



# RECYCLE USED MOTOR OIL FILTERS

A FACT SHEET FOR BUSINESSES AND INSTITUTIONS  
FROM THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES

## **BEST MANAGEMENT PRACTICE**

*What is the recommended best management practice for used oil filters?*

The Wisconsin Department of Natural Resources recommends that used oil filters be recycled. Recycling means hot-draining, crushing or dismantling of the filters, recycling the removed oil, and recycling the steel and other filter components.

## **RECYCLING USED OIL FILTERS**

*What are the benefits of recycling used oil filters compared to disposing them?*

Recycling steel and oil from filters will conserve nonrenewable resources and landfill space and prevent oil from contaminating land and water. It is best to keep used oil filters out of landfills since it is difficult to completely remove the used oil, which is banned from Wisconsin landfills. Also, certain types of filters which might otherwise be regulated as hazardous waste can be more easily managed by properly recycling them as scrap metal. (Used oil filter recycling requirements are discussed later in this fact sheet.)



*How do I arrange to get my filters recycled?*

Ask your local waste/recyclables hauler or scrap metal recycler, or contact your district DNR office for a list of used oil filter recycling services from the Wisconsin Recycling Markets Directory.

*Will I be paid to send my used oil filters for recycling?*

The value of filters varies from one recycler to another and can change over time. Recycling may be cheaper than disposal so there may be a net savings. If you pay by volume rather than weight, it may be cost-effective to crush your filters with a crushing machine in order to get more into a recycling container.

## **SOLID Vs. HAZARDOUS WASTE**

*The United States Environmental Protection Agency made some rule changes regarding used oil filters in 1992. In Wisconsin, do I still need to determine if my used oil filters are hazardous waste (i.e., testing or application of knowledge and record-keeping)?*

No, not if you properly recycle them as scrap metal following proper hot-draining, crushing or dismantling. However, if you dispose of used oil filters you must determine if they are hazardous waste. Teme-plated used oil filters have the hazardous waste toxicity characteristic for lead. Teme is an alloy of tin and lead. Teme-plated oil filters that are disposed of rather than recycled as scrap metal must be managed as hazardous waste. Non teme-plated oil filters that are not mixed with listed hazardous waste and from which oil has been removed by properly hot-draining, crushing, or dismantling do not appear to have the hazardous waste toxicity characteristic

*How can I tell if my filters are teme-plated?*

Members of the Filter Manufacturers Council reportedly no longer produce teme-plated filters. They reportedly produce 80% to 90% of the oil filters sold in the US. Call your filter manufacturer and ask if the filters are teme-plated.

*Are some types or sizes of filters more likely to be teme-plated?*

Yes, larger filters, such as those used in heavy-duty vehicles and equipment, are more likely to be teme-plated. Teme-plated steel is used for the purpose of strengthening the shells of larger filters.

*Are sanitary landfills required to accept my filters if they are not teme-plated and are properly hot-drained, crushed, or dismantled?*

No, operators/owners of Wisconsin landfills are not required to accept any wastes they choose not to.



***Are used oil filters that are recycled as scrap metal exempt from Wisconsin hazardous waste regulation?***

Yes, provided the filters are properly hot-drained, crushed, or dismantled and are not stored for more than a year and not used in a disposal-like manner. The Department also recommends recycling of used oil removed from filters and from other sources, and recycling of other non-steel components if separated from used oil filters. For example; used oil, filter media, and other non-steel components removed by filter shredding or dismantling could be burned for energy recovery according to applicable environmental requirements stated below for burning used oil filters with energy recovery.

***What types of filters does the scrap metal recycling exemption apply to?***

Both teme-plated and non teme-plated filters.

***Can I manage used oil filters by burning them for energy recovery in Wisconsin?***

Yes, provided the filters and burning residuals are managed according to applicable solid waste, hazardous waste, and air management requirements. In addition, burning of used oil filters for energy recovery requires a written approval from the Department's Hazardous Waste Management Program if they are hazardous waste. Also, a permit from the Department's Air Management Program and compliance with air quality rules may be required. For questions on whether a solid waste license is needed, contact your district solid waste specialist.

***Can I dispose of properly hot-drained, crushed, or dismantled used oil filters in an incinerator without energy recovery in Wisconsin?***

Yes, provided the filters and burning residuals are managed according to applicable solid waste, hazardous waste, and air management requirements. In addition, burning of used oil filters without energy recovery requires a license from the Department's Solid and Hazardous Waste Management Program and a permit from its Air Management Program.

Please note that used oil filters which are not properly hot-drained, crushed, or dismantled, cannot be burned in a Wisconsin incinerator without energy recovery. This is because burning used oil in an incinerator without energy recovery is specifically banned by Wisconsin's recycling law.

 **1991 WISCONSIN LANDFILL BAN ON USED OIL**

***What should I do with the oil I collect when I hot-drain, crush, or dismantle filters?***

Properly manage it with used *oil* collected from oil changes. Used oil can be recycled by being processed or re-refined to produce lubricants or other used oil-derived products. It can also be burned for energy recovery in asphalt plants, boilers, furnaces, or garage space heaters. Landfilling of used *oil* in Wisconsin has been banned since January 1, 1991.

***HOT-DRAINING***

***What is the proper way to drain used oil filters?***

Hot-drain filters near engine operating temperature and above room temperature (i.e., 60 degrees Fahrenheit) by one of the following methods:

- ◆ Puncture the filter anti-drain back valve or the filter dome and hot-drain for at least 12 hours, or
- ◆ Hot-drain and crush, or
- ◆ Dismantle and hot-drain, or
- ◆ Use any other equivalent hotdraining method which will adequately remove used oil.

***Why do I need to put a hole in the filter dome?***

A hole needs to be put in the dome (end opposite the threaded end) to allow air to enter the filter to replace the oil that drains out. Otherwise, sufficient vacuum may be created in the filter to prevent oil from fully draining.

***How should I put a hole in the dome?***

A hammer and punch, a drill, or a hammer with a point at one end can be used. Use caution when puncturing the filter. Safety glasses should be worn

***Why is hot-draining better?***

Hot draining is better than cold draining because at higher temperatures the oil is thinner, causing it to drain more quickly and completely.

***How much more oil can I expect to remove from filters by puncturing and hot-draining?***

Based on a 1992 study by University of Northern Iowa, puncturing and draining oil filters for 24 hours removes approximately 22% more oil than draining for 5 minutes without puncturing. Statewide, over one half million more gallons of used oil can be recycled each year by puncturing and hotdraining filters for 24 hours.

EPA has determined that non-teme plated used oil filters that have been hot-drained for at least 12 hours after puncturing either the antidrain back valve or the dome end do not appear to have the hazardous waste toxicity characteristic. Thus, EPA and DNR recommend at least a 12-hour hot-drain time for punctured used oil filters.

## **CRUSHING AND RECYCLING**

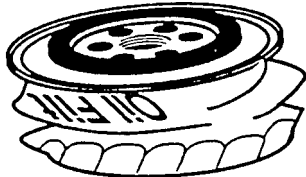
### ***Do I have to crush my properly hot-drained filters on-site or can my recycler do it off-site?***

Either. Some recyclers prefer that filters not be crushed however, so discuss it with them prior to purchasing a crushing machine.

### ***How much more oil can I expect to remove from filters by crushing?***

Based on a 1992 study by University of Northern Iowa, crushing oil filters removes approximately 12% more oil than puncturing and draining for 24 hours. Statewide, approximately a quarter of a million more gallons of used oil can be recycled each year by crushing filters.

### ***How much will filters be compacted by crushing machines?***



Based on a 1992 study by University of Northern Iowa, crushing machines compact filters by approximately 56% to 87%. Recycling and disposal services typically

charge by volume. Reduced recycling and disposal costs may offset crushing machine costs.

### ***Where can I get a list of oil filter crushing machine manufacturers?***

A list is available from your district recycling specialist. The list will be updated periodically. The price of oil filter crushing machines varies with the brand and design.

### ***What about getting my oil filters shredded?***

Shredding can be, but does not always need to be, part of the used oil filter recycling process. Some recycling services shred filters after collecting them and prior to recycling them as scrap metal.

### ***Do I need to hot-drain the oil filters before crushing?***

**YES.** You must hot-drain your filters before crushing whether you recycle them as scrap metal or dispose of them.

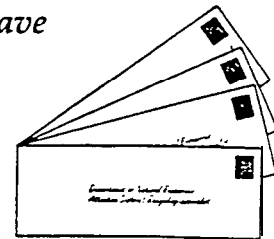
### ***How should I store my properly hot-drained, crushed, or dismantled oil filters?***

After properly hot-draining, crushing, or dismantling filters, place them in a leak-proof container. Some filter recycling services provide containers for filter collection.

## **ADDITIONAL INFORMATION**

### ***Who should I contact if I have additional questions regarding the recycling of used oil filters?***

Contact your local recycling officials or your DNR District Recycling Specialist.



### ***Who should I contact if I have additional questions regarding the disposal of used oil filters?***



Contact your DNR District Solid and Hazardous Waste Specialists.

### ***How should household do-it-yourself oil changers manage their used oil filters?***

Household do-it-yourselfers should puncture the filter dome and hot-drain the filter for at least 12 hours before taking it to a used oil filter recycling drop-off site. Household do-it-yourselfers should call a local recycling authority or oil change service to find out if a used oil filter drop-off site exists. If no such site exists, the properly punctured and hot-drained filter should be wrapped with a paper towel or rag and put in the box that the new filter came in. The box containing the paper towel or rag and filter should be put in the trash.

*Disclaimer: This fact sheet is not intended as a substitute for the regulations and statutes that apply. Rather, it is a summary of the topic. Please consult regulations and statutes for detailed information.*

Written by Andy Swartz and Dave Parsons  
Edited by Lauranne Bailey  
Graphics by Linda Pohlod

***DNR PUBLICATIONS AVAILABLE ON RELATED TOPICS***

Used Oil Generators Fact Sheet, SW—103  
Used Oil Burning Fact Sheet, SW—104  
Recycle Used Oil Filters — A Fact Sheet for Households, SW—134  
Installing Outside, Above-Ground, Public Access Used Oil Collection Facilities Fact Sheet, SW-350  
Public Access Used Oil Collection Facility Management Tips Fact Sheet, SW-348  
“Recycle Used Oil” sign, IE—100  
“Recycle Used Motor Oil Here” sign, IE—101  
“Used Motor Oil Only” all-weather sign, IE—102  
Recycle Used Oil Fact Sheet, IE—105  
NR 183 Engine Waste Oil Collection, Storage, and Transportation rule  
List of Wisconsin Recycling Markets for Used Oil  
List of Wisconsin Recycling Markets for Used Oil Filters  
List of Oil Filter Crushing Machine Manufacturers  
Used Oil Management Information Letter and Order Form

***DEPARTMENT OF NATURAL RESOURCES DISTRICT OFFICES***

**Southern District**  
Department of Natural Resources  
3911 Fish Hatchery Road  
Fitchburg, WI 53711  
608-275-3266

**Northwest District**  
Box 309  
Spooner, WI 54801  
715-635-2101

**North Central District**  
Box 818  
Rhinelander, WI 54501  
715-362-7616

**Southeast District**  
4041 N. Richards Drive  
Box 12436  
Milwaukee, WI 53212  
414-961-2727

**Western District**  
1300 W. Clairemont Ave., box 4001  
Eau Claire, WI 54702  
715-839-3700

**Lake Michigan District**  
1125 N. Military Ave., Box 10448  
Green Bay, WI 54307  
414-492-5800

***Remember: Don't Mix Antifreeze or Other Vehicle Fluids, Solvents, Pesticides, Paint, Household Hazardous Wastes, or Any Other Hazardous Wastes with Used Oil!***