Treated zone redefines termite control

Premise 200SC

Maximum Protection. Minimum Concern.

Bayer

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Termite solution on termite biology

Termite. The greatest known threat to your home.

Termites are the most destructive wood pests. They cause damage by feeding on the wooden structure of a home, such as beams, door frames, wooden panelling, floor parquet, cupboards and books. Wooden structures and support of a home or building can be weakened by termite damage and if left untreated, could lead to a collapse.

Termites thrive in large interdependent colonies, especially in dark, moist conditions such as soil, growing trees or rotting wooden remains in the vicinity of your home. These colonies can number anything from 250,000 to one million termites. At the center of the colony is the queen whose main purpose is reproduction. The worker termites have one major role: to forage for food - cellulose materials, especially wood. Thus, it is important to prevent termites from entering your home by protecting the wooden areas and its surroundings with a reliable and effective termicide.

A revolutionary solution

Introduce yourself to Premise 200SC Insecticide, the innovative termicide from Bayer that more and more pest control operators are recommending. The unique chemistry makes it an effective, low-risk choice for termite control. By spreading throughout the soil, Premise 200SC provides a complete treated zone around your house against intruding termites – a feature we call Lateral Soil Movement.

An underground system of Mass Transit

Termites probe through the soil until they come in contact with a food source, a process known as "random foraging." From their colonies, these foragers can travel as far as 500 feet. Once a food source is located, they build a path to start their system of transporting the food back to the colony. In most cases, termites never expose themselves to light or open air, making their detection during feeding nearly impossible. Even in crossing over non-soil matter such as concrete, they will build tubes composed of soil particles to keep themselves protected.

Everything is then in place for a system of mass food transportation. Thousands of termites will travel back and forth from the food source to the nest, carrying with them the sustenance the colony needs to survive. Termite colonies work as interdependent units - they all rely on each other for survival. Premise 200SC interferes with this instinctive social behavior, contributing to the termites' demise.

Enhanced protection for your home

- Protects your property even before it is built.
- Creates a treated zone around and under the building foundation.
A new active ingredient, imidacloprid with a chemical plus nature effect on termites

Chemical and Physical Properties

Common Name: imidacloprid
Chemical Family: chloronicotinyl
Chemical Name: 1-[(6-Chloro-3-pyridinyl)methyl]
-N-nitro-2-imidazolidinimine

Structural Formula:

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  O
N  N
H N
O
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Appearance: light brown
Odor: none
Melting Point: 120 - 134°C
Molecular Weight: 255.7
Solubility: 0.51 g/liter or 510 ppm @ 20°C (water)
Also soluble in acetone, methylenechloride and dimethylformamide

Premise 200SC containing the active ingredient imidacloprid, belongs to a new chloronicotinyl group of chemicals.

Breakthrough in Chemistry

Historically, when termites came in contact with a termicide, they were controlled by one of two means. The termites are either killed or they were repelled. Termiticides that repel are at a disadvantage because foraging termites may randomly attack your home, eventually finding a break in the defense barrier. Many pest control professionals will also agree that treatments that control termites on contact can also create gaps in coverage.

Premise 200SC® Chemical Plus Nature

Chemical

When Premise 200SC is applied to the soil, a treated zone is created. Unlike other termiticides, termites cannot detect the treated zone, so they enter it and are immediately affected. Termite stop feeding, grooming and becomes disoriented.

Imidacloprid binds to the nicotinergic acetylcholine receptors at the nervous systems which leads to paralysis and eventual death. Humans and other mammals however, have few of those receptor sites that are affected by this active ingredient.

Natural

The termite are susceptible to disease caused by microorganisms or fungi found in soil. A principle part of their defence system is their grooming habits, allows the termites to get rid of the fungal spores before these spores germinate and cause disease of death. Premise 200SC interferes with this natural process by lowering defence to nature’s own weaponry.

Stability

As previously mentioned, Premise 200SC a chloronicotinyl compound, is a stable molecule over a broad range of pH values. There is no degradation of the molecule in buffered solutions of pH 5 and 7. Degradation is slow in pH 9 buffer solution with an extrapolated half-life of 355 days.
Superior biological performance and safety

What is Premise 200SC plus Nature?
Low doses of Premise 200SC, such as the edge of the Treated Zone, disorientate the termites and cause them to cease their natural grooming behaviour. Grooming is important for termites to protect them against pathogenic soil fungi. When termites stop grooming, the naturally occurring fungi in the soil attack and kill the termites. Premise 200SC makes fungi 10,000 times more dangerous to termites. Nature assists Premise in giving unsurpassed control. This control is called Premise 200SC plus Nature.

Premise 200SC has a good safety profile.

Oral LD$_{50}$: >2000 mg/kg body weight for rats.
Dermal LD$_{50}$: >5000 mg/kg body weight for rats.

Eye effects: No eye irritation was found in animal studies.

Skin effects: No skin irritation was experienced in animal studies.

Adverse effects: No evidence of any carcinogenic, mutagenic, teratogenic, neurotoxic or reproductive effects has been found in animal studies.

Low vapour pressure: Imidacloprid has a very low vapour pressure. This means it does not readily form vapour. The highest average concentration, for any type of construction, was 0.016 ng/m$^3$ in the crawl space beneath homes during the period of application. This air concentration is 80 million times lower than the estimated concentration at which no effect would be expected to occur if humans were exposed on a continuous basis.

Studies in the USA and Australia confirmed that no airborne residues could be detected even in the crawl space on the day of treatment. Lack of odour is seen by householders as a confirmation of safety of Premise and this would be very re-assuring for the clients of Pest Control Professionals.

Route of exposure: The most likely route of exposure is dermal absorption as a result of skin contact. Therefore protective gloves, overalls and chemical resistant boots should always be worn. As the risk of exposure due to inhalation is very low no respirator needs to be worn during application.

Acute effects of exposure: No specific symptoms of acute overexposure are known to occur in humans. However, based on animal toxicity data, Premise is mildly toxic if swallowed or absorbed through the skin and may cause mild eye and skin irritation.

Chronic effects of exposure: No specific symptoms of chronic overexposure are known to occur in humans.
Treated Zone that Leaves No Gaps

To stop the termites' feeding process, pest control professionals apply Premise 200SC around and directly beneath the foundation of your house. The most effective treatment is the one that provides the most continuous treated zone between your home and the foraging termites. So to provide maximum protection, pest control professionals may drill holes in the floor and trench or trench and rod around the outside of your house to inject the termicide which should then distribute throughout the soil along the foundation creating a seamless, treated zone. Premise 200SC spreads through the soil with the wetting front. This aids in obtaining a more even distribution which is particularly important when rodding or slab injection is being used during a treatment. When the soil dries, Premise 200SC binds to the soil, thus avoids leaching. When properly applied, the result is a treated zone with no breaks or weak spots. In fact, the treatment not only connects, but often overlaps the spaces between rod holes.

Take a look at the Lateral Soil Movement of Premise 200SC compared with other termiticides.

And Lateral Soil Movement is important when you consider how persistent termites can be. When they come to a typical barrier, termites may find a small break and forage through. Even the strongest concentration of a traditional termicide will prove to be ineffective if it does not make a complete barrier in the soil.

With Lateral Soil Movement, effective concentrations of Premise 200SC are distributed throughout the treated zone, even in areas furthest from the injection points. That's because Premise 200SC, if applied according to the label recommendation, is effective, at a wide range of soil conditions.

Any termicide is less effective if there are gaps in the treated area. Lateral Soil Movement (LSM), however, helps Premise 200SC achieve a more complete treated zone.

LSM refers to movement in all directions in the soil. Because of its moderate water solubility, imidacloprid moves with the wetting front of the soil. Then as the soil dries, it binds with the soil particles, ensuring a continuous treated zone.

Premise 200SC -

a termicide that allows

- termites to be killed in the treated zone
- moves beyond contact and repellant termicides
- a new termite control technology - chemical plus nature.
Effective at low dosage under wide range of soil classes

Insist on Premise 200 SC for long-term & effective protection against termites!

For a termiticide to work effectively and ensure long-term protection, insist on Premise 200 SC for your pest controller to use.

Premise 200 SC is a systemic insecticide which acts as a contact and stomach poison.

### Directions of use:

#### To protect rubber trees

<table>
<thead>
<tr>
<th>Crop</th>
<th>Pest</th>
<th>Usage Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rubber</td>
<td>Termite (Coptotermes curvignathus)</td>
<td>5ml/10 litre water. Pour 2-3 litre of mixture at the base of the tree.</td>
</tr>
</tbody>
</table>

#### To protect wood from termite infestation

<table>
<thead>
<tr>
<th>Crop</th>
<th>Pest</th>
<th>Usage Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber</td>
<td>Termite (Coptotermes curvignathus)</td>
<td>12.5ml/10 litre water. Spray or paint surface of dried timber or soak in mixture for 30 minutes.</td>
</tr>
</tbody>
</table>

#### To protect building foundation against termite attack

<table>
<thead>
<tr>
<th>Site</th>
<th>Pest</th>
<th>Rate of Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Foundation Site</td>
<td>Termite (Coptotermes curvignathus)</td>
<td>12.5-25 ml/10 litre water. Spray at 5 litres/m². Use the higher rate for longer protection.</td>
</tr>
<tr>
<td>(a) Floor Surface</td>
<td>Termite (Coptotermes curvignathus)</td>
<td>12.5-25 ml/10 litre water. Spray at 5 litres/m² before installing floor slabs. Use the higher rate for longer protection.</td>
</tr>
</tbody>
</table>

#### To protect building site and floor surfaces

<table>
<thead>
<tr>
<th>Post-construction place</th>
<th>Pest</th>
<th>Rate of Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building foundation site &amp; floor</td>
<td>Termite (Coptotermes curvignathus)</td>
<td>12.5-25 ml/10 litre water. Drill injection holes 30cm to 45cm apart. Use power spray to inject solution at 5-6 litres per hole. Use the higher rate for longer protection.</td>
</tr>
</tbody>
</table>

The EUP trials in the United State have passed the fifth year of evaluation with no termite reinestation detected.

Independent trials in Japan have shown Premise 200SC to be effective for at least five years. In Australia, Premise 200SC has been extensively tested more than any other termiticide. At all CSIRO sites Premise 200SC prevented damage to timber in soil for at least 2-3 years under heavy termite pressure.

Inspect Premise 200SC treated site twice yearly.