



Ready Reckoner- Application Overview

Use of Termirepel[®]™ in Wood Applications

C Tech Corporation

Product Specialization
Group

Generic Requirements

Termirepel[®]™, non toxic, non hazardous and environmentally friendly anti termite master batches

A brief overview on the use of Termirepel[®]™ in Wood based Applications

TECHNICAL NOTE

TERMIREPEL®™ FOR WOOD APPLICATIONS

Termirepel®™ is a non- toxic, non- hazardous, environmentally safe additive specially developed for use as a master batch in polymeric applications as well as in coating applications for natural materials like wood.

Termirepel®™ does not kill but keeps the pests away by making use of the sensory mechanisms. Termirepel®™ is a product of Green Technology and is applicable for a variety of uses in a multitude of sectors.

It is a broad spectrum aversive repelling more than 600 species of pests including termites, caterpillars, red and black ants, aphids, leafhoppers, beetles, mites, leaf borers and many more.

In the wooden furnishings sector a number of materials are susceptible to termite damage, the finished products as well as wood in the raw stage are all vulnerable to attack.

❖ LOSSES DUE TO TERMITE ATTACK IN WOOD PROJECTS

Unprotected structures and constructions are susceptible to severe attack from termites and other pests. Termites not only attack wooden structures but also polymeric and other synthetic materials including base frameworks, furnishings, interiors etc



Termites are usually detected too late after the damage has been done and treating them after an infestation had occurred is difficult and expensive.

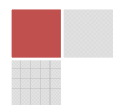
Toxic and harmful termiticides that are added to soil can leach into the ground water or volatilize leading to dangerous fumes.

Thus the current methods of termite control fall short when dealing with the termite problem in an efficient and safe manner.



❖ SALIENT FEATURES

- Non-toxic
- Non- hazardous
- Environmentally safe
- Acts as an aversive
- Large life span of 5-40 years
- Thermally stable at temperatures as high as 1400 °C
- Does not leach into Groundwater and soil
- Does not volatilize
- No harmful Fumes
- Available as a LDPE and EVA masterbatch
- Available as a lacquer for coating applications
- Can be customized according to customer requirement
- Inert in the polymer matrix
- Does not degrade in soil
- Chemically Stable



- Hazardous polymerization not likely to occur
- Not harmful if accidentally inhaled or ingested
- Safe to add in pipes used for drinking water

❖ **LACQUER COMPATIBILITY**

Termirepel®™ can be provided in a paint compatible form. It is mainly mixed with a lacquer and the same is then blended . Thus in a lacquer compatible form it can be used on a variety of surfaces easily. Thus a large number of hard to protect wooden surfaces can be prevented from pest damage by using the lacquer solution of Termirepel®™.



❖ **NON-TOXICITY**

The lacquer based solution of Termirepel®™ is non-toxic and safe for use by workers. There are no noticeable fumes and it is not a deterrent to humans.

The Termirepel®™ remains effective as long as the lacquer lasts which is about 18 months.

❖ **CRITICAL PARAMETERS**

| Sr. No. | Property | Test | Limits prescribed |
|---------|----------|------|-------------------|
|---------|----------|------|-------------------|



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|----|----------------|--|--|
| 1 | Effectiveness | Evaluating the bioefficacy of the finished products coated with Termirepel®™ | The products coated with Termirepel are resistant to termites unlike uncoated wood |
| 2. | Non toxicity | Termirepel®™ in lacquer solution | No noticeable fumes |
| 3. | Long life span | Efficacy of the coated products over a long span | The Termirepel®™ remains effective as long as the lacquer lasts ,for a span of about 18 months |

❖ **CONSTRUCTION APPLICATIONS:**

Termirepel can be customized for use in the following ways

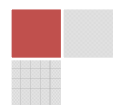
➤ **Surface Applications on Wooden surfaces**

Natural surfaces like wood as well as synthetic surfaces can be protected from damage by addition of a lacquer or solution of Termirepel®™ in suitable solvent as a coating.



Wooden structures and surfaces can be painted with the lacquer of Termirepel®™ or dipped into a solution of Termirepel®™. Wooden furnishings and other products can thus be protected from

termites.



➤ **Utility poles and Fences**

Termites damage wooden fences surrounding houses. This causes the fences to rot and collapse. To avoid this, a paint coat of Termirepel®™ can be applied on the fences preventing termite damage.

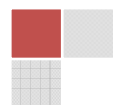
Termites also damage electric poles and telephone poles. They eat through the bottom of the poles and can also hollow out the entire interior of the pole. This can cause the poles to fall and cause accidents. There have been many instances of termites damaging communication lines and compromising high-voltage cables. Termirepel®™ added utility poles protect them from termite attack.



➤ **Shipping Industry**

Termites also cause large damage to boats in boats harbours or wooden surfaces in the interiors of the boats. Termites have been found eating a 60ft motorboat in a Florida boatyard. Formosan termites especially are known to be found in 80% of the Yellow river's boats in China. Once infested, it is very hard to get rid of the termites.

Conventional termite control methods are difficult to use on boats and yachts. For instance, rigging, cables and ropes make tenting the actual boat structure difficult. Most entrances on boats are sea-tight, but not airtight, which makes fumigation ineffective.



Boats and other marine structure can be protected from termites by a paint based solution of Termirepel®™ applied as an outer coating.

➤ **Antiques**

Termite damage to antiques is a common problem. Priceless wooden furniture and other products are damaged beyond repair due to termites. The termites cannot be removed because conventional termiticides cannot be used on antiques.

A lacquer of Termirepel®™ can be used on the antiques without affecting the antiques. Thus Termirepel®™ can be used to protect antiques.

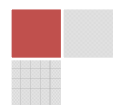


➤ **Marine Dockage**

A marine dock support is a pole often found in coastal areas and along most waterways. These poles have a high rate of infestation because of the environment they create for termites. When the poles are inserted into PVC sleeves and placed in concrete, space between the pole and the sleeve allows fresh rainwater to collect and attract subterranean termites.



These poles also tend to host drywood termites that will live directly above the subterranean termites in the pole, causing even more damage to the infrastructure.



A Termirepel®™ lacquer coating used on the poles will prevent infestation from both subterranean and dry wood termites.

➤ Cruise Lines

Bed bugs and cockroaches are a major problem on cruise lines and cruise vessels. There are numerous cases reported of infestation in the mattresses and seats with patrons being severely inconvenienced.

Termirepel®™ added to the material of the mattresses and berths can prevent infestation by bed bugs and protect passengers from harm.

❖ SAFETY AND VERSATILITY

- Termirepel®™ is thermally stable and does not degrade on exposure to heat and light. It is soil stable and does not leach out to pollute the soil or air.
- It is completely inert in the lacquer solution apart from performing its main function of acting as an aversive.
- It is compatible with a number of solvents depending on the end application.
- Termirepel®™ is RoHS and REACH compliant and FIFRA exempted.

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