



12220 Maycheck Lane  
Bowie, Maryland 20715 USA  
email: [service@aversiontech.com](mailto:service@aversiontech.com)  
tel: +1 202-657-6300  
fax: +1-202-355-6661  
[www.aversiontech.com](http://www.aversiontech.com)

## Rodents vs. Repela An Unfair Fight

### **The Problem**

Animals, particularly rodents, cause untold damage to wires, cables and piping by chewing on these plastic products. Rodents chew because they must (their teeth continue to grow during their lifetimes and must be constantly worn down) while deer and other animals chew in search of food or out of boredom. Whatever the reason, the very act of chewing damages the wire or pipe rendering them useless – or worse, creating a dangerous situation. At the very least, the damage these animals cause can result in expensive repairs.

Particularly troublesome are rodents, which are present everywhere and can cause massive damage to power cables and wiring in homes. They chew on plastic doors, sidings, benches, molded plastic parts, cables, wires, automobile wiring – practically anything. In the wild too, several animals chew on products made of plastic such as plastic bins and containers, cables and pipes. Rodents chewing on cables expose the wiring inside of them, potentially causing a short circuit and a fire.

How severe is the problem? Well, it ranges from mild to deadly.

### **Mild –**

*In response to a complaint about sagging cable and fuzzy TV reception, a Comcast crew...discovered the drooping cable wasn't the cause of bad reception – it was a hungry squirrel with an apparent taste for rubbery wiring. Yep, seems a rodent had chewed his (or her) way into the wire that feeds the house and created havoc.*

– Bowie Blade News, Bowie, Maryland Nov. 30, 2006

### **Troublesome –**

*The New Zealand Stock Exchange was forced to close for several hours on Monday after rodents apparently chewed through a fibre-optic communication cable, leading to the collapse of the country's telecoms network.*

*Rats are thought to have chewed through a main communication cable on the country's North Island. Services were then routed to different parts of the network, but at the same*

*time a Telecom New Zealand worker accidentally damaged a second main cable in another part of the country, causing the national telecoms infrastructure to collapse.*

*Trading on the New Zealand Stock Exchange was halted at 11.01am due to the network failure and didn't start up again until 4pm, although the exchange stayed open for an extra 30 minutes until 5.30pm.*

- Finextra.com, June 22, 2005

### **Dangerous -**

*How hot was it during the recent heat wave? Hot enough to pop dozens of the city's 250,000 manhole covers. It's a recurring semi-apocalyptic summer event here, sometimes with serious side effects. After one exploded in the Bronx on July 27, six people were sent to the emergency room for smoke inhalation. Ten days earlier in Queens, a cover was launched with enough force to set fire to two cars and cause the wiring overhead to catch fire. So how does it happen?*

*The copper electrical wiring running beneath the streets is hung on the manhole walls and sheathed in insulation, which can crack and warp owing to age, chemical corrosion, or hungry rats.*

- New York Magazine, August 14, 2006

### **Potentially deadly -**

*... video was shot by a long-time employee at the overhaul base at Kansas City International Airport. The whistleblower did not want to be identified but did want to expose a hidden secret onboard a Boeing 767 passenger plane. The whistle blower said, "We had to take the chairs off and that's when everybody saw mice running around on the floor and one ran down one of the mechanic's arm." The plane arrived in Missouri April 30.*

*The whistleblower explained, "There's feces all along this edge right here. It's throughout the whole aircraft." The whistle blower said workers found nests in air vents and dead mice in emergency oxygen masks. When mice would get hungry, they ate insulation and chewed through wires. "If they shorted themselves and caused a fire, it would go through that cabin so fast, we could have lost some lives," said the whistleblower.*

- KSDK-TV, St. Louis, MO, July 12, 2006

### **The Research**

So, why are animals attracted to wires, cables and other plastics? Studies of animal behavior have shown why animals are drawn to plastics products – the plasticizers and the aromatic odors of polymers, the bright colors and the texture of polymer products are all responsible for animals being attracted to plastic goods. In rodents, like mice, squirrels, rabbits, and rats, the incisors grow throughout their lifetimes and chewing is a necessity to keep the incisors worn down. For them, plastics are a very attractive “snack”.

### **The Solution**

One unique solution is Repela™, a unique chemical composition that halts animals in mid-bite and alters their behavior in the future. Repela is an additive used in the

manufacture of plastic materials that is so powerful, that animals will avoid products that incorporate this additive when they sense its presence. Materials impregnated with Repela will stop animals from chewing on them for as long as the material is intact.

What the research has proven is that animals chew on plastic materials because they look good, smell good and taste good. Repela alters that attractiveness. These changes successfully solve the problem of animal damage, whether is grizzly bears in North America, woodpeckers in Norway, birds in Italy or insects everywhere.

### **How Repela Works**

Repela has an odor that is both distinct and repellent to animals.

When the animal bites into a plastic containing Repela, they will immediately experience an extremely unpleasant taste and an inflammation of the eyes, tearing of the eyes, and a burning of the mouth.

The combination of bad physical experiences causes an animal to fear the plastic, and in future, the animal will associate the odor with that bad experience. This leads to behavior modification and animals avoid products with that odor.

The fear response and unpleasant reaction of animals biting into Repela infused plastics is communicated to other animals that witness the reaction. The other animals learn through observation to avoid plastics that smell of Repela.

Animals not only remember the bad experience, it is believed that they pass this knowledge on to its progeny.

### **Environmental Concerns**

Aversion Technologies is guided by the principle of doing no harm to people, plants, or animals and no damage to the environment. Our approach is to not injure the animal or add hazardous chemicals to the environment. Using Repela meets these goals. Repela does not harm animals. Furthermore, Repela is captured in plastics and does not leach into the environment. The chemicals used, both natural and synthetic, break down quickly in the environment, usually in less than three weeks.

### **The Conclusions**

It is possible to actually train animals and modify their behavior using Repela. Animals need not be harmed to alter their behavior, and damage to the environment can be completely avoided by using non-toxic Repela.