

## HAZARDOUS MATERIALS PROGRAM ENVIRONMENTAL FACT SHEET

## Managing Spent Antifreeze

Antifreeze is a common product that has various applications. Through normal use, antifreeze can become contaminated with trace amounts of fuel, metals, and grit. Its active ingredients can also break down over time, forming acids that can cause corrosion. Therefore, replacing spent antifreeze is an important aspect of maintenance for all vehicles and equipment.

There are two main types of antifreeze: propylene-glycol-based and ethylene-glycol based. While propylene glycol is not associated with risks to human health or the environment, ethylene glycol is toxic. Furthermore, the sweet taste of ethylene glycol can make it attractive to children, pets, and other animals. With this in mind, the proper management of spent ethylene-glycol-based antifreeze is extremely important.

### How is spent ethylene-glycol-based antifreeze regulated?

Due to the toxicity of ethylene glycol and the contaminants introduced through its use, spent ethylene-glycol-based antifreeze is regulated under the Vermont Hazardous Waste Management Regulations (VHWMR). This type of waste may *either* be:

- **Recycled** according to the spent ethylene glycol recycling exemption provided in § 7-204(i) of the VHWMR; or
- **Managed as hazardous waste** identified by the **VT08** hazardous waste code for “waste ethylene glycol and solutions containing greater than 700 parts per million of ethylene glycol.”

Note: All household-generated wastes, including spent antifreeze, are exempt from regulation as hazardous waste under VHWMR § 7-203(a).

### What conditions must be met to satisfy the recycling exemption for spent ethylene-glycol-based antifreeze?

Spent ethylene-glycol-based antifreeze may be managed under the recycling exemption only if it does not contain any other hazardous wastes, such as gasoline. If the used antifreeze contains additional hazardous waste, it is not eligible for the exemption at § 7-204(i) and must be managed as a hazardous waste using VT08 and any other applicable waste codes.

Additionally, in order to manage this waste according to the exemption, the requirements below must be followed:

- Generators must **recycle** and/or treat their spent ethylene-glycol-based antifreeze for reuse;
- Prior to recycling, the containers and/or tanks used to hold the spent antifreeze solution must be:
  - marked with words that identify the contents, like: “**Used Antifreeze to be Recycled.**”

- closed except when adding or removing spent material;
- in good condition (i.e., no severe rusting, structural defects, or deterioration); and
- stored on an impervious surface, and if stored outside, within a structure that sheds rain and snow.
- If the spent antifreeze solution is subject to freezing and expansion (due to its water content), mechanical or physical means are employed to **prevent freezing**; and
- Any residue resulting from on-site recycling and/or treatment that is hazardous waste must be managed as hazardous waste.

Note: recycling methods include filtration, distillation, and ion exchange. Distillation and ion exchange restore antifreeze to the highest level of purity.

### **Is a hazardous waste manifest required to ship spent ethylene-glycol-based antifreeze offsite for recycling?**

A manifest is *not* required when shipping spent ethylene-glycol-based antifreeze *if* it is managed according to the recycling exemption. However, some transporters require that a manifest be used when shipping antifreeze to an off-site recycling facility. In such cases, the generator can use the VT99 waste code to identify the spent antifreeze as exempt (non-taxable) waste. If spent ethylene-glycol-based antifreeze is managed as VT08 hazardous waste (i.e., it is *not* recycled), a manifest *is* required for small quantity and large quantity generators (SQGs and LQGs).

### **What requirements must be met to manage spent ethylene-glycol-based antifreeze as hazardous waste?**

Most businesses recycle their antifreeze, and this practice is encouraged by the Vermont Hazardous Materials Program. If choosing to manage it as hazardous waste, the management requirements will depend on the generator's status (i.e., hazardous waste generator category). For more information about hazardous waste management requirements based on generator status, refer to the [Very Small Quantity Generator Guidebook](#) as well as the [Hazardous Waste Generator Category webpage](#).

### **Is propylene-glycol-based antifreeze regulated under the VHWMR?**

Unless the generator has reason to believe that the propylene-glycol-based antifreeze has become sufficiently contaminated with metals or fuel and exceeds hazardous waste regulatory limits, it is *not* subject to regulation as hazardous waste.

### **What are the best management practices related to antifreeze?**

- Use propylene-glycol-based antifreeze whenever possible (so long as this aligns with recommended maintenance specifications) or use recycled antifreeze.
- Replace antifreeze only when necessary. To determine whether replacement is necessary, use widely available test strips to evaluate the corrosion inhibition and freeze protection of antifreeze already in use.

- Consider antifreeze products with an “extended life.” Manufacturers claim that these products last up to five years or 100,000 miles in automobile engines, and up to 300,000 miles in heavy-duty diesel engines.
- Contract with a commercial recycling service to recycle spent antifreeze.
- Manage all vehicle fluid wastes (e.g., antifreeze, oil, transmission fluid, gas) separately.

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***For more information regarding managing automotive antifreeze, or if you have other hazardous waste management questions, please contact:***

Hazardous Materials Program – Hazardous Waste Section  
Waste Management and Prevention Division  
Vermont Department of Environmental Conservation  
1 National Life Drive – Davis 1  
Montpelier, VT 05620-3704  
802-828-1138  
<https://dec.vermont.gov/waste-management/hazardous>