

SENTRICON® ALWAYSACTIVE™

TECHNICAL MANUAL



Dow AgroSciences

 **SENTRICON®**
ALWAYSACTIVE™

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1. INTRODUCTION

Termites cost Australian homeowners more than \$100 million every year. When it's your home that is infested, it is catastrophic news. Eliminating the problem is imperative. Homeowners want termites gone, with no further damage involved.

Sentricon IG (In-Ground) Termiticide Rods

have the benefits of a chemical barrier, in that the termiticide is present, forming a protective barrier around the structure from the moment of installation, without the invasive and worrisome chemical trenches. The termiticide resides within high density rods inside stations.

Sentricon protects your home all day, every day, from day one.



2. COLONY ELIMINATION

The most important attribute of hexaflumuron, the active ingredient used in **Sentricon IG Termiticide Rod**, is that it eliminates termite colonies. This means that the source of the problem or the threat to a structure can be conclusively removed. Without the ability to eliminate the termite colony, the threat is merely moved elsewhere, not necessarily away from the property in question.

Hexaflumuron is a chitin synthesis inhibitor which prevents termites from moulting. If a termite is unable to moult when nature intends, the termite will die. When the worker termites feed on the **Sentricon IG Termiticide Rod** they pass the active ingredient to other members of their colony through a behavioural process called trophallaxis. Trophallaxis is the transfer of chemical messages and nutrients between termites. Colony elimination results when the entire worker population has attempted to moult after being exposed to hexaflumuron. See more on termite biology and behaviour in section 4.

Signs that a colony is being affected by Sentricon include:

- A visible cream/white colour change is seen in the bodies of the termites, particularly worker termites (when viewed under magnification).
- Small white balls of crystallised uric acid.
- Increase in the ratio of soldiers to workers (approx. 6 to 1).
- Caste members start to exhibit odd behaviour and sluggish movements.

We recommend that these changes be recorded as evidence of colony elimination.



3. TERMITE IDENTIFICATION

It is helpful to know the genus of the termite in question and, if possible, the species because species differ in biology and behaviour. There are many publications that will assist with determining the termite species. In reality you will only need to deal with a handful of different species in any one area, and with a general understanding of the behaviour and appearance of those species you will be able to make accurate identifications.

When uncertain, take a sample of termites to an entomologist who is an expert in termite identifications. Always carry a sample container and methylated spirits to preserve the specimens for identification. Soldier or alate (winged) termites are the best caste members to collect; worker termites are generally not used for identification but can be helpful. A minimum of five termites of the same caste should be collected.



4. TERMITE BIOLOGY AND BEHAVIOUR

It is important to have an understanding of termite biology and behaviour to assist with installation and maintenance of Sentricon.

From a biology perspective the following external factors can influence termite colony behaviour:

- Availability of food sources (wood)
- Moisture
- Climate
- Geography
- Predators

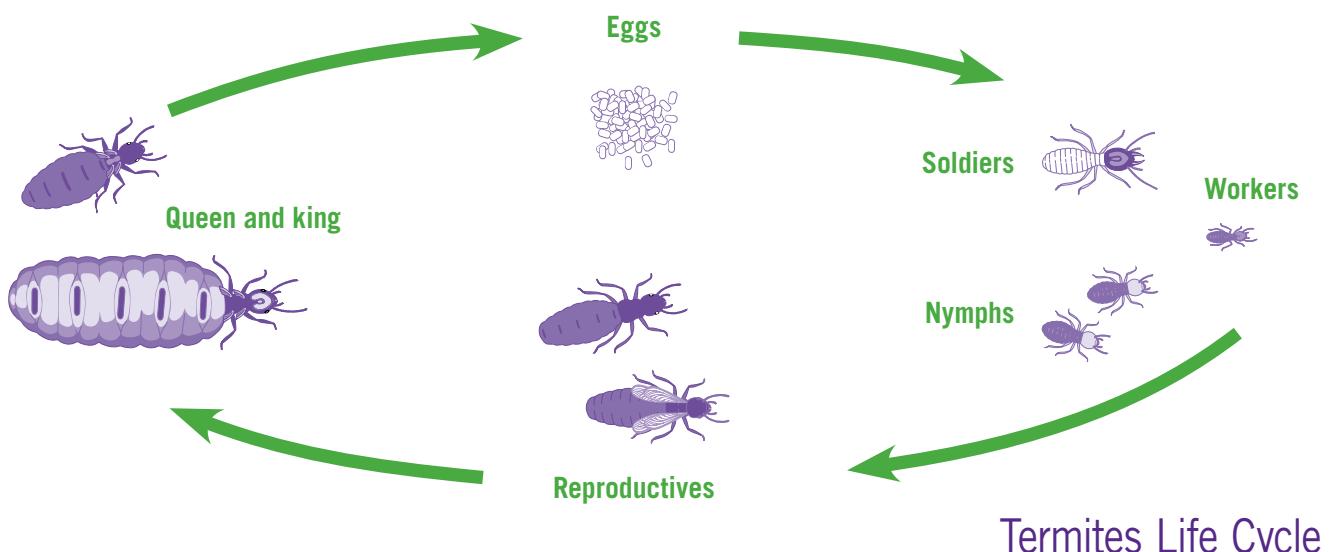
Termites are social insects and their colonies consist of several caste types. Being able to recognise the different caste types can be helpful.

The caste types that you may encounter and their respective roles within the colony include:

- **Kings and queens** initiate the colony and continue producing hundreds to thousands of fertilised eggs per day.

- **Soldiers** are responsible for protecting the colony. Their defence mechanisms include: mechanical via biting with large mandibles, chemical attack by secreting toxic or repellent chemicals, and physical defence by blocking access galleries with their bodies. The head and mandible shape of soldier termites is important for identification.
- **Workers** make up the vast majority of the colonies mature population. They are responsible for building the nest, repairing the gallery systems, gathering food and feeding the other caste members. A colony without worker termites will die.
- **Neotenics** are supplementary or replacement queens. Not all species have this caste present.
- **Alates** are winged termites released from the colony at a particular time of year to fly off in order to find a mate and start a new colony. In Australia the two main flight periods are late spring and autumn. Nests of the same species have been known to release their alates simultaneously.
- **Immature stages** include all caste types that are not yet fully grown.

From a behavioural perspective the worker termites continuously forage randomly for food sources. When termites encounter a moisture zone or physical barrier such as plumbing they are more likely to forage in and along these areas. When they locate a new food source a feeding site is established and other workers are guided there by pheromone trails. Termites can mark sites as a potential food source, but they may not begin feeding on that site until a later date.



5. INSTALLING SENTRICON

Sentricon is available in three convenient versions:

- 1) A **Sentricon Ready-To-Install station** preloaded with a **Sentricon IG Termitecide Rod** (i.e. **Sentricon RTI station**): recommended for new installations.
- 2) A **Sentricon two-piece IG station**: recommended for use in cored concrete holes. This DOES NOT include a **Sentricon IG Termitecide Rod**.
- 3) A **Sentricon IG Termitecide Rod** only: recommended in situations where a suitable station is already installed in the ground or when installing the **Sentricon two-piece IG station**.

Before installing Sentricon make sure you:

- Carry out a Termite Inspection of the structure to Australian Standard 3660.
- Ensure recommendations are made to the owner (in writing) to rectify any conditions that may reduce the effectiveness of Sentricon e.g. fixing gutters, down-pipes or leaking taps in order to reduce moisture problems from around the foundation edge; removal of alternative food sources such as tree stumps or decorative railway sleepers from the garden.
- Obtain, where possible, the termite management history of the site particularly taking note of where chemicals have been used in the past.
- Identify any underground utility lines or pipes.
- Thoroughly clean your hands of all residues such as cigarettes and chemicals. These odours can deter termites that are very sensitive to smell. To be sure, wear disposable latex gloves.

5.1. PLACEMENT OF SENTRICON STATIONS

Wherever possible, Sentricon stations should be installed in areas conducive to termite foraging. This will increase the likelihood of the Sentricon station getting 'hit' by termites.

Conducive conditions include:

- Areas that create a zone of high moisture around the foundation edge such as; air conditioning units; hot water units; irrigation systems; down-pipes and water run-off areas.
- Edges of paved or concrete paths. Moisture coming off the path makes travel for termites easier.
- Near tree stumps, trees, woodpiles or any other wooden or cellulose materials in the garden.

It is best to place Sentricon RTI stations in the soil 300 to 500 mm off a foundation wall. If the structure has a concrete path against the foundation wall, it will be necessary to drill core holes through the concrete into the soil to install the Sentricon two-piece IG station. If this is not practical, Sentricon RTI stations can be placed along the path edge where there is a natural moisture gradient. Coring in some situations will be the best option e.g. where there is a concrete driveway, patio or very wide path off the foundation wall.

Avoid placing Sentricon stations into soil that has been previously treated with chemicals. In these situations place the Sentricon station as close to the foundation wall as possible but outside of the chemical zone. Look for the telltale signs of previous chemical applications such as loose earth along foundations, filled in drill holes along concrete and check the meter box for a treatment certificate.

To achieve a continuous protective barrier, Sentricon stations should be placed around the entire structure at 3 metre intervals. Where this is impossible to achieve, place the Sentricon stations as close to 3 metres apart as practical.

5. INSTALLING SENTRICON (CONTINUED)

5.2. INSTALLATION OF SENTRICON RTI STATIONS

Sentricon RTI stations need to be placed into the soil in a hole pre-drilled with an auger. They need to be installed so that the soil cover sits flush with the soil surface (see *picture 1*) restricting entry of other insects, and helping to maintain conditions inside the **Sentricon RTI station** that are conducive to termites. Any lawn thatch, gravel or mulch needs to be removed from under the soil cover before the **Sentricon RTI station** is installed. The best way to do this is to insert a small piece of wood inside the auger channel so that when the auger is turned the wood clears a circular, flat surface for the soil-cover to sit on (see *picture 2*).

Push the **Sentricon RTI station** into the hole. Sometimes it may be necessary to use a soft rubber mallet to tap the Sentricon RTI station in if the ground is hard or stony.

In sandy soil it may be an advantage to pour water on the area before augering the hole. The water helps keep the soil firm and reduces the tendency for the hole to cave in. The **Sentricon RTI station** can also be wrapped in paper or cardboard before inserting it into the hole if sandy soil is proving to be an issue.

In clay soil ensure the hole is deep enough to allow water to drain out of the **Sentricon RTI station**.



Picture 1: Sentricon RTI station correctly installed sitting flush with the soil surface, also shows station number.



Picture 2: A piece of wood in the auger clearing the soil surface.



5.3. INSTALLATION OF SENTRICON TWO-PIECE IG STATION (CORING CONCRETE, PAVERS OR ASPHALT)

If there is no soil within a reasonable distance from a foundation edge, then a core hole through the concrete, pavers or asphalt may be required to allow installation of the **Sentricon two-piece IG stations**.

Before starting any coring it is important to locate utility lines and pipes so that they can be avoided.

Use a core-drill bit with a 75 mm inside diameter to provide a smooth access port. Insert the station into the hole, ensuring it sits into the soil, even if this requires some soil or sand to be added. Seal the hole with a stainless steel cap, otherwise known as a sealing core cap. This stainless steel cap will restrict entry by other insects, help to maintain an environment conducive to termite activity and help to prevent the station from flooding. It is also important from a safety viewpoint, as animals or children may be injured if core holes are not properly covered and secured. Contact the local distributor to order stainless steel caps. When installing a **Sentricon two-piece IG stations** through a core hole, the soil cover will usually not be used.

5.4. INSTALLATION OF SENTRICON IG TERMITICIDE ROD INTO EXISTING STATIONS

Open the top cap with the top cap key, remove the extractor and any monitoring devices that are present. Clean the station out if necessary of any tree roots, dirt and debris. Remove the protective wrapper from the **Sentricon IG Termiticide Rod** and place it in the station.

The **Sentricon IG Termiticide Rod** is hard and dry, it is not necessary to add water or moisten it in any way.

Replace the top cap, lock it with the top cap key, making it child-proof and pet-proof. Move onto the next station and repeat the process with all stations at the site.

5.5. MAKING A SITE MAP

Mark the location of each Sentricon station on a site map. To aid identification, it is recommended to number the Sentricon stations with a permanent marker pen designed for outdoor use (see *picture 1*).



6. MONITORING

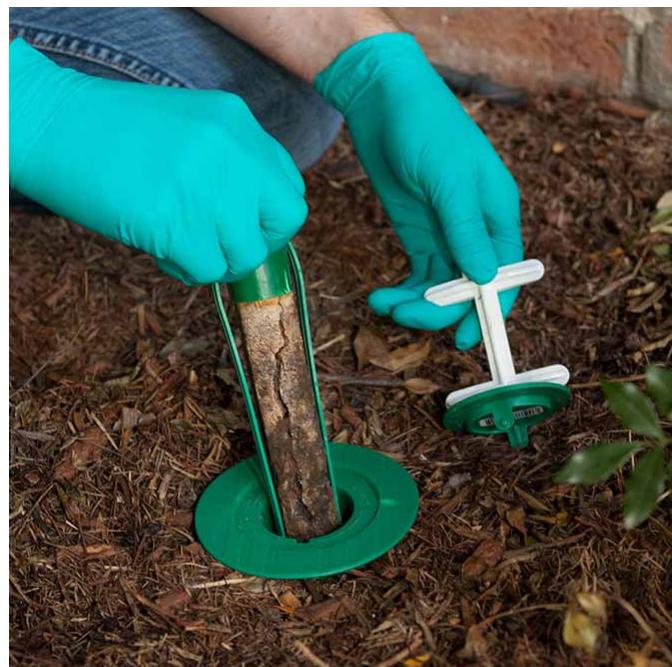
6.1. MONITORING INTERVALS

Sites should be monitored approximately every three to six months. Increase the frequency of monitoring visits when termite activity is detected. Many factors affect the feeding and foraging behaviour of termites such as time of year; species of termite; soil structure; moisture level and disturbance. Every site needs to be judged on its own merit based on a risk assessment of the location and knowledge of the termite species.

6.2. MONITORING PROCEDURES

When inspecting a Sentricon station, open the top cap and extract the **Sentricon IG Termitecide Rod** to determine if there has been any consumption. Termites will often begin to consume the **Sentricon IG Termitecide Rod** from the bottom up.

Note: Over time, **Sentricon IG Termitecide Rod** may take on different colours, may crack and develop surface moulds. This is expected and totally normal. The more gnarly the **Sentricon IG Termitecide Rod**, the more attractive it is to termites! Discoloured, mouldy or cracked **Sentricon IG Termitecide Rods** should not be replaced.



6.3. WHEN TO REPLACE SENTRICON IG TERMITECIDE RODS

If a **Sentricon IG Termitecide Rod** is more than 50% consumed it should be replaced. If less than 50% is consumed use your best judgment on replacement, based on your customer run schedule, how fast the termites are feeding and how much of the bait is consumed. Work as fast as possible so as not to expose the termites for too long.

Remember to always make a note of the date and how much of the **Sentricon IG Termitecide Rod** has been consumed for each station. This is important record keeping information for supporting any future claims of colony elimination.

Continue to replace **Sentricon IG Termitecide Rod** until there is no further feeding and no worker termites are present.

6.4. GENERAL MAINTENANCE OF SENTRICON STATIONS

When monitoring the Sentricon stations maintenance will be required in the following circumstances:

a) **The soil cover does not sit flush with the soil surface.**

In some situations the hole may need to be re-augered to help create a flat surface for the soil cover using the technique shown in *picture 2*.

b) **Re-occurring problems with other insects invading the Sentricon station or water-logging.** In these situations it may be necessary to re-position the Sentricon station away from the problem area.

Sentricon station or try a very light application of ant bait around the Sentricon station. Ensure the ant bait is not applied within 5 cm of the soil cover.

- **Wood slaters** can deter termites from establishing the area as a feeding site and so need to be prevented from entering. Entry is usually gained via an air gap between the soil-cover and the soil. Ensure the soil cover sits flush with the soil surface.
- **Earthworms** do not usually pose a problem and tend not to affect the performance of the Sentricon station.
- **Slugs** normally enter under the soil cover. If not managed, a Sentricon station can get invaded by a large number of slugs and this will likely deter termite feeding. Clean out the Sentricon station and ensure the soil cover sits flush with the soil surface.
- **Other pests** are often found in Sentricon stations that have not been installed correctly or maintained. These include earwigs, spiders, and tiny soil dwelling insects such as collembola (spring-tails), all of which should be managed through regular Sentricon station maintenance. Clean out the Sentricon station and ensure the soil cover sits flush with the soil surface.

6.5. HOW TO MANAGE OTHER INSECTS INVADING SENTRICON STATIONS

There are pests other than termites that invade the Sentricon stations. Some of these invaders are detrimental to the Sentricon station's performance (e.g. ants) while others appear to have minimal effect (e.g. earthworms).

The most common reason for Sentricon station invasion is incorrect installation of the soil-cover. Gaps under the soil cover allow entry into the Sentricon station of soil surface dwelling pests. Below are some helpful hints on how to rectify problems with other insects:

- **Ants** are predators of termites and are therefore the most destructive invaders in Sentricon stations. The preferred way to deter ants from 'living' inside the Sentricon station is to flood it with water. The ants will usually vacate the area if this happens often enough. If flooding is not successful, consider relocating the





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