

an Antidote *to* Antifreeze?

By Adam M. Roberts

WARNING: Contains Ethylene Glycol. Solution is Poisonous to Animals.

You don't have to be a scientist to read the back of a bottle of regular, store-bought automobile antifreeze and understand the potential dangers of this commonly used product.

In fact, a simple Internet search with the words "antifreeze," "pets," and "death" turns up thousands of hits. From coast to coast, people and animals have been harmed, even killed—both accidentally and intentionally—simply by ingesting a small amount of antifreeze containing ethylene glycol.

Earlier this year, two families, one in Pennsylvania and one in Vermont, had to euthanize two of their dogs after they ingested antifreeze. Last year, in Missoula, MT, Penny Sperry was wishing her son farewell as he left for Iraq with the Montana National Guard. The family dog, Riley, fell terribly ill and was diagnosed by a veterinarian as having ingested antifreeze. In two of these cases, it is suspected that the poisonings were intentional. In Washington state, Donna Clark is standing trial for allegedly poisoning a neighbor's three cats with a bowl of chicken and antifreeze.

It's quite simple, really: if your beloved companion animal inadvertently walks through a puddle of antifreeze and then licks her paw, she could die.

But companion animals are not the only ones at risk. According to the U.S. Fish and Wildlife Service,

an imperiled California condor, recently released back into the wild, died from ethylene glycol poisoning. Four cheetahs died of liver failure at Disney's Animal Kingdom in Orlando, FL; they had ethylene glycol in their systems. An Alaskan polar bear was found dead with ethylene glycol present in the soil under the carcass.

Equally shocking is the broad portfolio of cases involving humans using antifreeze as a murder weapon: a Boston man killed his wife with antifreeze-laced Gatorade; a woman in Ottawa reportedly poisoned her husband with a lethal combination of wine and antifreeze; a New Jersey woman allegedly poisoned her brother-in-law with an antifreeze cocktail including pineapple juice and maraschino cherries. Sadly, the list of similar news reports of intentional antifreeze poisonings is seemingly limitless.

Toxin in Your Tank

What is ethylene glycol and

why is it so harmful? Ethylene glycol is a water-absorbing substance that is not only found in automobile antifreeze, but also in airplane de-icing sprays as well as hydraulic brake fluids and even ink for stamp pads. It is clear, colorless, and odorless; but perhaps of

greatest relevance with respect to animal poisonings, it is sweet tasting (I actually considered tasting a drop for this article—I did not).

According to the Agency for Toxic Substances and Disease Registry at the Centers for Disease Control (CDC), “Exposure to ethylene glycol can remove water from the tissues in your body and cause loss of body water in the form of urine... When ethylene glycol breaks down in the body, it forms chemicals that crystallize; the crystals collect in your body and can affect kidney function.”

Ingestion of ethylene glycol leads to confusion, hallucinations, nausea and vomiting, hyperventilation, and eventually renal failure. Ultimately, according to the CDC’s Public Health Statement, “Swallowing a certain amount of ethylene glycol can kill you.”

Estimates for the number of animals—dogs and cats especially—who succumb to ethylene glycol poisoning each year vary widely, from 10,000 to 90,000 in different published reports. However, one would have to assume that the actual number of deaths is much higher, given that many people will not be able to identify their animals’ deaths as the result of such poisoning.

The antifreeze industry has been very proactive in educating consumers about taking sensible precautions to prevent animals, children, and others from unintentionally or unknowingly consuming antifreeze. It packages antifreeze in containers with child-resistant caps and foil safety-seals. Consumers are warned to keep the antifreeze in the original containers out of reach of children and animals; dispose of used antifreeze bottles safely, and

keep pets indoors to prevent them from being inadvertently (or purposely) poisoned in the neighborhood.

An Additional Ounce of Prevention

The Doris Day Animal League, however, knows that accidents happen—the most conscientious safety measures can fail and antifreeze spills will occur. That’s why DDAL has long been a leader at the state and national levels in advocating the manipulation of antifreeze products to make them

less palatable and less enticing to animals and children.

DDAL advocates a very simple solution: add a substance called “denatonium benzoate” (DB) to commercially available antifreeze. Denatonium benzoate is commonly considered the bitterest substance known. It has been used safely for over 40 years in other household products and toiletries to prevent accidental poisoning.

Three states have already taken measures to ensure that DB is added to antifreeze—DB has been required in antifreeze in Oregon, for instance, since 1995. Many other states have bills under consideration.

Beverlee McGrath, DDAL’s Western Regional Director, was instrumental in shepherding a bill through the California legislature to require the addition of a bittering agent to antifreeze sold in the state. Twice vetoed by other governors, Gray Davis signed the law in 2002. “It doesn’t take a rocket scientist to figure out how many animals die every year because of antifreeze,” said McGrath. “I watched a video of dogs dying in a vet’s office after ingesting antifreeze. One puppy is dying right in front of the camera.” Lauren Ward, who lost her dog Angus to antifreeze poisoning in 2000—a small green puddle of antifreeze in the driveway was all it took—was instrumental

in the California law’s passage. It was her Assemblyman, Joe Simitian, who introduced the ultimately signed bill.

New Mexico recently followed California’s lead and has emerged as a national leader on the subject. Scooby, a golden retriever, survived a gunshot wound but had to be euthanized after consuming antifreeze. First, Albuquerque passed “Scooby’s Law” to require DB in antifreeze. Albuquerque Mayor Martin Chavez lamented Scooby dying, “an excruciating death by antifreeze poisoning,” which “highlighted the need for this common-sense ounce of prevention.” Gov. Bill Richardson signed a statewide version of Scooby’s law on March 31, 2005, recognizing that the law protects, “those who can’t protect themselves from painful suffering and ensure[s] the safety of our children.” Ultimately, Mayor Chavez took his laudable crusade nationwide by asking the United States Conference of Mayors to consider the issue. At its 72nd meeting in Boston in 2004, a resolution was indeed approved, which, “urges Congress to help cities protect children and animals by enacting legislation to require denatonium benzoate as an additive to antifreeze that contains ethylene glycol.”

Doris Day Animal League’s Nancy Blaney commented, “Following the pioneering steps by Oregon, California, and



New Mexico legislator Kathy McCoy, who sponsored the New Mexico bill, lost her dog Cujo (top) to antifreeze poisoning. Otis and Angel (bottom) were intentionally poisoned with antifreeze by a neighbor. Despite an indictment on two counts of felony animal cruelty for the poisoning, the perpetrator struck a plea bargain and received no jail time—only a sentence of five years probation and a \$1,000 fine.

New Mexico, there has been a groundswell of activity at the state level, from Maine to Missouri. Many states recognize the value of adding another layer of protection from antifreeze poisoning. But this approach leaves some children and animals protected while others are not. That's why we need a uniform national standard."

As a result, the "Engine Coolant and Antifreeze Bittering Agent Act of 2005" (S. 1110) and the "Antifreeze Bittering Act" (H.R. 2567) have been introduced in the U.S. Senate and House of Representatives, respectively. The legislation amends the Federal Hazardous Substances Act to require antifreeze/engine coolant to contain a bittering agent, thus rendering the product unpalatable. The federal bill is modeled on New Mexico's existing legislation.

The bills' sponsors—George Allen (R-VA) and Mark Pryor (D-AR) in the Senate, and Gary Ackerman (D-NY) and Dana Rohrabacher (R-CA) in the House—have called the legislation, "a smart solution to a serious problem," and "practical." According to Ackerman, "The legislation will also help combat the recent wave of 'Death by Antifreeze' cases in which individuals and pets were murdered when their food and drinks were laced with antifreeze. We can avoid future tragedies by adding a bittering substance to antifreeze, which would ensure that a toxic dose of antifreeze could never be voluntarily ingested."

Paul Zurawski, representing Honeywell/Prestone, suggested that DB is already known to be compatible with engines and the production of antifreeze. It's also fairly inexpensive, increasing the cost of a gallon of antifreeze by less than three cents. The coalition formed between animal advocates and the industry, including industry leaders such as Prestone, is an impressive one. Zurawski added, "We appreciate the integrity and willingness of DDAL to work together with us successfully in the Senate and look forward to a partnership to help move the legislation through the House as well."

The Senate Committee on Commerce, Science, and Transportation approved the legislation on March 14, 2006, and it now awaits full Senate consideration. DDAL Legislative Director Sara Amundson testified before the Subcommittee on Consumer Affairs, Product Safety, and Insurance in July 2005 and told the Subcommittee that federal action is necessary. "Accidents can happen despite the best prevention and precautions, and sadly there are always those who seek an easy way to harm animals," Amundson said. "This legislation will do much to prevent both kinds of tragedies from happening." Several states are considering resolutions urging Congress to pass these bills.

Admittedly, as is the case with most federal legislation, concerns have been raised. Will addition of denatonium benzoate eliminate antifreeze ingestion by animals and people completely? Are other substances equally effective? What are the environmental impacts of using denatonium benzoate?

DDAL and its allies in this effort have gone to great lengths to address these myriad issues in the latest version of the bill. Denatonium benzoate is the most effective bittering agent currently available—even if poisonings are not eliminated, they should be reduced dramatically. According to the 2001 California Integrated Waste Management Board staff study, "the addition of DB may not prevent exposures, but it would significantly reduce the amount ingested, hence the severity of exposures."

Under an amendment to the Senate Committee-passed version of the bill, alternative bittering agents can be used where shown to be as effective and as compatible with car engines, and environmental impacts in those states with the longest record of DB usage will be studied. Under this new

provision, the Consumer Product Safety Commission and Environmental Protection Agency will consult with state health and environment officials in Oregon and California "to determine whether there is evidence that the use of the bittering agent denatonium benzoate in engine coolant or antifreeze has unreasonable adverse effect on the environment." If verified to be environmentally sound, manufacturers of antifreeze will need to include denatonium benzoate in antifreeze containing more than 10% ethylene glycol. If an alternative bittering agent is desired for use—one that is as effective as DB and environmentally acceptable—the Commission can begin a federal rule-making process to approve the alternative. It is worth noting that there have been no reports of environmental damage or water contamination associated with DB use in antifreeze in either state.

The question that is most important to activists, however, is what happens with Congressional *in*action? Antifreeze will continue to be manufactured with ethylene glycol and without denatonium benzoate or any other bittering agent. Roughly 10,000 (and maybe as many as 90,000) animals will continue to die and more than a thousand children will be poisoned each year. And we will all sit and wonder how much inconceivable suffering could have been avoided with an effortless "Aye" vote by a majority of Congress. 🐾

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