

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

# **BRIGADE<sup>®</sup> T & O**

## **MULTI-INSECTICIDE**

**ACTIVE CONSTITUENT: 100 g/L BIFENTHRIN**

GROUP	<b>3A</b>	INSECTICIDE
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For the control of a range of pests in Turf and Ornamental plants, for the control of mosquitoes, biting midges and flies by forming Residual Surface Treatments on a range of urban interior and exterior situations, as well as control of a range of urban interior and exterior pests as specified in the Directions for Use Table.

**IMPORTANT: READ THE ATTACHED LEAFLET BEFORE USE**

1 / 5 / 10 Litres



FMC Australasia Pty Ltd,  
Unit 6, 9 Archimedes Place  
Murarrie Qld 4172  
Contact Number 1800 066 355

® FMC and Brigade are Registered Trademarks of FMC Corporation, Philadelphia, USA.

## STORAGE, SPILLAGE AND DISPOSAL

Store in closed original containers, 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 Australian Standard AS2507 - Storage and Handling of Pesticides. Do NOT allow spilled product to enter sewers, drains, creeks or any other waterways.

Triple or preferably pressure 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 bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

## SAFETY DIRECTIONS

Poisonous if swallowed. Will irritate the eyes. Avoid contact with eyes and skin. When opening the container and preparing spray, wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow length PVC or nitrile gloves and a half facepiece respirator. When using the prepared spray wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow length PVC or nitrile gloves. Wash hands after use. After each day's use, wash gloves, contaminated clothing and respirator, and if rubber wash with detergent and warm water.

## FIRST AID

If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 131126.

Material Safety Data Sheet

Additional information is listed in the Material Safety Data Sheet.

## WARRANTY

FMC 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.

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**BATCH No:**

**DOM:**

APVMA Approval No: 61928/#/0308

# = Label identifier (1L, 5L & 10L)

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## DIRECTIONS FOR USE

### RESTRAINTS

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 this product at less than label rates.

DO NOT apply to soils if excessively wet or immediately prior to or 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.

CROP	PEST	RATE	CRITICAL COMMENTS	
Roses, Carnations & other ornamental plants	Two Spotted mite ( <i>Tetranychus urticae</i> )	30 or 40 mL/100L	Apply at first sign of pest infestation and before pest populations build up to damaging levels. Repeat as necessary on 10-14 day interval.	
	Aphids	20 mL/100L	Best results are obtained from preventative rather than curative applications. Where indicated, use the higher dosage 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.	
	Caterpillars and loopers including heliothis (corn ear worm, native budworm) <i>Helicoverpa</i> spp, light brown apple moth ( <i>Epiphyas postvittana</i> ) and geranium plume moth ( <i>Sphenarches anisodactylus</i> )	20 mL/100L	Apply at first sign of pest infestation and before pest populations build up to damaging levels. Repeat as necessary on 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> ), Pointsettia white fly ( <i>Bemisia tabaci</i> Biotype B).	20 – 80 mL/100L	Apply at first sign of pest activity and repeat at intervals of 7-10 days while pest pressure persists. 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 intervals of 7-10 days while pest pressure persists. Spray to run off covering both leaf surfaces.	
	Plague thrips ( <i>Thrips imagines</i> , <i>T. simplex</i> and <i>T. hawaiiensis</i> )	20 mL/100L	Apply at first sign of pest activity and repeat at intervals of 7-10 days while pest pressure persists. Ensure that flowers and buds are sprayed. Spray to run off. 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 meters		Spray evenly over the area 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 square metre of pot area.

CROP	PEST	RATE	CRITICAL COMMENTS
Turf (eg. Lawns, commercial turf farms, parks, recreational areas, bowling greens, sports fields)	Lawn armyworm ( <i>Spodoptera maurita</i> ), Sod webworm ( <i>Heptetogramma licarsialis</i> )	1.2 L/ha (12 mL/100m <sup>2</sup> )	Mix Brigade T&O Multi in water and apply evenly over the area to be treated using spray application equipment. Use a minimum total volume of at least 200 L/ha (2 L/100m <sup>2</sup> ). To ensure optimum control, irrigate the treated area with up to 4 mm of water soon after application. Inspect treated areas for continuing activity. Reapply as required. Where a rate range is indicated use lower rates under lower 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 – 2.4 L/ha (12 - 24 mL/100m <sup>2</sup> )	
	African black beetle adults ( <i>Heteronychus arator</i> )	2.5 – 3.6 L/ha (25 - 36 mL/100m <sup>2</sup> )	
	Billbug adults ( <i>Sphenophorus brunnipennis</i> )	1.2 – 2.43 L/ha (12 - 24 mL/100m <sup>2</sup> )	
	Black ant, Coastal brown an, funnel ant, Meat ant, Sugar ant and Stinging ant only.	1.2 – 4.4 L/ha (12 - 44 mL/100m <sup>2</sup> )	
Internal & external Areas & Surrounds of Domestic, Commercial, Public & Industrial buildings and structures	Spiders	25 - 50 mL/10L	Use the higher rate in situations where pest pressure is high, when rapid knockdown and/or maximum residual protection is desired. 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 mixture per 100 m <sup>2</sup> and ensuring thorough coverage of the treated surfaces. In an outdoor situation, pay particular attention to protected dark areas such as cracks and crevices, under floors, eaves and other known hiding or resting places. For indoor use, pay particular attention to protected dark areas such as cracks and crevices, behind & under sinks, stoves, refrigerators, furniture, pipes, cornices, skirting boards & other known hiding or resting places. Do not use as a space spray.  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	50 mL/10L	Apply prepared emulsion to the point of runoff 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.
	Ants (excluding Red Imported Fire Ants), and Cockroaches,	50 - 100 mL/10L	<p>On non-porous surfaces apply as a coarse spray at the rate of 1 L of emulsion per 20 m<sup>2</sup>. When treating non-porous surfaces do not exceed the point of run-off.</p> <p>On porous surfaces or use through power equipment, spray at the rate of 1 L of emulsion per 10 m<sup>2</sup>. When treating porous surfaces do not exceed the point of run-off.</p> <p>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.</p> <p>For indoor use, pay particular attention to protected dark areas such as cracks and crevices, behind &amp; under sinks, stoves, refrigerators, furniture, pipes, cornices, skirting boards &amp; other known hiding or resting places. Do not use as a space spray.</p> <p>To control ants apply to trails and nests. Repeat as necessary.</p>

<p>Internal &amp; external Areas &amp; Surrounds of Domestic, Commercial, Public &amp; Industrial buildings and structures suitable for Residual Surface Treatments</p>	<p>Mosquitoes, Biting midges, Flies, Fleas, and Ticks</p>	<p>50 – 100mL /10L</p>	<p>To form Residual Surface Treatments, apply prepared emulsion to indoor and outdoor surfaces where insects rest or harbour. Internal harbourage sites include (but are not restricted to) areas such as walls, fly screens, behind and under sinks, under furniture and indoor plants. External harbourage sites include (but are not restricted to) areas such as building exteriors, eaves, walls, fences, also garages, sheds, gazebos, ornamental plants, bushes, shrubs, hedges, shady or damp areas around buildings. Reapply as necessary. When applying to vegetation, ensure that spray penetrates entire plant or hedge and covers both leaf surfaces.</p> <p>For perimeter or harbourage treatments, apply the prepared emulsion to a band of soil or vegetation two to three meters 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<sup>2</sup>. Higher volumes of water may be needed if organic matter is present or foliage is dense.</p> <p>On non-porous surfaces apply as a coarse spray at the rate of 1 L of emulsion per 20 m<sup>2</sup>. When treating non-porous surfaces, do not exceed the point of run-off.</p> <p>On porous surfaces, spray at the rate of 1 L of emulsion per 10 m<sup>2</sup>. When treating porous surfaces, do not exceed the point of run-off. Use the higher rate in situations where pest pressure is high, when rapid knockdown and maximum residual protection is desired. The lower rate may be used for follow-up treatments.</p>
<p>Domestic, Public, Commercial &amp; Industrial areas</p>	<p>Subterranean Termites</p>	<p>Refer to Table A</p>	<p>Refer to Table B</p>

**TABLE A: Brigade T&O Multi-Insecticide use rates for control of SUBTERRANEAN TERMITES**

Situations	All areas <b>SOUTH</b> of the Tropic of Capricorn (except Tas.)		All areas <b>NORTH</b> of the Tropic of Capricorn	
	Rate	Expected Protection Period *	Rate	Expected Protection Period *
Protection of Poles, Fence Posts, and establishing trees including fruit trees (non fruit bearing).	500 mL/100L	10 years	1.5 L/100L	5 years
			1 L/100L	4 years
			750 mL/100L	3 years
Nest Eradication	500 mL/100L	Not applicable	500 mL/100L	Not applicable
The actual protection period will depend on the termite hazard, climate, soil conditions and rate of termiticide used.				

**TABLE B: CRITICAL COMMENTS for use against SUBTERRANEAN TERMITES**

<p><b>Protection of Service Poles, Fence Posts, and establishing trees including fruit trees (not to be used on fruit bearing trees)</b></p>	<ul style="list-style-type: none"> <li>◆ 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 emulsion per m<sup>3</sup> of soil.</li> <li>◆ Regular inspections should be undertaken to determine when and if retreatment is necessary. If disturbance of the barrier has occurred, retreatment of the area affected will be required.</li> <li>◆ Posts and poles may also be drilled and injected with spray solution.</li> <li>◆ <b>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.</b></li> <li>◆ For <u>establishing trees</u> 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.</li> <li>◆ Brigade T&amp;O Multi is 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.</li> </ul>
<p><b>Eradication of Termite Nest</b></p>	<ul style="list-style-type: none"> <li>◆ Locate nest and flood with insecticide emulsion. Trees, poles, posts and stumps containing nests may require drilling prior to treatment with termiticide emulsion. The purpose of drilling is to ensure the termiticide emulsion is distributed throughout the entire nest. Drill holes in live trees should be sealed with an appropriate caulking compound after injection.</li> </ul>

**NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.**



## GENERAL INSTRUCTIONS

Brigade T & O Multi is a contact and residual insecticide/miticide. It 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 Brigade T & O Multi is applied before pest populations build up to damaging levels. Ants, cockroaches, fleas, flies, mosquitoes, spiders, ticks and wasps are controlled by direct contact with spray and also by residual action as they come into contact with treated surfaces.

**Vector Control:** Brigade T&O Multi Insecticide is a powerful knockdown and residual pesticide. While flies, midges and mosquitoes are controlled by direct contact with spray, effective sustained control is achieved by residual action as they come into contact with treated surfaces.

### INSECTICIDE RESISTANCE WARNING

GROUP	3A	INSECTICIDE
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For insecticide resistance management Brigade T & O Multi-Insecticide is a Group 3A insecticide.

Some naturally occurring insect biotypes resistant to Brigade T & O Multi and other Group 3A insecticides may exist through normal genetic variability in any insect population. The resistant individuals can eventually dominate the insect population if Brigade T & O Multi or other 3A insecticides are used repeatedly. The effectiveness of Brigade T & O Multi on resistant individuals could be significantly reduced. Since occurrence of resistant individuals is difficult to detect prior to use, FMC Australasia Limited accepts no liability for any losses that may result from the failure of Brigade T & O Multi to control resistant insects.

Brigade T & O Multi may be subject to specific resistance management strategies. For further information contact your local supplier or FMC Australasia Limited representative or local agricultural department agronomist.

### PRECAUTIONS AND RE-ENTRY PERIOD

DO NOT spray directly on humans, pets or animals. Avoid contact with food, food utensils or preparation surfaces.

**Re-entry Period for vector control and general pest 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.

**Re-entry Period for turf applications:** 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 (ie. Water-proof boots, overalls and gloves). Clothing must be washed after each day's use.

### APPLICATION

Brigade T & O Multi is a suspension concentrate requiring dilution with water prior to use. 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.

**For vector control applications:** Bistar 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.

### **MIXING**

Add the required quantity of Brigade T & O Multi to water in the spray tank and mix thoroughly. Maintain agitation during mixing and application.

### **COMPATIBILITY**

Brigade T & O Multi is compatible with commonly used fungicides such as Dithane\* M45, Antracol\*, Bravo\* 500 and Kocide\*.

### **SURFACTANTS**

Brigade T & O Multi contains a surfactant. Additional surfactant may be necessary on hard to wet plants and high volume situations.

### **PROTECTION OF WILDLIFE, FISH, CRUSTACEA AND THE ENVIRONMENT.**

Dangerous to fish and other aquatic organisms. Cover or remove fish ponds, aquariums etc before spraying. DO NOT contaminate streams, rivers or waterways with the chemical or used containers.

### **PROTECTION OF LIVESTOCK.**

DO NOT spray directly on humans, pets or animals. Before spraying, remove animals and pets from the areas to be treated. Avoid contact with food, food utensils or preparation surfaces. Cover or remove any open food and water containers. 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.

### **STORAGE, SPILLAGE AND DISPOSAL.**

Store in closed original containers, 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 Australian Standard AS2507 - Storage and Handling of Pesticides. Do NOT allow spilled product to enter sewers, drains, creeks or any other waterways.

Triple or preferably pressure 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 bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

### **SAFETY DIRECTIONS**

Poisonous if swallowed. Will irritate the eyes. Avoid contact with eyes and skin. When opening the container and preparing spray, wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow length PVC or nitrile gloves and a half facepiece respirator. When using the prepared spray wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow length PVC or nitrile gloves. Wash hands after use. After each day's use, wash gloves, contaminated clothing and respirator, and if rubber wash with detergent and warm water.

## **FIRST AID**

If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 131126.

Material Safety Data Sheet

Additional information is listed in the Material Safety Data Sheet.

## **WARRANTY**

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