

# PCT Cable Technology

White Paper

## Predator™ Rodent Deterrent Drop Cable

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### Abstract

Fortunately, we no longer have to put up with cable service outages caused by squirrel chews in drop cable. The solution to aerial plant damage is the use of a powerful combination of aversives in the cable jacket to deter chewing. The additives in PCT Predator™ rodent deterrent drop cable were first studied by the USDA who found that a combination of two or more of these natural compounds produced a synergistic effect amplifying their effectiveness. The ingredients used in PCT deterrent cable were chosen both for effectiveness and for safety. They will do no harm to people, plants or animals and will do no damage to the environment.

### 1. Introduction

The need for a solution to squirrel chews in the drop cable plant has been recognized for a long time. Previous attempts to solve this problem involving repulsive colors, hot sauce and metal armor have failed because squirrels have an insatiable need to chew and they are adaptive animals. A solution has been found that teaches or alters the behavior of rodents so that they learn to stay away from PCT deterrent drop cable.

### 2. Modified Jacket

Normally, a PVC jacket is sufficient to protect aerial drop cable from the environment. However, rodents (like mice and squirrels) are known to chew coaxial and fiber optic cables causing severe damage. The USDA conducted research with two powders that are extremely aversive: denatonium benzoate (Figure 1); and capsaicinoids (Figure 2). Individually, they were somewhat effective as deterrents, but when combined in proper proportions, they became extremely effective in preventing chewing of cables. These additives are blended uniformly into the deterrent PVC jacket resin: DPVC.

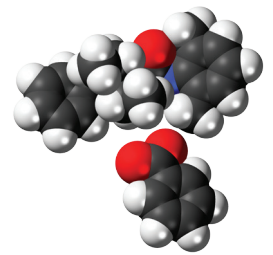


Figure 1

Denatonium benzoate is the most bitter chemical compound known to man



Figure 2

Capsaicin and several related compounds called capsaicinoids are an active ingredient in chili peppers

### 3. How it Works

Why do animals chew on plastic materials? Because they smell good and taste good. PCT deterrent jacket with DPVC alters the natural appeal in the following ways:

- DPVC has an unmistakable taste that is unappetizing to rodents.
  - When the rodent bites into the DPVC, they are introduced to an extremely foul-tasting and spicy compound.
- DPVC has an extraordinary pungency that causes severe distress to the mucus secreting membranes of the rodent making the mouth, nose and eyes burn.
  - This combination of experiences causes the rodent to fear the DPVC jacket and, in the future, the rodent associates the odor with the negative experiences.
- These negative interactions lead to behavioral modification and the rodents avoid the drop cable in the future.
  - Rodents remember the bad experience.
  - Rodents pass on the fear and unpleasant reaction to their offspring and other rodents in the vicinity.



### 4. Typical Applications

The aerial installation is most susceptible to squirrel chews, therefore wherever these animals are present, we recommend using a rodent deterrent PVC jacket. Whenever damage occurs with conventional drop cable, replace the cable with the rodent deterrent type. A green stripe present on the PCT Predator™ rodent deterrent drop cable allows easy identification by installation technicians.

### 5. Environmental Concerns

Caring for our environment is important to PCT. Our approach is to avoid causing injury to the rodents and protect technicians, the public and the environment by not using harmful chemicals. So, special care has been taken in selecting DPVC ingredients that are both very effective and pose no threat of exposure to people, animals or plant life. Furthermore, the additives are captured within the plastic and do not leach into the environment. Their effectiveness is sustained over time and will last the lifetime of the drop cable.