

# PRESCRIPTION TREATMENT® TECH NOTES

February 7, 2001

PT® TRI-DIE®  
Silica & Pyrethrum  
Dust

MAKING PEST MANAGEMENT MORE PROFITABLE



PT® Tri-Die® Silica & Pyrethrum Dust is a new, cleaner looking, fluffier, naturally derived repellent dust with contact kill and long term residual. It contains 1% pyrethrum, 10% piperonyl butoxide, and 40% amorphous silica. This combination creates an environment unsuitable for, and repellent to, insects.

PT Tri-Die Silica & Pyrethrum Dust was developed with a unique formulation that flows better with less clumping when dispensed out of dusters and provides a light fluffy deposit. These qualities allow the Tri-Die dust to readily adhere to any type of surface and remain active for many months.

Tri-Die can be used in both residential and commercial environments. In wall voids and cracks and crevices, Tri-Die's light weight dust particles will penetrate deep into hard-to-reach harborage areas and entry points to insure kill, repellency and, most importantly, exclusion.



*Exterior entry points*

## How does Tri-Die Dust work?

Pyrethrum, extracted from chrysanthemum flowers, provides rapid knockdown of a broad spectrum of insect pests. Synergists, like piperonyl butoxide, are added to inhibit the rapid metabolism of pyrethrum, enhancing its effectiveness.

In addition to producing knockdown, pyrethrum irritates and repels insects, flushing them from their harborages. The pyrethrum and piperonyl butoxide killing power is enhanced by the absorbing quality of silica gel. Once Tri-Die contacts an insect, it begins to absorb the oily or waxy outer layer of the cuticle, resulting in loss of moisture and death due to desiccation.

In a research test conducted in 1996 by Morris Research & Services, Inc. on adult male German cockroaches on unpainted plywood, using two replications of Tri-Die, the averaged results are as follows:

4 hour exposure. Data 1 hour after exposure

Material	1 DAT	14 DAT	28 DAT
Tri-Die Dust	100%	100%	93%
Control	0%	0%	0%

4 hour exposure. Data 72 hours after exposure

Material	1 DAT	14 DAT	28 DAT
Tri-Die Dust	100%	100%	100%
Control	0%	0%	0%

DAT-days after treatment

## Where can Tri-Die be used?

Tri-Die can be applied to voids, cracks and crevices and other areas where insects travel and seek harborage. Tri-Die can be used indoors and outdoors with special emphasis on exterior entry points.



Attic Spaces

### What is Tri-Die labeled for?

#### Tri-Die Silica & Pyrethrum Dust is labeled to kill the following insects:

Ants, Bedbugs, Bees, Booklice, Boxelder Bugs, Carpet Beetles, Carpenter Ants, Centipedes, Clover Mites, Cluster Flies, Crickets, Cockroaches, Drywood Termites, Earwigs, Elmleaf Beetles, Firebrats, Fleas, Ground Beetles, Lice, Millipedes, Pillbugs, Scorpions, Silverfish, Sowbugs, Spiders, Stored Product Pests, Powder Post Beetles, Ticks, and Wasps.

#### Tri-Die is labeled for use in the following sites:

Apartments, Campgrounds, Food Storage Areas, Homes, Hospitals, Hotels, Food Processing Plants, Motels, Nursing Homes, Office Buildings, Resorts, Restaurants and other Food Handling Establishments, Schools, Supermarkets, Transportation Equipment (Buses, Boats, Ships, Trains, Trucks, Planes), Utilities, Warehouses, and other Commercial and Industrial Buildings.

### What are naturally derived products?

Insect control agents that occur naturally or are derived directly from naturally occurring minerals, plants, or micro-organisms are **naturally derived products**.

These products are well suited for sensitive environments like Hospitals, Schools, Day Care Centers, Nursing Homes, and any other sensitive area where insecticide application is needed. These products are essential for low impact, reduced risk programs.

### What naturally derived materials does Tri-Die contain?

#### Pyrethrum

*Chemical Composition:* Organic esters of chrysanthemic acid and pyrethric acid

*Source:* *Chrysanthemum cinerariaefolium*

*Mode of Action:* Gated nerve channel disrupter

*Toxicity:* LD<sub>50</sub> 1500 (rats)

*Solubility:* None in water, soluble in organic solvents.

*Repellency:* High

*Odor:* Slight odor, stronger when formulated with synergists and solvents

*Residual:* None to moderate, depending on formulation

*Strategy:* Flushing, repellency, knockdown



*Chrysanthemums in Kenya, Africa*

#### Silica Aerogel (Amorphous Silica Dioxide)

*Chemical Composition:* Inorganic SiO<sub>2</sub>

*Source:* Sand

*Mode of Action:* Desiccation, absorption of protective wax (lipids) leading to water loss.

*Toxicity:* LD<sub>50</sub> 3160 (rats)

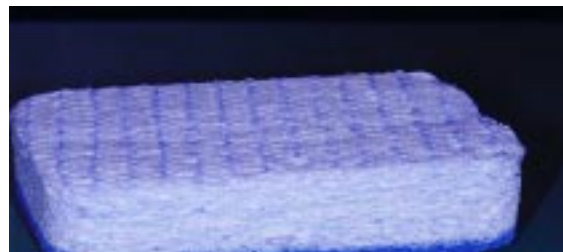
*Solubility:* None (water)

*Repellency:* High

*Odor:* None to slight when formulated with pyrethrum

*Residual:* Excellent, months

*Strategy:* Exclusion, barrier treatment



*Silica absorbs moisture like a sponge*