



Managing Waste Antifreeze

Waste/Hazardous Waste #4.02, rev. August 2004

This fact sheet addresses antifreeze removed from motor vehicles. It does not cover coolants used in other applications. Information is based on Minn. Statutes 115A.916 and Minn. Rules 7045.

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Environmental Concerns

Antifreeze is commonly made up of ethylene glycol, propylene glycol or another chemical that transfers heat from a vehicle's engine to its radiator. During this process, antifreeze may become contaminated with traces of fuel, metal particles and grit. Of particular concern is lead contamination. Antifreeze also breaks down over time, forming acids which corrode the cooling system.

Antifreeze, used or unused, may be poisonous to pets and children. If discharged to a septic system, it may kill the organisms that enable the system to function.

Unusable antifreeze that is removed from a motor or vehicle is considered a waste.

However, drained antifreeze that is able to be reused without processing is not considered a waste.

Preventing Waste

Prevent unnecessary waste!

- Work carefully on the cooling system when making repairs or replacing hoses or pumps. Your oil absorbent hauler may not be able to take absorbents that have been used to clean up spilled antifreeze.
- Use a clean, dedicated drain pan to catch antifreeze. You may be able to put it right back into the vehicle.
- Consider replacing unusable antifreeze with long-life formulations.

Antifreeze containing excessive fuel, dirt and oil is more difficult, and may cost more to recycle. If you know there are major engine block problems and fluids are mixed, keep that collected antifreeze separate to prevent

fouling the rest of your recycling supply.

Evaluate fluid mixtures to determine whether they are hazardous. (Example: gasoline mixed with antifreeze may be ignitable.)

Managing the Waste

Do **not**:

- Discharge antifreeze to a storm sewer or septic system.
- Drain antifreeze onto the ground.
- Place antifreeze in solid waste.
- Mix antifreeze with used oil.
- Discharge to a sanitary sewer system if you generate 600 gallons or more per year.

For **businesses that generate 600 gallons of waste antifreeze or more per year**, management options include on- or off-site recycling or off-site disposal. On-site recycling may be accomplished by purchasing and using your own equipment or by using a service that will come to your site and recycle the collected antifreeze. Both on-site methods result in a recycled product for your use. (Services that recycle off-site do not typically return the recycled antifreeze.) If the antifreeze is contaminated to a degree that makes it unrecyclable, you will have to dispose of it using a reputable hauler. (Disposal is the least desirable option.) Before recycling or disposal, store the waste in a closed and marked container.

Businesses that generate less than 600 gallons per year of waste antifreeze may discharge it to a sanitary sewer system *provided* it is allowed by the local wastewater treatment plant. (A local wastewater treatment plant may prohibit



discharge of antifreeze to its system. In the twin cities metropolitan area, Metropolitan Council Environmental Services allows small amounts of motor vehicle antifreeze to be discharged to the wastewater treatment plant.) Businesses that discharge antifreeze are required to keep records showing the amount of waste antifreeze generated. Maintain the records on site and available for inspection for three years following generation of the waste.

Storing and Shipping

You may need to collect and store ethylene glycol- and propylene glycol-based antifreeze separately. Check with your recycler or equipment manufacturer for guidelines.

Store waste antifreeze in a manner that will prevent a release to land or water:

- Store antifreeze in a container compatible with the waste, such as a metal or poly drum or tank.
- Mark the container with the words “*Antifreeze for Recycling*” to prevent inadvertent mixing with other waste.
- Inspect regularly for leaking or inadequate containers. If you discover a leaking or inadequate container, clean up the leak and repackage the antifreeze in a container that does not leak.
- If storing outdoors, use of an impermeable surface, secondary containment, and protection from weather conditions will help to ensure antifreeze does not accidentally spill on the ground or reach storm sewers or other water bodies.

Recycle or ship antifreeze regularly.

If you ship within Minnesota, you may transport the waste in your business or personal vehicle as long as the containers are closed and secured in the vehicle. Shipments must be accompanied by a waste-tracking document, such as a bill of lading, containing the following information:

- your business name and address(es);
- the contact person at your business;

- name and address of the facility to which you are shipping;
- the date the shipment is initiated;
- a description of the waste; and
- the amount of waste shipped.

If you ship out of Minnesota, you can still use a waste-

tracking document (as outlined above) unless the waste passes through a state requiring a manifest. In that case, or if you are shipping to a hazardous waste disposal facility, you must use a manifest and a licensed hazardous waste transporter.

Keep copies of waste-tracking documents and manifests on site for at least three years from the date of shipment.

Reporting

In Greater Minnesota, antifreeze does not need to be reported on your annual license renewal form. In the metropolitan area, most counties require antifreeze to be reported. Check to see if yours does.

Information About Recycling Methods

NOTE: To ensure antifreeze is

recyclable, do not mix other waste with it.

Current recycling methods include distillation, ion exchange and filtration.

Distillation and ion exchange restore the antifreeze to such a high level of purity that some major vehicle manufacturers allow antifreeze recycled by these methods to be used in vehicles under warranty*. These methods are often the most costly.

Simple **filtration** processes are not designed to remove dissolved contaminants. However, using a process to remove dissolved materials, such as precipitation or reverse osmosis, along with filtration, can result in a higher quality product at a reasonable cost.

No matter which method is used, the recycling process should include the addition of chemicals to reconstitute the antifreeze. Virgin antifreeze must meet American Society

Why Recycle?

The State of Minnesota prefers that waste is managed by recycling rather than disposal. For this reason, businesses are encouraged to recycle. Advantages may include:

- Recycling saves resources and is environmentally friendly.
- Antifreeze destined for recycling does not have to be evaluated and shown to be nonhazardous.
- Recycled antifreeze is premixed. Some businesses feel using the recycled product is more convenient, saves time and reduces the chance that it may be mixed incorrectly.
- The water portion that has gone through a higher quality recycling process is often more pure than tap water.
- Recycled antifreeze pricing does not fluctuate seasonally. Depending upon your volume, the cost of using an on-site recycling service on an annual average, may be cheaper than purchasing virgin product.
- Businesses collecting waste in a holding tank save removal and disposal costs.



for Testing and Materials standard #D3306 — Specifications for Ethylene Glycol Base Engine Coolant. A good recycled product will also meet this standard; many recycled products exceed it.

**An automobile manufacturer may require antifreeze to be recycled using a certain type of equipment or that a certain additive package be added in order to maintain the warranty. Check with the manufacturer to see which type of recycled product is appropriate for the vehicle.*

Managing Recycling Sludges and Filters

Any sludge generated during a recycling process must be evaluated to determine whether it is hazardous for lead or benzene, then managed appropriately.

Two types of filters are generally used in filtration recycling methods: metal-cased and wound-polypropylene. Drain all filters for at least 24 hours or until they are not dripping. If using metal-cased filters, puncture them if needed to aid draining.

The preferred management method for drained metal-cased filters is to place them with oil filters for recycling. However, you must first check with your oil filter hauler to ensure they will be accepted.

The preferred management method for drained wound-polypropylene filters is to place them with used oil-absorbent materials (paper towels and oil-dry materials) that will be burned for energy recovery.

If these options are unavailable, *well-drained* filters may be mixed with industrial solid waste destined to be burned, provided the burner will accept them. The least desirable option is to mix *well-drained* filters with industrial solid waste destined for a landfill. Check with the landfill operator first to make sure they can accept filters.

Disposal As a Hazardous Waste

You may be unable to recycle heavily-contaminated antifreeze or antifreeze mixtures known to be hazardous. In these cases, you may, without testing, assume that the antifreeze is hazardous and manage it according to the full hazardous waste requirements as outlined in the MPCA hazardous waste fact sheet #1.00, *Basic Hazardous Waste Requirements for Business*.

Bulk Shipments of Ethylene Glycol

Ethylene glycol is regulated as a Department of Transportation (DOT) hazardous material for transportation by highway when it is shipped or transported as a hazardous waste or hazardous substance. Shipments

documented on a Uniform Hazardous Waste Manifest are regulated as hazardous wastes when in transportation. Materials that don't require manifests may still be regulated by DOT if they meet the DOT definition of a hazardous substance.

Ethylene glycol is a DOT hazardous substance when a reportable quantity (5000 pounds) is transported in one package. Given its weight of approximately 9.3 pounds per gallon, ethylene glycol shipped or transported in bulk packaging containing at least 537.6 gallons will be regulated as a hazardous substance for ground transportation. These shipments must meet all DOT communications and packaging standards. You, as the shipper, are subject to these requirements if a tanker holding more than 537.6 gallons picks up your antifreeze.

More Information

Your metropolitan county and the Minnesota Pollution Control Agency have staff available to answer waste management questions. For more information, contact your metropolitan

county hazardous waste office or the MPCA office closest to your county.

Contact the Minnesota Department of Transportation for transport-related questions.

Contact the Minnesota Technical Assistance Program for ideas on how to reduce waste.

Metro County Hazardous Waste Offices

Anoka County	(763) 422-7093
Carver County	(952) 361-1800
Dakota County	(952) 891-7557
Hennepin County	(612) 348-3777
Ramsey County	(651) 773-4466
Scott County	(952) 496-8475
Washington County	(651) 430-6655

Minnesota Department of Transportation

Office of Freight and Commercial Vehicle Operations	(651) 405-6060
E-mail	motorcarrier@dot.state.mn.us
Web site	http://www.dot.state.mn.us

Minnesota Pollution Control Agency

Toll free	(800) 657-3864
Brainerd	(218) 828-2492
Detroit Lakes	(218) 847-1519
Duluth	(218) 723-4660
Mankato	(507) 389-5977
Marshall	(507) 537-7146
Rochester	(507) 285-7343
St. Paul	(651) 297-2274
Willmar	(320) 214-3786
Small Business Assistance Program	(651) 282-6143
.....	(800) 657-3938
Web site	http://www.pca.state.mn.us

Minnesota Technical Assistance Program

Toll free	(800) 247-0015
Minneapolis	(612) 624-1300
Web site	http://www.mntap.umn.edu



Equipment

Finish Thompson, Inc.

921 Green Garden Rd
Erie, PA 16501
Phone: 800-934-9384
Contact: Louis Nichilo
Method: Distillation
Web site: <http://www.finishthompson.com>

JLS Distributing

3901 Westbury Way
Eagan, MN 55123
Phone: 612-868-9091
Contact: Jake Stanton
Antifreeze recycling machines

Services

Como Lube and Supplies Inc.

13575 Fenway Blvd North
Hugo, MN 55038
Phone: 651-646-0830
Contact: David Schwinghammer
Method: Remove/Recycle
Web site: <http://www.comolube.com>

Recycool Inc.

PO Box 54
Hugo, MN 55038
Phone: 651-653-5074
Contact: Kurt Rosauer
Method: Vacuum distillation
Web site: <http://www.recycool.net>

Como Lube & Supplies, Inc.

1108 Port Terminal Road
Duluth, MN 55082
Phone: 218-722-2920, 1-800-692-5417
Contact: Laura Lott
Method: Remove/Recycle
Web site: <http://www.comolube.com>

Pioneer Environmental Group, Inc

12501 Hudson Rd S
Afton, MN 55001
Phone: 651-436-8296
Contact: Mark Sternad
Method: Distillation

Greg Morell

PO Box 34050
Truckee, CA 96160
Phone: 800-266-5523, 530-587-1239
Method: on-site recycling
Web site: <http://www.coolasnew.com>

Safety-Kleen Systems, Inc.

9261 Isanti St NE
Blaine, MN 55449
Phone: 763-780-1332
Contact: Dan Chamberlin
Method: Recycle
Web site: <http://www.safety-kleen.com>

Northern Minnesota Services, Inc.

5592 Lane 58
Aurora, MN 55705
Phone: 218-865-4744
Contact: Dan Rogers
Method: Consolidation/ Recycle