

COMBIREPEL™

Non~ Toxic Anti~ Animal,
Anti~insect Concentrate



Uncompromising quality, Green, Eco-friendly solution for pests!

Why kill when we can repel!

Combirepel™ is a non-toxic, non-

hazardous, non-dangerous and environmentally safe animal and bird repellent. This unique state-of-the-art product is popularly



offered as anti-rodent or anti-animal masterbatch for plastics. Combirepel™ is manufactured in India by C-Tech Corporation and consumed globally for myriad polymeric applications. It is a product of green chemistry and smart technology. The active is stable up to 1400°C and stable in the polymer matrix. The product is compliant with international standards like RoHS, RoHS2, REACH, etc. The product is designed especially for polymeric applications.

This non-toxic product is chemosensory type of repellent based on most advanced technology of repellency through sensory mechanisms of the rodents, termites and other target species. The non-toxic nature of the product repels the target species without causing them any harm.

Effectiveness:

Laboratory tests conducted at various reputed testing institutes with Combirepel™ incorporated polymer objects (wire/ cable/ tubing/ pipes/ films) demonstrate the repellent effect of Combirepel™ contained polymeric applications.

Field tests have also been carried out wherein the samples are subjected to conditions simulated as close as to the real application. Cables samples were been buried in a mud/ gravel enclosure with a high density of wild rodents. It has been concluded in such tests that samples containing Combirepel™ pass while the control (placebo i.e. samples without Combirepel™) fails to demonstrate any resistance.

Combirepel™ is effective against a wide variety of animals, ranging from rodents like rats, squirrels, etc., woodpeckers to grizzly bears.

Unique properties:

- Effective at low concentration
- Stable at polymer processing temperature
- Stable in polymer matrix

- Does not leach out of the application
- Long active life
- Cost effective and efficient
- Does not harm beneficial species like bees and earthworm

The Mechanism:

It works on the mechanism of both Rodrepel™ and Termirepel™. Unlike the conventional “rodenticides” and “Insecticides”, Combirepel™ works from a distant and do not harm the target species. The strategy is to thwart the animal away before it comes in contact of bites the object. It works on the following principles



For Rodents:

1. **Fear:** The primary and the most pivotal defense against rodent attack. COMBIREPEL™ is a potent mixture of compounds which mimic the smell of predator urine thus exploiting the olfactory response of the animals which would approach an application. Thus rodents in majority of the cases tend to stay away from the application thus preventing damage.
2. **Discomfort:** By adding a component which causes severe distress to the mucosa of the animal in case of contact which could be accidental/ despite the fear mechanism.
3. **Aversion:** An extremely foul tasting component which is a part of COMBIREPEL™ triggers an unpleasant reaction within any rodent which might try to gnaw away at the application, ensuring that it won't bite again. Our labs have confirmed that in 100% of such cases where the rodent might try to chew the substance incorporated with COMBIREPEL™, it won't bite again.
4. **Training:** After encountering the above mentioned emotions the animal instinctively perceives that COMBIREPEL™ is something it should stay away from and stores this information for future reference. This means that the next time it encounters COMBIREPEL™ it shall be automatically repelled.
5. **Association and Conditioning:** The unpleasant experience with COMBIREPEL™ is imprinted within the animal's memory and passed on to its progeny. The next

generation of evolved animals would therefore be effectively repelled.

For Termites & insects:

1) Feeding disruption:

COMBIREPEL™ triggers unpleasant reactions in termites and other insects who try to feed or damage the application. It dissuades the insect from feeding on the application. Because of the unpleasant reactions experienced by the insects they do not feed or destroy the application in search of food.



2) Oviposition Deterrence: Insects specially like termites, ants and many more are present along with their entire colony near the application. The size of the colony increases continuously which poses a great threat to the application. COMBIREPEL™ temporarily inhibits the ability of the colony to grow in size. They temporarily disrupts the oviposition cycle of the insects. However, once the insect colony moves away from the application,

the normal oviposition cycle continues.

3) Growth inhibition: The insect life goes through various stages i.e. egg to pupa to maturity. The insects when present near the application treated with COMBIREPEL™, suffers from temporary deferral in their growth cycle. COMBIREPEL™

prevents the insect from reaching the maturity stage which helps to prevent the increase of the insect colony size. Once the insects' moves away from the COMBIREPEL™ treated application, their growth continues.

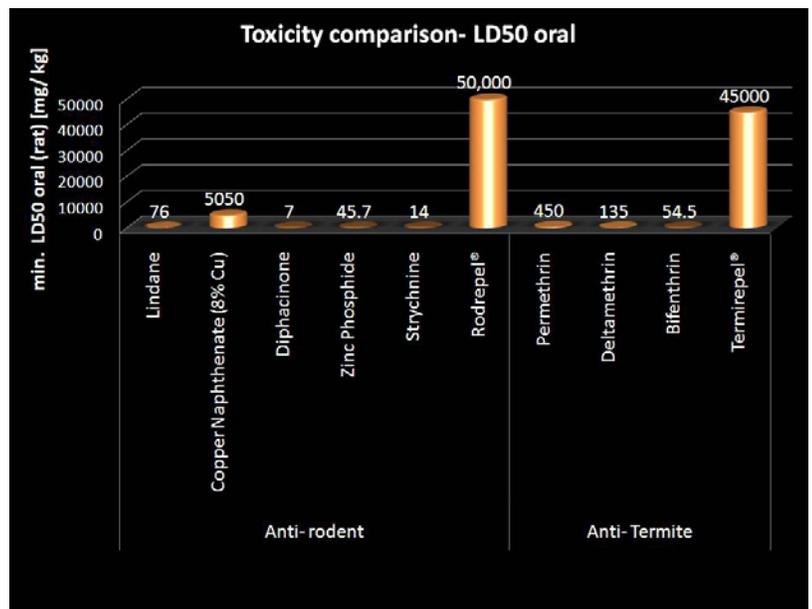
4) Mating Disruption: COMBIREPEL™ temporarily disrupts the mating cycle of the insects in order to restrict the increase of colony size of the insects. This disrupts is temporary and the mating cycle continues once the colony moves away from the application.

Toxicology & Safety:

Combirepel™ is comprised of essential oil extracts. Essential oils are highly concentrated, volatile oils that can be extracted from aromatic plants. Their use dates back to ancient times, and their wide variety of therapeutic, medicinal and culinary uses has ensured their continued popularity. About 700 different kinds of plants contain useful essential oils, and there are several methods employed to extract them, the most common of which is distillation.

Most often toxicologists use Lethal Dose and Lethal Concentration to gauge the toxicity of most chemicals; evaluated on many kinds of animals but most often testing is done with rats, mice and termites. The LD50 or LC50 is one way to measure the short-term poisoning potential (acute toxicity) of a material.

It is usually expressed as the amount of chemical administered (e.g., milligrams) per 100 grams (for smaller animals) or per kilogram (for bigger test subjects) of the body weight of the test animal. The LD50 can be found for any route of entry or administration but dermal (applied to the skin) and oral (given by mouth) administration methods are the most common.



Please Note:

- The Combirepel™ WP solution can be directly injected in the wood at high pressure or mixed with coatings and applied on surface directly
- Combirepel™ contains no toxic or environmentally harmful pesticides.
- Combirepel™ is designed to repel effectively and not kill the rodents or any other animal or human; it doesn't harm any target or non target species in any way.

It must be noted that Combirepel™ masterbatches are safe to handle. However, because of its aversive properties, normal precautions should be taken to prevent it from adhering to skin. Moreover, bearing in mind that the product is intended to be extremely objectionable to all animals, it is nonetheless safe even if ingested.

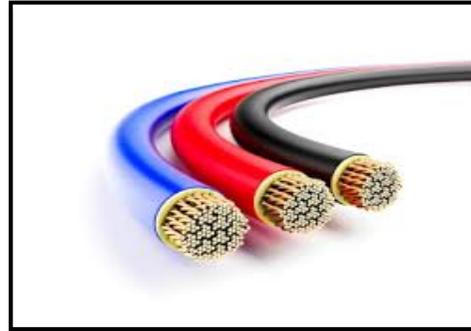
Availability:

- Masterbatch Form
- Liquid Solution
- Lacquer form



Application Areas:

Telecommunication and power- wires and cables



Agriculture- drip/ micro irrigation systems



Gas sector- gas hauling pipes



Railway carriages



Agriculture films



Aircraft arrestor systems



Trash bags and bins



Automobile- wiring harness and other engine component

Note: Special Grades for defense and nuclear applications.

Let's go green...

To reach us:

We provide customized solutions for each application. We have stood steadfastly by the principle of *uncompromising quality* since we believe that customers deserve the best. Besides commitment to the safety of the environment has formed the bedrock of all our business practices and principles.

Global Region

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Combirepel™ is a product of C-Tech Corporation. C-Tech Corporation is an ISO 9001:2000 and ISO 14001:1996 registered company.

We have made uncompromising quality a trademark & a religion for our company. C-Tech Corporation understands that products must be priced competitively & we ensure that, we offer the best possible quality at very competitive prices.

C-Tech Corporation is committed to continuous improvement in the environment, health, and safety (EHS) of our employees, customers and our community. Our goal of no accidents, or harm to the environment is the foundation of our business principles and practices. We are committed to comply with applicable local, national and international environmental and legislative requirements and continual improvement in our environmental performance.