

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

# Radiate

TERMITICIDE



ACTIVE CONSTITUENT: 100 g/L FIPRONIL



GROUP **2B** INSECTICIDE

For the protection of structures from subterranean termite damage and for the control of subterranean termites ~~around~~ around domestic and commercial structures as specified in the Directions for Use Table.

**TO BE USED BY LICENSED PEST CONTROL OPERATORS ONLY**

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

Contents: 1 L, 2.5 L, 3.5 L, 3.6 L, 5 L, 10 L and 20 Litres

The logo for FMC, consisting of the letters 'FMC' in a bold, stylized, outlined font.

FMC Australasia Pty Ltd  
26 / 8 Metroplex Avenue  
Murarrie Qld, 4172  
Contact Number: 1800 066 355

### **STORAGE AND DISPOSAL**

Store in the closed, original container in a cool, well-ventilated area. DO NOT store for prolonged periods in direct sunlight. Triple pressure rinse containers before disposal. Add rinsings to the 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 regulations. DO NOT burn empty containers or product.

### **PRECAUTIONS**

Residents and pets should not be allowed in a room being treated. Any spills should be cleaned up before leaving the room (refer to the MSDS). Ensure all heating/air conditioning ducts, air vents, plumbing pipes, sewers lines, floor drains, heating pipes and electrical lines/conduits are known and identified before commencing any application of termiticide. DO NOT puncture or contaminate any of these. Avoid application around edible plants.

### **RE-ENTRY PERIOD**

DO NOT re-enter treated areas until spray has dried.

### **SAFETY DIRECTIONS**

May irritate the eyes and skin. Repeated exposure may cause allergic disorders. Avoid contact with the eyes and skin. Wash hands after use. When opening the container, preparing the spray wear chemical resistant buttoned at the neck and wrist and washable hat, half facepiece respirator with combined dust and gas cartridge and elbow-length PVC or nitrile gloves. After each days use, wash gloves, contaminated clothing, 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 which can be obtained from the supplier.

### **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.

APVMA No. 68515/60036

BN:

DOM:

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# Radiate

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GROUP	2B	INSECTICIDE
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For the protection of structures from subterranean termite damage and for the control of subterranean termites and ants around domestic and commercial structures as specified in the Directions for Use Table.

**TO BE USED BY LICENSED PEST CONTROL OPERATORS ONLY**

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

APVMA No. 68515/60036



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**DIRECTIONS FOR USE: All States except Tasmania**

**RESTRAINTS:**

DO NOT apply to excessively wet soils, immediately after or during heavy rain; to avoid run-off of the chemical.  
DO NOT apply at less than label rates.

SITUATION	PEST	RATE	CRITICAL COMMENTS
Chemical soil barriers around existing buildings and structures	Subterranean termites including (but not limited to) <i>Coptotermes acinaciformis</i> , <i>Mastotermes darwiniensis</i> , <i>Schedorhinotermes</i> spp.	600 mL in 100 L water (0.06% a.c. mix)	Application by LICENSED PEST CONTROL OPERATORS: Mix the required quantity of Radiate Termiticide with the specified volume of water and apply to form a continuous chemical soil barrier (horizontal and vertical or as an external perimeter) around and under the structure to be protected as per AS 3660.2. The barrier may be created using a combination of conventional spraying and trenching. Soil injection (rodding) must only be used where trenching and treating the backfill is not possible or practical. Application of chemical barriers beneath concrete slabs and paths will require drilling and injection of termiticide using rodding equipment. Chemical barriers that have been disturbed will need to be re-applied to restore the complete barrier. For more details refer to General Instructions.
Protection of poles and fence posts			Application by LICENSED PEST CONTROL OPERATORS: Only posts and poles in contact with soil need be treated. For existing posts and poles create a continuous Radiate Termiticide barrier 450 mm deep and 150 mm wide around the post or pole by trenching and puddle treating the back-fill. Soil injection equipment (rodding) must only be used where trenching and treating the backfill is not possible or practical. Use 100 L of prepared spray per cubic metre of soil around the post or pole. Note that it is impossible to treat the soil at the bottom of a sound post or pole so future attack via this route cannot be ruled out. If new posts are being installed, then the bottom of the hole and the back-fill should be treated at installation.

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

## GENERAL INSTRUCTIONS

Chemical treatment for termite control around existing buildings should be considered to be part of an integrated approach to reduce the risk of termite attack and should be conducted by LICENSED PEST CONTROL OPERATORS. The steps below best describe the procedure for optimum termite management:

- The building owner should try to minimize water entering under and around the building and improve draining to reduce moisture accumulating in these areas.
- Ventilation of sub-floor areas should also be optimized to reduce moisture accumulation.
- The area under the floor should be kept free from debris-timber such as off-cuts of wood or firewood.
- Treat with a residual chemical soil barrier such as Radiate Termiticide in compliance with AS3660.2.
- Regular inspections should be carried out (at least annually as recommended by AS3660 Series).
- If any additional subsequent building or landscaping work causes disruption to the chemical soil treated zone it must be restored to maintain protection.

## INSECT RESISTANCE WARNING

GROUP 2B INSECTICIDE
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For insecticide resistance management Radiate Termiticide is a Group 2B Insecticide. Some naturally occurring insect biotypes resistant to Radiate Termiticide and other Group 2B Insecticides may exist through normal genetic variability in any insect population. The resistant individuals can eventually dominate the insect population if Radiate Termiticide or other Group 2C Insecticides are used repeatedly. The effectiveness of Radiate Termiticide on resistant individuals could be significantly reduced. Since the occurrence of resistant individuals is difficult to detect prior to use, FMC Australasia Pty Ltd accepts no liability for any losses that may result from the failure of this product to control resistant insects. Radiate Termiticide may be subject to specific resistance management strategies. For further information contact your local supplier, FMC Australasia Pty Ltd or local agricultural department agronomist.

## MIXING

Half fill the spray tank with water then add the required quantity of Radiate Termiticide. Stir and then top up the spray tank to the required volume. The use of this product in a tank mix with other insecticides is not recommended as the behavior and efficacy of the product may be affected. Ensure equipment is free of leaks and clean from residues of other chemicals before mixing Radiate Termiticide.

## SOIL PREPARATION

Some soils will be difficult to wet (e.g. heavy clay soils) and there will be a greater chance of run-off of liquid from the surface; in these situations it will be necessary to loosen the soil to allow spray solution to percolate to form the barrier; the soil should be scarified to a depth between 50 – 80 mm. In situations with very heavy soils the complete removal and replacement of the soil with a loam type is recommended in order to form the treated soil barrier; if this is not possible then the water volume should be reduced to ensure that run-off is minimized. A reduction in the water volume used should not be associated with a reduction in the mix rate of Radiate Termiticide - the same amount of active ingredient must be applied per given area or volume of soil; an increase in concentration of termiticide will therefore be required. The tables following indicate mix rates if application volumes need to be reduced. It is not recommended that water volumes below 3 L/m<sup>2</sup> are used.

### Horizontal Barriers

Water Rate	Dilution Rate	Concentration	Application Rate
5 L/m <sup>2</sup>	600 mL/100 L water	0.6 g/L	3.0 gac/m <sup>2</sup>
4 L/m <sup>2</sup>	600 mL/80 L water	0.75 g/L	3.0 gac/m <sup>2</sup>
3 L/m <sup>2</sup>	600 mL/60 L water	1 g/L	3.0 gac/m <sup>2</sup>

### Vertical Barriers

Water Rate	Dilution Rate	Concentration	Application Rate
100 L/m <sup>2</sup>	600 mL/100 L water	0.6 g/L	60 gac/m <sup>3</sup>
90 L/m <sup>2</sup>	600 mL/ 90 L water	0.666 g/L	60 gac/m <sup>3</sup>
80 L/m <sup>2</sup>	600 mL/ 80 L water	0.75 g/L	60 gac/m <sup>3</sup>
70 L/m <sup>2</sup>	600 mL/ 70 L water	0.85 g/L	60 gac/m <sup>3</sup>

If the barrier is being applied to a building on a slope, a furrow should also be formed of similar depth along the contour of the slope to prevent run-off of the termiticide. In situations where the surface is very dry or with sandy or porous soils the area will require moistening prior to application of chemical to prevent loss of chemical through piping or excessive percolation. The use of rodding equipment in heavy clay soil can result in an uneven distribution of the chemical. In such situations the preferred method of installing a treated zone is to trench and back-fill.

### APPLICATION

Barriers may be installed using a combination of conventional spraying and trenching. Spray equipment should be calibrated to deliver a low-pressure high volume coarse spray. It is recommended the minimum thickness of any treated soil zone be 80 mm.

### Horizontal Barriers

Horizontal barriers are to be applied to deter termites from gaining concealed vertical access to the building sub-structure. Horizontal barriers should cover all areas of soil beneath suspended floors where there is inadequate access or where there is less than 400 mm clearance. The barrier should also be continuous beneath a concrete slab-on-ground or on fill. The barrier should surround any connection between the building and the soil and completely abut any internal vertical treated zone around any sub-structure. Otherwise install perimeter barriers around each individual pier, stump, penetration point and sub-structure wall.

Horizontal barriers must be a minimum depth of 80 mm. It may be necessary to loosen the soil to allow spray solution to percolate to form the barrier; the soil should be scarified to a depth between 50 – 80 mm. Apply 5 litres of prepared Radiate Termiticide spray per square metre of soil.

When termiticide needs to be injected through a concrete slab to create a horizontal barrier, suitable equipment should be used to inject termiticide through pre-drilled holes. As uneven distribution of termiticide is likely when applying by this method under the slab, the application volume should be increased per square metre up to 10 litres of spray solution.

To ensure an even barrier is created, it is also recommended that maximum drill spacings and minimum application volumes consistent with the following table be adopted. Use a slab injector fitted with a multi-directional tip. When applying through such structures, the rod should be held vertically, at 90° to the slab, and rotated during application. Ensure a strong seal with the top of the drill hole to minimize leakage and ensure that drill holes are plugged after treatment.

Soil type	Hole spacing	Number of holes per square metre	Volume per hole to achieve 10 L/m <sup>2</sup>
Heavy clays	150 mm	36	0.3 L (300 mL) (36 x 0.3 = approx 10 L/m <sup>2</sup> )
Other soils	200 mm	25	0.4 L (400 mL) (25 x 0.4 = approx 10 L/m <sup>2</sup> )

### Vertical Barriers

Vertical barriers are designed to deter termites from gaining concealed horizontal access to a building or structure. Apply at least 100 litres of prepared spray per cubic metre of soil. Vertical treated zones should be a minimum of 150 mm wide and applied to a depth 50 mm below the top of the footing. Where a horizontal barrier is installed, the vertical barrier should be installed to be continuous with it. The most effective method of creating an even and continuous barrier is by trenching and treating the soil as it is back-filled. Soil injection equipment (rodding) must only be used where trenching and treating the back-fill is not possible or practical.

#### Trenching

Excavating a trench, treating the exposed trench, backfilling and treating the back-fill is the preferred method of installing a vertical treated zone. The trench needs to be a minimum of 150 mm wide and continue to at least 50 mm below the top of the footing. Assuming a 150 mm wide trench with a 300 mm distance to the top of the footing, this would equate to a 150 mm x 350 mm trench in which 5.25 litres of prepared spray would be applied per lineal metre of trench. Any variation of dimensions needs to be re-calculated on the basis of applying 100 litres of prepared spray per cubic metre of soil.

#### Rodding through concrete

When applying a vertical barrier underneath a concrete obstruction (e.g. a path), a soil rod with a 3 or 4-way multi-directional-tip should be used. The rod should be rotated during application (90° for 4-way tip and 120° for a 3-way tip). The tip should be inserted down as close to the footing as possible to ensure a complete vertical barrier. Ensure that chemical is applied during insertion and withdrawal of the rod. As uneven distribution of termiticide is likely when applying by this method under concrete, the application volume should be increased to 200 litres of spray solution per cubic metre of soil. Rod spacing should not exceed 200 mm and application volume should be adjusted depending on soil type (as indicated in the table following) and the depth of the footing. Assuming a 300 mm depth to the top of the footing and 200 mm spaced holes, 2 litres of prepared spray is to be applied per hole. Any variation of dimensions needs to be re-calculated on the basis of applying 200 litres of prepared spray per cubic metre of soil.

Under Concrete rodding		
Soil Type	Hole spacing	Volume per hole
Heavy clays	150 mm	1.5 L
Other soils	200 mm	2.0 L

### External perimeter barriers

An external perimeter barrier should be a minimum of 150 mm wide, a minimum of 80 mm deep and extend not less than 50 mm below the lowest point where the construction below ground could allow concealed termite ingress (or not less than 50 mm below the top of the footing where the building fabric could allow concealed termite ingress). Application considerations should reflect the installation of vertical barriers.

## **AUSTRALIAN STANDARDS**

Licensed Pest Control Operators installing a chemical soil barrier around an existing building should be familiar with the Australian Standard 3660.2, which provides information relating to the installation of chemical soil termite barriers.

## **PERIOD OF PROTECTION**

Data currently available indicates that this product, when applied as a soil barrier in accordance with this label, will be effective at deterring concealed entry into a building or structure by subterranean termites (except *Mastotermes darwiniensis*) for a minimum period of five years. A minimum period of two years applies to *Mastotermes darwiniensis*. Following these periods of protection delayed mortality effects will still be observed. The relationship between delayed mortality and cessation of feeding damage has not been entirely quantified and if in doubt more regular monitoring is recommended as appropriate for the level of activity identified.

To re-establish the conventional barrier, re-application at full rates, is required.

The actual protection period will also be affected by factors such as termite pressure, climatic and soil conditions and subsequent soil disturbance.

## **RE-INSPECTION**

As with all chemical termiticides, regular inspections (at least annually) by a competent Licensed Pest Control Operator are recommended as bridging and breaching of barriers can occur. The need for re-treatment should be determined as a result of these inspections.

## **PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT**

Highly toxic to fish and aquatic organisms. DO NOT apply to areas where surface water is present. Rinse waters and run-off from treated areas MUST be prevented from entering drains or waterways. DO NOT apply if heavy rains are expected to occur within 48 hours of application. DO NOT contaminate streams, rivers or waterways with the chemical or used containers. Dangerous to bees.

## **PROTECTION OF PETS AND LIVESTOCK**

Before spraying remove animals and pets from the areas to be treated. Cover or remove any open food and water containers. Cover or remove (as applicable) fish ponds, aquariums etc before spraying.

## **STORAGE AND DISPOSAL**

Store in the closed, original container in a cool, well-ventilated area. DO NOT store for prolonged periods in direct sunlight. Triple pressure rinse containers before disposal. Add rinsings to the 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 regulations. DO NOT burn empty containers or product.



## **PRECAUTIONS**

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## **RE-ENTRY PERIOD**

DO NOT re-enter treated areas until spray has dried.

## **SAFETY DIRECTIONS**

Will irritate the eyes and skin. Repeated exposure may cause allergic disorders. Avoid contact with the eyes and skin. Wash hands after use. When opening the container and preparing the spray, wear chemical resistant clothing buttoned to the neck and wrist and washable hat, half facepiece respirator with combined dust and gas cartridge and elbow-length PVC or nitrile gloves. After each day's use, wash gloves, contaminated clothing, respirator and if rubber, wash with detergent and warm water.

## **FIRST AID**

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