



ANTIFREEZE

Waste antifreeze should never be discharged to storm sewers, septic systems, water ways, or be discharged on the ground. While used antifreeze is not a listed hazardous waste under Federal regulations, it can be classified as a characteristic hazardous waste due to the presence of metals and/or other contaminants.

HAZARDS AND OTHER IMPORTANT INFORMATION

Ethylene glycol, the main ingredient of all major antifreeze brands, has long been known to be poisonous. Ethylene Glycol has a sweet smell and taste which is attractive to children and pets and is highly toxic. Drinking ethylene glycol will result in depression followed by heart and breathing difficulty, kidney failure, brain damage and even death. Used antifreeze may also contain metals, such as copper, zinc, and lead. All antifreeze, new and used, must be safely stored in order to avoid tragic consequences.

Improperly disposed antifreeze can flow into waterways where it can kill fish and other animals. It can seep through the soil and into the groundwater.

Some frequently asked questions include:

How hazardous is ordinary antifreeze?

Two ounces of ethylene glycol antifreeze can kill a dog, one teaspoon can be lethal to a cat, and two tablespoons can be hazardous to children.

What makes conventional antifreeze so dangerous?

When ingested, ethylene glycol converts to oxalic acid which damages the kidneys and can cause kidney failure and death.

What is the incidence of ethylene glycol poisoning in humans?

According to the Annual Reports of the American Association of Poison Control Centers covering 1991 to 1994, about 3,400 poisonings related to ethylene glycol occur each year with about 20% of these incidents reported among children under six.

How dangerous is antifreeze to pets?

In a recent survey conducted among veterinarians by a professional research firm, 96% of the vets surveyed felt that antifreeze poses a risk to pets, 95% indicated that they have warned clients about the dangers of antifreeze, and 66% had encountered at least one known or suspected

antifreeze poisoning within the previous year. Animal welfare experts estimate that tens of thousands of companion and wild animals die annually from ethylene glycol antifreeze poisoning.

Is there any effective treatment for ethylene glycol poisoning of pets?

If detected immediately, veterinarians can in some cases save an animal suffering from ethylene glycol poisoning. Usual treatment includes inducing vomiting, feeding the pet activated charcoal to absorb the ethylene glycol, and administering ethyl alcohol intravenously. Experts say survival from ethylene glycol poisoning is fairly rare because it is a powerful toxin and because it is rarely diagnosed early enough to prevent death.

Does antifreeze put wildlife in the environment at risk?

The literature contains many examples of wildlife harmed by ethylene glycol antifreeze which had been spilled, leaked, or carelessly disposed of. The best known incident is the 1992 death of a rare California condor.

Used antifreeze must be handled carefully. The preferred method of handling is recycling. Recovered antifreeze is recyclable and should never be placed in garbage, storm drains or sewer systems.

RECYCLING

Facilities with fleet operations may consider purchasing antifreeze recycling equipment that can be used onsite. Smaller operations may wish to make arrangements with an antifreeze recycler to process their antifreeze or establish a relationship with one of the smaller, independently operated, traveling processors.

There are several types of equipment used in antifreeze recycling:

Filtration removes the sediments and contaminants from the antifreeze, and then virgin material is added. The sludge that is filtered out is disposed of as hazardous waste. You can buy filtration units in several sizes depending upon your use.

Distillation units heat the antifreeze and separate the water from the ethylene glycol. Through condensation, contaminants end up in a sludge that has to be disposed of as hazardous waste, and the solution is made into new antifreeze. Most distillation occurs off-site and generally produces higher quality antifreeze than filtration.

Capture all antifreeze drained from radiators and the engine block and store in a sturdy, leak proof container with a secure lid. Do not contaminate antifreeze with engine oil, brake fluid, transmission fluid, hydraulic fluid, gear oil, solvents, or fuels.

NOAA Program Support
Safety & Environmental Compliance 301-713-2870