat and elbow length PVC, or nitrile gloves. After each day's use, wash gloves and contaminated clothing.

For handheld application: When opening the container and preparing spray, wear cotton overalls buttoned to the neck and wrist, washable hat and elbow length PVC or nitrile gloves. When using prepared spray wear protective waterproof clothing, elbow length PVC or nitrile gloves and water resistant footwear. After each day's use, wash gloves and contaminated clothing. Wash hands after use.

FIRST AID
If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 11 26, New Zealand 0800 764 766.

MATERIAL SAFETY DATA SHEET
Additional information is listed in the Material Safety Data Sheet (MSDS). A MSDS for LAWN SOLUTIONS BATTLE INSECTICIDE is available from LAWN SOLUTIONS.

WARRANTY
LAWN SOLUTIONS makes no warranty expressed or implied, concerning the use of this product other than that indicated on the label. Except as so warranted the product is sold as is. Buyer and user assume all risk of use and/or handling and/or storage of this material when such use and/or handling and/or storage is contrary to label instructions.

APVMA Approval Number: 89901/132755

RESTRAINTS
DO NOT use this product at less than indicated label rates.
DO NOT apply to soils if excessively wet or immediately after heavy rain to avoid run-off of the chemical.
DO NOT apply to mud, sand, mangrove or aquatic habitat.
DO NOT apply as an Ultra Low Volume (ULV) or via thermal fogging treatment.
DO NOT use in situations where predatory mites are established and providing effective mite control.
DO NOT apply if rainfall is expected before spray deposits dry on leaf surfaces.
DO NOT use in cavity walls (except via certified cavity infill reticulation systems or direct treatment of nest).

TIMBER AND TIMBER BASED PRODUCTS
DO NOT use treated timber or boards in situations other than those deemed hazard class 1 or 2.

ORCHARDS AND ORNAMENTALS
DO NOT use in situations or orchards where predatory mites are established and providing effective mite control.
DO NOT apply by aircraft.
DO NOT apply if rainfall is expected before spray deposits have dried on leaves.

CONDITIONS OF USE BY AUTHORISED PERSONS
The Pest Control Operator must be licensed under state legislation. The Pest Control Operator must notify site supervisor, if any, and workers who come into contact with uncovered treated soil prior to laying the moisture membrane, to wear appropriate personal protective equipment and to observe re-entry requirements. For personal protective equipment, refer to "SAFETY DIRECTIONS", and for re-entry, refer to "PRECAUTION: RE-ENTRY PERIODS", below).

WITHHOLDING PERIOD PEARS: DO NOT APPLY LATER THAN 14 DAYS BEFORE HARVEST

GENERAL INSTRUCTIONS
Urban pest control - LAWN SOLUTIONS BATTLE INSECTICIDE is a powerful knockdown and residual pesticide. Ants, cockroaches, fleas, flies, mosquitoes, spiders, ticks and wasps are controlled by direct contact with spray and also by residual action as they come in to contact with treated surfaces.
Termites - The use of LAWN SOLUTIONS BATTLE INSECTICIDE will help prevent and control subterranean termite infestations in and around building and structures when used in accordance with the Australian Standard AS 3660 Series, Termite Management. A dilute termiticidal solution must be adequately dispersed into the soil to establish a barrier between the building and subterranean termites in the soil. The purpose of a termite barrier is to prevent concealed termite entry into the building. The biology and behaviour of the termite species involved should be considered by the pest control operator in determining which control measures are most appropriate to control and prevent termite infestations.
Best results are obtained when LAWN SOLUTIONS BATTLE INSECTICIDE is applied before pest populations build up to damaging levels.

Turf
This product can be used as a protective treatment when applied at regular intervals or as a knockdown treatment to control existing pests. Best results are obtained when the product is applied before pest populations build up to damaging levels.

MIXING & APPLICATION:
LAWN SOLUTIONS BATTLE INSECTICIDE is a suspension concentrate requiring dilution with water prior to use. Add the required quantity of LAWN SOLUTIONS BATTLE INSECTICIDE to water in the spray tank and mix thoroughly. Maintain agitation during both mixing and application. Ensure that spray lines are clean and free from contaminating pesticide, e.g. herbicides.
For Termites: to facilitate even application of the termiticide emulsion over the area to be treated, the addition of a marker dye at label rates is recommended. On hard to wet soils, the penetration of the termiticide emulsion may be improved by the addition of a soil surfactant at label rates.
For Treatment of Timber and Timber-based Products: add the required quantity of LAWN SOLUTIONS BATTLE INSECTICIDE to the diluent in the holding tank or glue mixer and mix thoroughly. Maintain agitation during both mixing and application.
For general pest control: Application of LAWN SOLUTIONS BATTLE INSECTICIDE should be made with equipment calibrated to deliver a FINE dilute spray in a suitable volume of water to ensure thorough coverage.

SITUATION	PEST	RATE	CRITICAL COMMENTS
Internal and External Areas & Surrounds of Domestic, Commercial, Public & Industrial Buildings and Structures	Spiders	25-50mL/10L	Use the higher rate in situation where pest pressure is high, when rapid knockdown and/or maximum residual protection is desired. Pay particular attention to protected dark areas such as cracks and crevices, under floors, eaves and other known hiding or resting places. For overall band surface spray, apply as a coarse, low pressure surface spray to areas where spiders hide, frequent and rest. Spray to the point of run-off using around 5 L of spray mixtures per 100 m ² and ensuring thorough coverage of the treated surfaces. For crack and crevice treatment use an appropriate solid stream nozzle. For maximum spider control use a two part treatment. 1. Crack and crevice. 2. Overall band spray of surfaces.
	Papernest Wasps	50mL/10L	Apply prepared solution to the point of run-off directly to the papernest ensuring thorough and even coverage. When all adult wasps have been knocked-down the nest may be safely removed from the structure.
Internal & external area & surrounds of domestic, commercial, public & industrial buildings and structures - suitable for residual surface treatments	Ants (excluding Red Imported Fire Ants), Cockroaches, Mosquitoes, Biting Midges, Flies, Fleas, Ticks (excluding the paralysis tick <i>Ixodes holocyclus</i>) (Adults and Nymphs)	50-100 mL/10 L	Use the higher rate in situations where pest pressure is high, when rapid knockdown and/or maximum residual protection is desired. The lower rate may be used for follow-up treatments. For indoor use, pay particular attention to protected dark areas such as cracks & crevasses, behind or under sinks, stoves and refrigerators, furniture, pipes, cornices, skirting boards and other known hiding or resting places. DO NOT use a surface spray. On non-porous surfaces apply as a coarse spray at the rate of 1 L solution per 20 m ² . When treating non-porous surfaces do not exceed the point of run-off. On porous surfaces or use through power equipment, spray at the rate of 1 L of solution per 10 m ² . When treating porous surfaces do not exceed the point of run-off. Ants: To control ants apply to trails and nests. Repeat as necessary. Fleas and Ticks: To control fleas and ticks apply prepared solution to outside surfaces of buildings and surrounds including but not limited to foundations, verandahs, window frames, eaves, patios, garages, pet housing, soil, turf, lawns or woody ornamentals or other areas where pests congregate or have been seen. Fleas and Mosquitoes: To control fleas and mosquitoes apply prepared solution to surfaces where insects rest or harbour. Reapply as necessary. Perimeter treatments: Apply the prepared solution to a band of soil or vegetation two to three metres wide around and adjacent to the structure. Also treat the foundation of the structure to a height of approximately one metre. Use a spray volume of 5 to 10 L per 100 m ² . Higher volumes of water may be needed if organic matter is present or foliage is dense.
	Lawn Armyworm (<i>Spodoptera mauritia</i>), Sod Webworm (<i>Herpetogramma learsisalis</i>)	1.2 L/ha (12 mL/100 m ²)	Mix in water and apply evenly over the treated area to be treated using spray application equipment. Use a minimum total volume of at least 200 L/ha (2 L/100 m ²). To ensure optimum control irrigate the treated areas with up to 4 mm of water soon after application. Inspect treated areas for continuing activity. Re-apply as required. Where a rate range is indicated use lower rates under low insect pressure and higher rates under higher insect pressure. Apply after mowing to minimise loss of insecticide in clippings.
	Argentine Stem Weevil adults (<i>Listronotus bonariensis</i>)	1.2 to 2.4 L/ha (12 to 24 mL/100 m ²)	
	African Black Beetle adults (<i>Heteronychus arabi</i>)	2.4 to 3.6 L/ha (24 to 36 mL/100 m ²)	
	Billbug adults (<i>Sphenophorus brunneipennis</i>)	1.2 to 2.4 L/ha (12 to 24 mL/100 m ²)	
Black Ant, Coastal Brown Ant, Funnel Ant, Meat Ant, Sugar Ant, Stinging Ant only	1.2 to 4.4 L/ha (12 to 44 mL/100 m ²)	Mix in water and apply evenly over the area to be treated using spray application equipment. Apply to areas where ants are active. Where possible spray directly into the nests. Use the lower rate for maintenance treatments or to control light infestations and the high rate for heavy infestations and maximum residual control. The elimination of Funnel Ants from a particular site will generally require more than one application. Initial applications should be broadcast over affected areas. As the initial numbers of active colonies is reduced applications should shift to targeted active mounds. Apply spray directly to the mound and in the area immediately surrounding active mounds (300 mm radius). To aid in even coverage a minimum spray volume of 200 L/ha (2 L/100 m ²) is recommended.	

PEST	SITUATION	STATE	RATE	CRITICAL COMMENTS
Subterranean Termites	Domestic, public, commercial & industrial areas	All States, except Tas	Refer to Table A	Refer to Table B

PLEASE SEE OVERLEAF FOR FURTHER DIRECTIONS FOR USE TABLES

Table A: LAWN SOLUTIONS BATTLE INSECTICIDE use rates for management of SUBTERRANEAN TERMITES

SITUATION	ALL AREAS SOUTH OF THE TROPIC OF CAPRICORN (EXCEPT TAS)		ALL AREAS NORTH OF THE TROPIC OF CAPRICORN	
	RATE	EXPECTED PROTECTION PERIOD*	RATE	EXPECTED PROTECTION PERIOD*
Pre-Construction Barriers Under slabs and under suspended floors with less than 400 mm crawl space	1L/100L	At least 10 years	1.5L/100 L	5 years
	500mL/100 L	10 years	1L/100 L **	4 years
Perimeter Barriers For new and existing buildings	1L/100L	At least 10 years	1.5L/100 L	5 years
	500mL/100 L	10 years	1L/100 L	4 years
	250mL/100 L	3 years	750mL/100 L	3 years
Post-construction Barriers Under slabs and under suspended floors with less than 400 mm crawl space	1L/100L	At least 10 years	1.5L/100 L	5 years
	500mL/100 L	10 years	1L/100 L	4 years
Reticulation Systems Perimeter and/or service penetration treatment only	1L/100 L	At least 10 years	1.5L/100 L	5 years
	500mL/100 L	10 years	1L/100 L	4 years
	250mL/100 L	3 years	750mL/100 L	3 years
Reticulation Systems Cavity infill & footing barriers	500mL/100 L	5 years	1L/100 L	2 years
	500mL/100 L	5 years	1L/100 L	2 years
Protection of Poles & Fence Posts	500mL/100 L	10 years	1.5L/100 L	5 years
	500mL/100 L	10 years	1L/100 L	4 years
	500mL/100 L	10 years	750mL/100 L	3 years
Nest Eradication	500mL/100 L	Not Applicable	500mL/100 L	Not Applicable

* Several factors contribute to the estimated length of protection provided for each termite treatment. The actual protection period will depend on the termite hazard, climate, soil conditions and rate of termiticide used. The need for retreatment is to be determined as a result of at least an annual inspection, or more frequently in high risk area, by a qualified licensed Pest Control Operator.

** This rate must be used in conjunction with a certified reticulation system that is capable of distributing the Termiticide & Insecticide solution according to the product label and the Australian Standard AS 3660 Series.

DIRECTIONS FOR USE – ORCHARDS AND ORNAMENTALS

CROP	PEST	STATE	RATE	CRITICAL COMMENTS
Apples	Apple Dimpling Bug (<i>Campylomma liebknechti</i>), Plague Thrips (<i>Thrips imagines</i>)	Old, NSW, ACT, Vic, SA, WA only	8 mL or 16 mL/100L	Apply when pest numbers reach acceptable threshold levels. Applications should be made as early as possible during the blossoming period and early in the morning when bees are not actively foraging. Use the high rate for both knockdown and residual control. Only one application at this rate should be required per season. In orchards where appropriate crop monitoring facilities are available, the low rates may be used for knockdown control only. When this low rate is used, a second application at the low rate may be required to prevent re-infestation. Spray to run-off using a total spray volume of 1000 or 2500 L/ha, depending on tree size.
Bananas	Banana Scab moth (<i>Nacobla costarica</i>)	Old only	200 mL /100 L	Apply 40 mL of prepared spray to each banana bell. Use a suitable bell injection instrument to inject the required volume directly into the bell as it emerges from the throat of the banana plant while in the upright position. The correct site for injection is in the top half to one third of the bell just below the distinct swelling where the male flower mass ends and the female flower cavity (bottom hand of fruit) start. Keep injection equipment clean use lubricants sparingly. Monitor for thrips actively and treat only when thrips are active.
	Flower Thrips (<i>Thrips florum</i>)	Old, NSW only		
Pears	Two Spotted Mite (<i>Tetranychus urticae</i>), Pear Looper, Longtailed Mealy Bug (crawlers), Light Brown Apple Moth, Codling Moth	Vic only	40 mL /100L	Monitor the mite population from mid December onwards. Apply the product before mite population reaches economic damage levels (i.e. around 20-30 mites/25 leaves). A follow-up treatment may be required 3 to 4 weeks later. If more than 2 miteicide applications are required use an alternative rotational miteicide. Spray to run-off using a total spray volume of 2000-4000 L/ha depending on the tree size. Note: When using this product on pears it is not necessary to tank mix additional insecticides for the control of Codling moth and Light Brown apple moth and Longtailed mealy bug crawlers.
Roses, Carnations and other ornamental plants	Two Spotted Mite (<i>Tetranychus urticae</i>)	All States	28 or 40 mL /100L	Apply at the first sign of pest infestation and before pest populations build up to damaging levels. Repeat as necessary on a 10-14 day interval. Best results are obtained from preventative rather than curative applications. Where indicated use the higher rate for knockdown of established pest infestations or when longer residual activity is required. Spray to run-off using a spray volume of 1000 – 1500 L/ha (10-15 litres per 100 square metres) covering both leaf surfaces.
	Aphids		20 mL /100L	
	Caterpillars and Loopers including Heliothis (Corn Earworm, Native Budworm) <i>Helicoverpa</i> spp., Light Brown Apple Moth (<i>Epiphyas postvittana</i>), Geranium Plume Moth (<i>Sphenarches anisodactylus</i>)		20 mL /100L	Apply at the first sign of pest infestation and before pest populations build up to damaging levels. Repeat as necessary on a 10-14 day interval. Best results are obtained from preventative rather than curative applications. Spray to run-off using a spray volume of 10-15 litres per 100 square metres covering both leaf surfaces.
	Whitefly (<i>Trialeurodes vaporariorum</i>), Pansettia White Fly (<i>Bemisia tabaci</i> Biotype B)		20-100 mL /100L	Apply at first sign of pest activity and repeat at 7-10 day intervals, while pest pressure exists. More than three sprays may be required to control an existing infestation. Spray to run-off covering both leaf surfaces. Use the higher rate when pest pressure is high, when conditions favour pest development or when increased residual protection is required.
	Mealy Bug (<i>Pseudococcus longispinus</i>)		20 mL /100L	Apply at first sign of pest activity and repeat at 7-10 day intervals, while pest pressure exists. Spray to run-off covering both leaf surfaces.
	Plague Thrips (<i>Thrips imagines</i> , <i>Thrips simplex</i> , <i>Thrips hawaiiensis</i>)		20 mL /100L	Apply at the first sign of pest activity and repeat at 7-10 day intervals while pest pressure exists. Ensure that flowers and buds are sprayed. Spray to run-off covering both leaf surfaces. When buds are opening rapidly and pest pressure is high reducing the spray interval to 3-4 days will give better results. Monitor the population by regular inspection.
	Cutworm (<i>Agrotis</i> spp.) in beds, containers and pots		1.2 L/ha 12 mL/100 square metres	Spray evenly over the areas to be treated. After application apply approximately 5 mm of sprinkler irrigation.
			20 mL /100L	Apply as a drench at the rate of 2 litres of prepared spray per metre of pot area.

NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION. WITHHOLDING PERIOD: PEARS: DO NOT APPLY LATER THAN 14 DAYS BEFORE HARVEST.

TABLE B: CRITICAL COMMENTS for use against SUBTERRANEAN TERMITES

SITUATION	CRITICAL COMMENTS
Pre-Construction Barriers Under slabs for protection of new buildings +,+++	<ul style="list-style-type: none"> Apply with suitable application equipment to form a complete and continuous chemical barrier (both vertical and horizontal) under the slab. The formation of the barrier may require a combination of conventional open wand application and soil trenching and/or rodding applications. Recommended rod spacing should be between 150 and 300 mm, as per soil type. For additional information refer to "Critical Application Details" on this label and the Australian Standard AS 3660 Series. An external perimeter barrier (both horizontal and vertical) is an essential part of termite protection and must be installed at the completion of the building. Refer to "Perimeter Barriers" below, for further details. Chemical barriers that have been disturbed by construction, excavation and/or landscaping activities will need to be reapplied to restore continuity of the barrier.
Pre-Construction Barriers Under suspended floors +,+++	<ul style="list-style-type: none"> For areas under suspended floors with restricted access (typically with less than 400mm clearance), the entire subfloor area should be treated as a continuous horizontal barrier, which completely abuts an internal vertical barrier (if necessary) around any substructure wall. Ideally, this operation should be done during construction of the building while access is more readily available. For areas beneath suspended floors which have adequate access (eg. more than 400 mm clearance), install perimeter barriers around each individual pier, stump, service penetration and substructure wall. An external perimeter barrier (both horizontal and vertical) is an essential part of termite protection and must be installed at the completion of the building. Refer to "Perimeter Barriers" in this leaflet, for further details.
Perimeter Barriers For new and existing buildings ++	<ul style="list-style-type: none"> Perimeter barriers (both horizontal and vertical, external and where required, internal and sub-floor) are an essential part of termite protection and must be installed at the completion of the building. Perimeter barriers should be installed around slabs, piers, substructure walls and external penetrations points. Apply with suitable application equipment to form a continuous chemical barrier (both vertical and horizontal) around the structure and to a depth reaching 80mm below the top of the footings, where appropriate. The formation of the barrier may require a combination of several application techniques, including soil trenching and/or rodding and open wand applications. Chemical barriers that have been disturbed by construction, excavation and/or landscaping activities will need to be reapplied to restore continuity of the barrier.
Post-Construction Barrier Treatments For the protection of existing buildings ++	<ul style="list-style-type: none"> Apply with suitable application equipment to form a complete and continuous barrier (both horizontal & vertical) around and under the buildings and structures as in accordance with AS3660 with particular emphasis on any known infestations areas. To form the chemical barrier a number of application techniques may be needed including soil rodding; trenching; open wand and sub-slab injections. Chemical barriers beneath concrete will require drilling. Recommended drill hole spacing is between 150mm and 300mm. To enhance chemical distribution, use a lateral dispersion tip on the injector and deliver up to 10L of emulsion per linear metre. Drill holes should be no more than 150mm from foundation walls or expansion joints to ensure complete formation of a chemical barrier. For areas under suspended floors with restricted access (typically with less than 400mm clearance), the entire subfloor area should be treated as a continuous horizontal barrier, which completely abuts an internal vertical barrier (if necessary) around any substructure wall. Otherwise, install perimeter barriers around each individual pier, stump, penetration point and structure wall. Chemical barriers that have been disturbed by construction, excavation and/or landscaping activities will need to be reapplied to restore continuity of the barrier.
Reticulation Systems Perimeter and/or service penetration treatment only	<ul style="list-style-type: none"> LAWN SOLUTIONS BATTLE INSECTICIDE must be used through a certified reticulation system to form and replenish perimeter barriers around buildings and service penetrations. The system must be installed according to the manufacturer's specifications and be capable of distributing the termiticide emulsion according to the product label and the Australian Standard AS 3660 Series. Perimeter barriers consist of a horizontal barrier abutting a vertical barrier, which must reach down to the top of the footing. Delivery pipes must be placed in such a position to ensure that the requirements for both horizontal and vertical barriers as specified in the Australian Standard AS 3660 Series are met. Special attention must also be afforded to the positioning of the delivery pipes to ensure that the resultant termiticidal barriers are continuous and complete. Apply the prepared termiticide emulsion by pumping through the system according to the manufacturer's specifications. Use a minimum delivery volume of 100 L of emulsion per m³ of soil. This equates to a delivery volume of 5 L of emulsion per linear metre for a vertical barrier 300 mm x 150 mm in dimension. Pre-Construction – For use in conjunction with full soil treatment horizontal barriers only: Apply the diluted emulsion through the perimeter reticulation system as specified above. Follow instructions for Pre-Construction horizontal barrier formation.
Reticulation Systems Cavity infill & footing barriers	<ul style="list-style-type: none"> LAWN SOLUTIONS BATTLE INSECTICIDE must be used through a certified reticulation system to form and replenish cavity infill and footing barriers. The system must be installed according to the manufacturer's specifications and be capable of distributing the termiticide solution according to the product label and the Australian Standard AS 3660 Series. Delivery pipes must be placed in such a position to ensure that the requirements for both horizontal and vertical barriers as specified in the Australian Standard AS 3660 Series are met. Special attention must also be afforded to the positioning of the delivery pipes to ensure that the resultant termiticidal barriers are continuous and complete. Apply the prepared termiticide solution by pumping through the system according to the manufacturer's specifications with delivery volume of 2L of solution per linear metre of delivery pipe. Note: where this system is to be installed at the pre-construction stage, a full under slab pre-construction barrier, applied by either open wand application or suitably certified reticulation system, is also recommended. The recommended rate of application is 2 L of solution per linear metre which equates to 2 L of solution per 0.0068 m³ or approximately 7 L of sand. Should the volume of fill in the wall cavity deviate from 7 L (0.17 m x 0.04 m x 1 m = 0.0068 m³) per linear metre of wall cavity, then the amount of LAWN SOLUTIONS BATTLE INSECTICIDE solution applied per linear metre of wall cavity should be adjusted accordingly. As a guide, the target bifenthrin loading of treated sand/soil in a cavity infill situation is 110 mg/kg South of the Tropic of Capricorn and 220 mg/kg North of the Tropic of Capricorn. To facilitate more even distribution of LAWN SOLUTIONS BATTLE INSECTICIDE solution in the wall cavity, ensure that the fill is evenly compacted at the time of installation. To further enhance distribution saturation of the sand/soil in the infill is recommended at the time of treatment.
Protection of Service Poles & Fence Posts; and establishing trees including fruit trees (not to be used on bearing fruit trees)	<ul style="list-style-type: none"> Create a continuous termiticide barrier 450 mm deep and 150 mm wide around the pole or post by soil injection or rodding. For new poles and posts, treat backfill and the bottom of the hole. Use 100 L of solution per m³ of soil. Regular inspections should be undertaken to determine when and if treatment is necessary. If disturbance of the barrier has occurred, retreatment of the area affected will be required. Posts and poles may also be drilled and injected with spray solution. Note: For existing poles and posts, it is impractical to treat the full depth and underneath of such poles and posts and therefore the possibility of future termite attack from below the treated area cannot be ruled out. For establishing trees create a continuous barrier totally encompassing the root ball of the establishing tree. Application may be made prior to planting by applying emulsion to pre-dug hole or after planting via soil rodding. Roots projecting out of the treated zone may be susceptible to termite attack and may provide entry into the tree without termites contacting treated soil. LAWN SOLUTIONS BATTLE INSECTICIDE is a non-systemic insecticide. DO NOT treat mature trees as it is impossible to provide a complete and continuous barrier under and around all tree roots.
Eradication of Termite Nest	<ul style="list-style-type: none"> Locate nest and flood with insecticide solution. Trees, poles, posts and stumps containing nests may require drilling prior to treatment with termiticide solution. The purpose of drilling is to ensure the termiticide solution is distributed throughout the entire nest. Drill holes in live trees should be sealed with an appropriate caulking compound after injection.

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DIRECTIONS FOR USE – TIMBER AND TIMBER BASED PRODUCTS

SITUATION	PEST	STATE	RATE	CRITICAL COMMENTSW
Softwood Particle and Strand based boards in Hazard Class H2	All termites including (<i>Mastoterms darwiniensis</i> & <i>Coptotermes acinaciformis</i>) timber beetles	All states	0.56 mL/ kg of dry fibre	<ol style="list-style-type: none"> Add sufficient LAWN SOLUTIONS BATTLE INSECTICIDE into the glue to achieve a retention of 0.0047% mass/mass bifenthrin in the finished product. Alternatively particles or strands can be treated prior to manufacture. Where LAWN SOLUTIONS BATTLE INSECTICIDE is to be added to the glue mix, the pH of the fixed mix must not exceed 9.5.
Treatment of 2.5 mm softwood veneer plywood and LVL in Hazard Class H2	All termites EXCLUDING <i>Mastoterms darwiniensis</i>	All areas South of the Tropic of Capricorn	248 mL/m ² in the glue line	<ol style="list-style-type: none"> Calculate the glue usage by m² of LVL or plywood. Add LAWN SOLUTIONS BATTLE INSECTICIDE as required to ensure a loading of 0.004% mass/mass bifenthrin in the veneers. Following the manufacture of the plywood panel, loading of bifenthrin in the inner plies, including glue lines, should be a minimum of 0.0021% ai mass/mass.
Treatment of 2.5 mm softwood veneer plywood and LVL in Hazard Class H2	All termites	All areas	500 mL/ m ² in the glue line and faces treated to 0.003% ai mass/mass	<ol style="list-style-type: none"> Calculate the glue usage by m² of LVL or Plywood. Dilute LAWN SOLUTIONS BATTLE INSECTICIDE as required to ensure a loading of 0.008% mass/mass bifenthrin in the veneers. Following the manufacture of the plywood panel, loading of bifenthrin in the inner plies, including glue lines, should be a minimum of 0.0042% ai mass/mass. In addition, faces need to be treated to retentions of 20 g/m² or 0.003% mass/mass bifenthrin.
Treatment of 3.2 mm softwood veneer plywood and LVL in Hazard Class H2	All termites EXCLUDING <i>Mastoterms darwiniensis</i>	All areas South of the Tropic of Capricorn	248 mL/m ² in the glue line	<ol style="list-style-type: none"> Calculate the glue usage by m² of LVL or Plywood. Dilute LAWN SOLUTIONS BATTLE INSECTICIDE as required to ensure a loading of 0.004% mass/mass bifenthrin in the finished product. Following the manufacture of the plywood panel, loading of bifenthrin on the finished product, including glue lines, should be a minimum of 0.0021% mass/mass bifenthrin.

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**Harmful if inhaled
May cause cancer
May cause damage to organs (nervous system)**

Avoid breathing vapours or spray. Contaminated work clothing should not be allowed out of the workplace.
Do not eat, drink or smoke when using this product.

IF SWALLOWED: Call a POISON INFORMATION CENTER or doctor/physician if you feel unwell. Rinse mouth.
IF IN EYES wash out immediately with water for at least 15 minutes. If skin irritation or rash occurs: Get medical advice/attention.