

DuPont™ Altriset™ Termiticide Technical Bulletin



Outstanding Performance

Now there is a non-repellent termiticide that provides excellent control of termites yet has minimal impact on the environment. The team of scientists at DuPont has developed another new class of chemistry with this latest innovation, providing high-performing termite control and soil residual for ongoing structural protection. DuPont™ Altriset™, the first soil-applied liquid termiticide launched in almost a decade, is in a class of chemistry with a mode of action like no other termite control product. Laboratory and field study results prove Altriset™ halts termite feeding within hours while providing termite elimination for critical long-term structural protection. Plus, Altriset™ offers an excellent toxicological and environmental profile. In addition to requiring no signal word on the label, DuPont™ Altriset™ is the first and only liquid termiticide to be classified as reduced-risk under the U.S. EPA reduced-risk program.

DuPont™ Altriset™ Termiticide Profile

Eliminates termites in less than three months when used in accordance with the label

Halts termite feeding within hours

Provides residual protection for more than five years

Non-repellent chemistry is indiscernible to termites

Behavioral impact on termites enhances translocation throughout the colony

Mode of action like no other termite control product

Excellent environmental and toxicological profile

First and only reduced-risk liquid termiticide



The miracles of science™

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Termite Efficacy: DuPont™ Altriset™

Studies have proven that DuPont™ Altriset™ is highly effective against termites, and even halts feeding in hours. Laboratory tests have shown as termites tunnel through the treated zone, they quickly acquire a lethal dose of Altriset™. However, these termites will continue to crawl, groom and clean for extended periods after exposure.

Once affected by Altriset™, termites will begin to exhibit increased aggregation, enhanced grooming and contact with other colony members for hours. Affected termites will become more lethargic and show signs of muscle paralysis; decreased coordination and mortality will ultimately occur within several days. The delayed mortality and increased colony interaction are key reasons why Altriset™ is so effective.

Excellent Environmental Profile

DuPont™ Altriset™ is a highly effective way to control termites while also minimizing impact on the environment—something your customers are sure to appreciate. Altriset™ also has an excellent environmental and toxicological profile—requiring no signal word on the label. This achievement is one reason why the U.S. EPA has awarded Altriset™ reduced-risk status for use as a termiticide treatment. Give your customers what they're asking for: effective termite control and structural protection, with the added benefits DuPont™ Altriset™ delivers.

A package that's simple to use and easy to recycle.

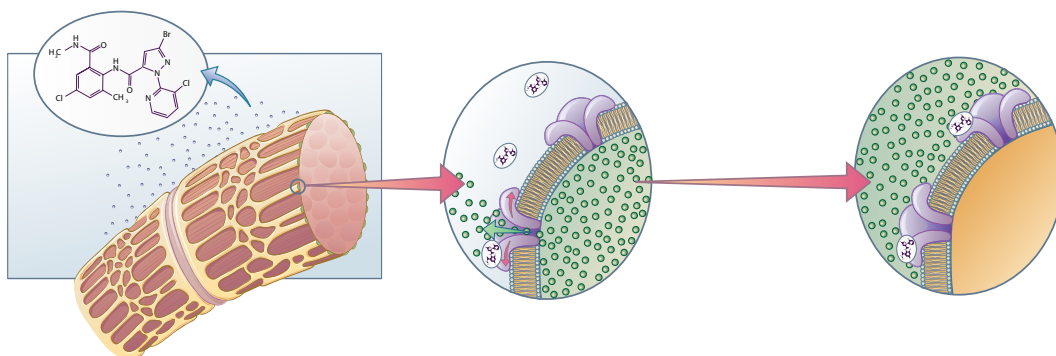
- ▶ Easily and accurately measure 8.5 oz to make 25 finished gallons
- ▶ Entire 34 oz container holds enough product to make 100 finished gallons
- ▶ Package is 100% recyclable according to ACRC guidelines



Mode of Action Inspired by Nature

Altriset™ is the first termiticide product featuring an active ingredient from the anthranilic diamide class of chemistry. This class was inspired by research into the insecticidal properties of a natural substance found in the bark of trees and shrubs of the genus *Ryania*. Calteryx®, the active ingredient in Altriset™, is a synthetic compound that affects the ryanodine receptors in the insect muscle fiber. These receptors regulate the flow of calcium into the cell cytoplasm to control muscle contraction. Altriset™ binds to the ryanodine receptor and causes it to remain open, resulting in a depletion of calcium ions that disrupts muscle contraction. Altriset™ was designed to target the ryanodine receptors of specific insects such as termites.

Calteryx® Mode of Action



Phase 1: Exposure

Insect comes in contact with or ingests Calteryx®, the active ingredient in Altriset™ termiticide.

Phase 2: Activation

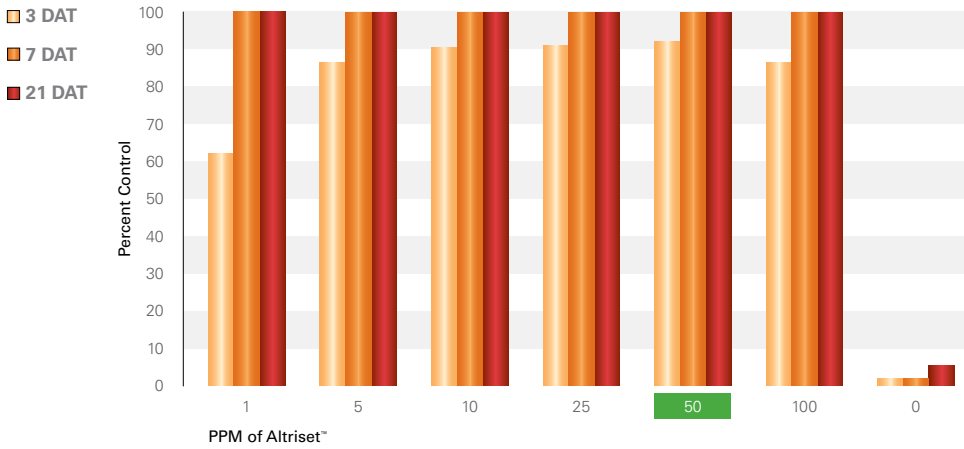
Calteryx® binds to and activates the ryanodine receptors located in the insect's muscle, and causes them to open.

Phase 3: Paralysis and Death

Calcium ions flow out of the open ryanodine receptors, depleting calcium needed for muscle contraction. Insect muscle paralysis leads to death.



DAT = Days After Treatment

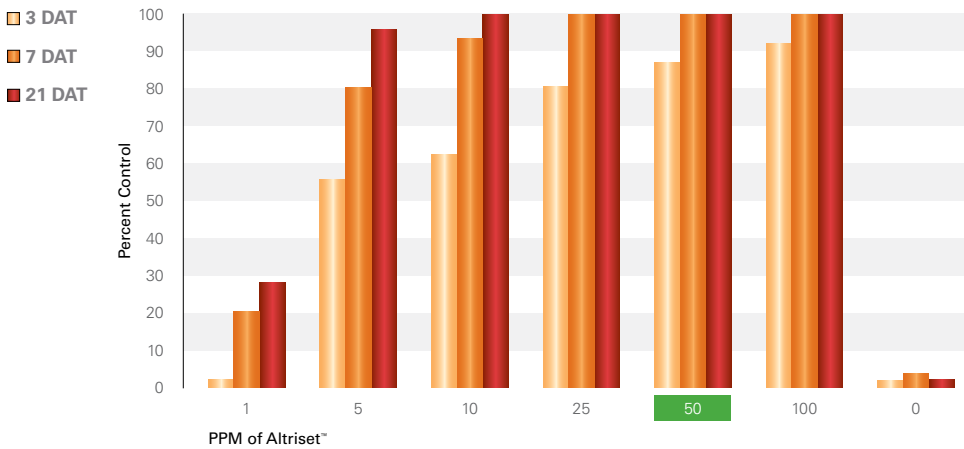


Constant Exposure Test (*Reticulitermes flavipes*)

Results:

In a constant exposure study with *Reticulitermes flavipes* on treated sand, Altriset™ provided 100% mortality after 7 days at 50 ppm (expected concentration in soil after commercial application). All rates tested eventually provided 100% mortality, even as low as 1 ppm.

Source: 2009 Louisiana State University, PR098955



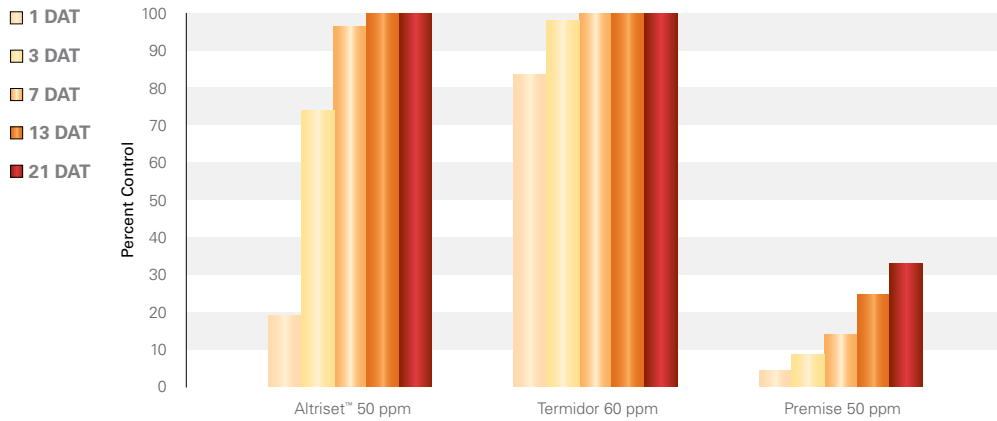
Constant Exposure Test (*Coptotermes formosanus*)

Results:

In a constant exposure study with *Coptotermes formosanus*, Altriset™ provided 100% mortality after 7 days at 50 ppm (expected concentration in soil after commercial application). Formosan termites typically require higher doses of termiticide to achieve mortality than Eastern subterranean termites. This study indicates that 1 to 5 ppm is the threshold for Formosans.

Source: 2009 Louisiana State University, PR098955





Limited Exposure Test (*Reticulitermes flavipes*)

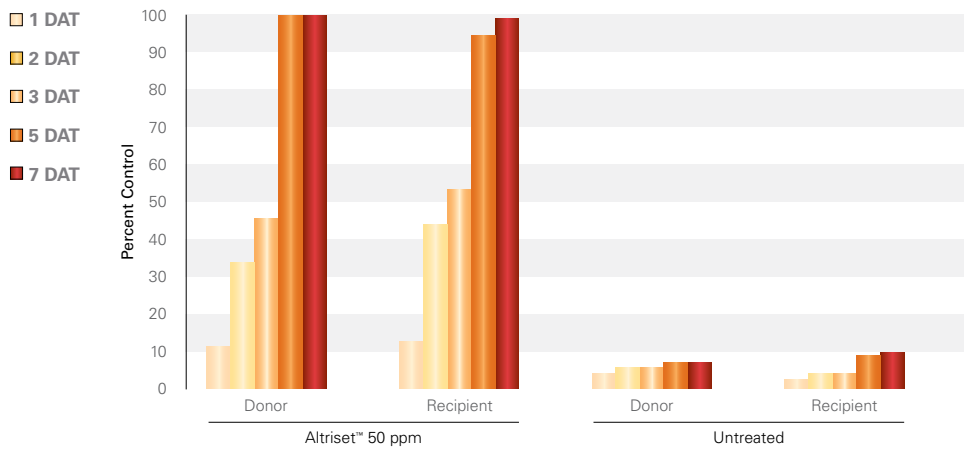
Results:

Species: *R. flavipes*

Exposure: 30 minutes on sand

In a limited exposure test in which termites were exposed to treated sand for only 30 minutes, Altriset™ at the lowest labeled rate still provided 100% control. The slight delay in action from 1-3 days allows for enhanced grooming among affected termites.

Source: 2010 Stine-Haskell Research Center, PR106206



Horizontal Transmission Test (*Reticulitermes hesperus*)

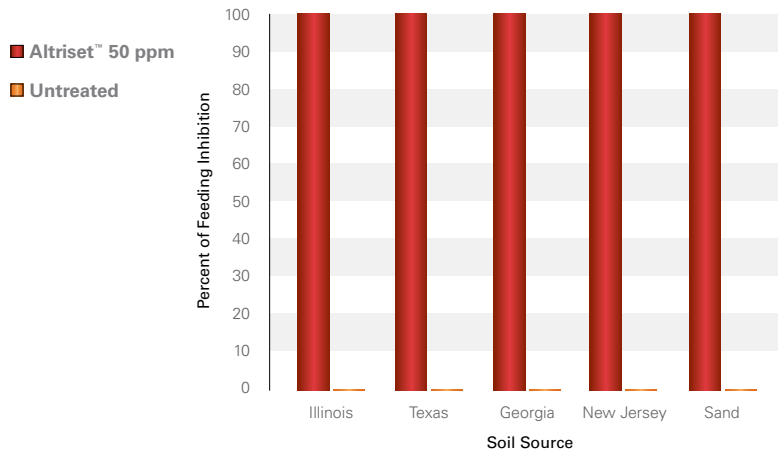
Results:

A sample of termite workers (donors) were exposed to Altriset™ treated sand for only 1 hour. After this exposure period the donor termites were placed into test arenas containing untreated, dyed termites (recipients). After 3 days both the directly exposed termites (donors) and the indirectly exposed termites (recipients) exhibited approximately 50% mortality. Both donors and recipients achieved 100% mortality within 7 days, indicating the very strong transmission potential of Altriset™.

Source: 2010 University of California Riverside, PR085810



This picture illustrates a termite worker that tunneled through sand treated with Altriset™ at 50 ppm. The worker “picked up” and ingested large amounts of Calteryx® as evidenced by the glowing areas.

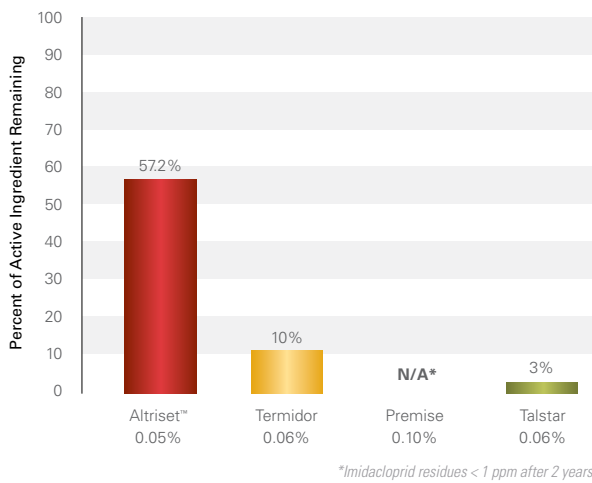


Feeding Cessation

Results:

In a laboratory test arena termites (*R. flavipes*) were allowed to tunnel in treated sand (approximately 30 minutes) or treated soil (approximately 90 minutes), then removed to an untreated arena provisioned with cellulose food source. Evaluation of paper towel disks after 2–3 days revealed that termites exposed to Altriset™ consumed no paper, while untreated controls consumed approximately 180 mm² of paper on average. Soils contained 20–97% sand and 1–5% organic matter.

Source: DuPont 2010 Stine-Haskell Research Center, PR106209

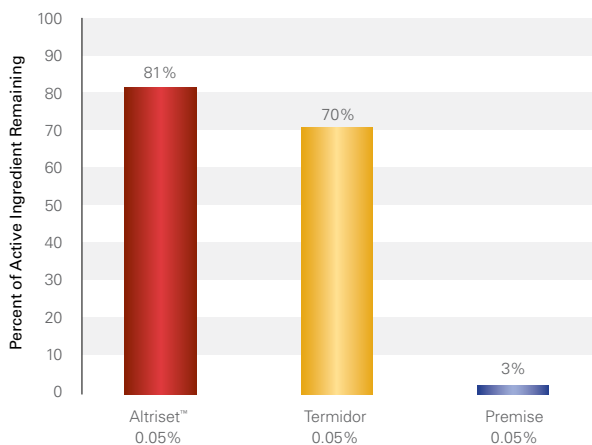


5-Year Pre-Construction Residual Test

Results:

In a modified U.S. Forest Service concrete slab plot trial conducted in Bradenton, FL, residues of Altriset™ remained significantly higher than competitive termiticides, with 57.2% of the original residue remaining even after 5 years. This indicates that Altriset™ provides long-lasting protection in a pre-construction application.

Source: DuPont Bradenton Research Center, PR039401

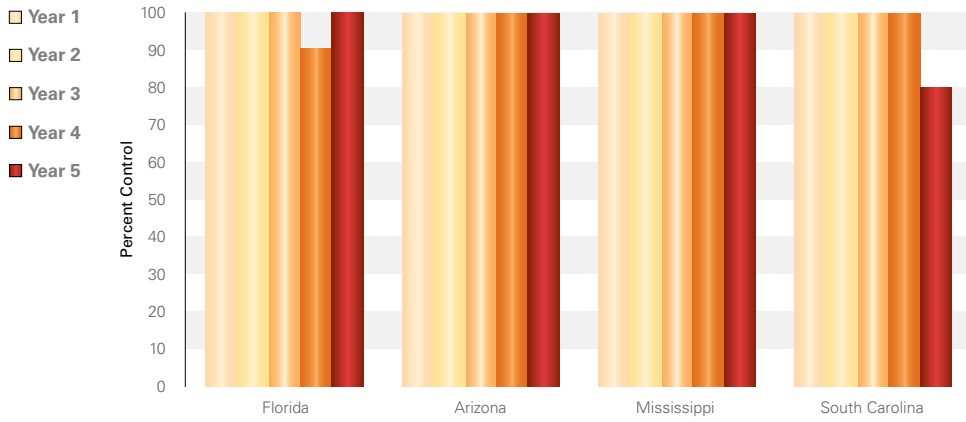


1-Year Post-Construction Residual Test

Results:

Long-term residual of Altriset™ was evaluated in a real-world field trial in Bradenton, FL, simulating post-construction vertical barrier applications following label directions. After 1 year, soil samples taken next to a structural wall that previously received termiticide applications still contained 81% of original Altriset™, indicating robust residual performance.

Source: DuPont Bradenton Research Center



5-Year USFS Efficacy Test

Results:

In the USDA–Forest Service field concrete slab tests, Altriset™ demonstrated excellent performance over the 5-year study period across all 4 states. The non-repellent and delayed action of Altriset™ was apparent in year 4 in Florida, where a single hit occurred, but was clean in year 5. A similar result occurred in South Carolina. Most notably, Altriset™ had 100% control in Mississippi, widely considered the most challenging test site.

Source: USDA Forestry Service





To learn more about DuPont™ Altriset™ termiticide, contact DuPont Professional Products at 1-888-6DuPont (1-888-638-7668) or visit us at proproducts.dupont.com.

DuPont™ Altriset™ may not be available in all states. See your local DuPont representative for details and availability in your state.

DuPont Professional Products

Pest Management Solutions:

Advion® Ant Bait Arena

Advion® Ant Gel

Advion® Cockroach Bait Arena

Advion® Cockroach Gel Bait

Advion® Fire Ant Bait

Advion® Insect Granule

Altriset™ Termiticide

Arilon® Insecticide

This reference guide is not intended as a substitute for the product label for the products referenced herein. Product labels for the above products contain important precautions, directions for use and product warranty and liability limitations that must be read before using the product. Applicators must be in possession of the product label(s) at the time of application. Always read and follow all label directions and precautions for use when using any pesticide.

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