



Managing Solvent-Based Parts Washers

Hazardous Waste #4.43, March 2005

This fact sheet discusses petroleum and other organic-based parts washer wastes from units used for washing oily materials. For information on managing wastes from aqueous (water-based) units, see fact sheet #4.44.

Inside

Marking and Storing ...	2
Table 1	2
Disposal/Recycling	
Options	3
Shipping	3
Keeping Records	3
Table 2	3
Filters, Sorbents and ...	
Sludges	4
More Information	4

Environmental Concerns

Most petroleum-based systems use mineral spirits, stoddard, petroleum naphtha or similar solvents. Other organic solvents often contain terpenes or d-limonene. Parts washer solvents are typically hazardous because they:

- have a flash point less than 140°F (are ignitable);
- have become contaminated above regulatory limits with Table 1 materials (are toxic); or
- contain or are contaminated with Table 2 solvents (are listed).

Minimizing Parts Washer Solvent Waste

Reducing the amount or toxicity of a waste is good for the environment. It also often results in decreased disposal costs and may reduce regulatory requirements. Companies throughout Minnesota have discovered ways to reduce the amount of parts washer solvent waste they generate. Perhaps one or more of these will work for you:

- Use the parts washer only when necessary.
- Don't use chlorinated aerosols (such as brake or carburetor cleaners) or other cleaners over the parts washer. (To determine whether a solvent is "chlorinated," look at the list of ingredients on the container. If the name of one or more ingredients contains "chloro" or "chloride," the solvent is chlorinated.)
- If you are using a contract service, schedule pickups when the solvent no

longer cleans. Do not run a four-week pickup schedule if an eight-week pickup schedule will do.

- If you generate large amounts of waste, use two units for cleaning. When the first unit requires changing, begin to use the second unit in place of the first and the new solvent in the first unit for the final cleaning.
- If you generate large amounts of petroleum/organic solvent waste, on-site distillation and reuse of your solvent may help reduce the amount of waste you generate.
- Units with filtration systems that remove particles may extend the life of solvents.
- Scrape or remove heavy buildup from parts before cleaning them in the parts washer.
- Keep units closed and turned off when not in use to eliminate solvent loss through evaporation.
- Look into switching to a less hazardous or nonhazardous solvent, such as a high-flash (flash point 140°F or greater) or aqueous (water)-based solvent. (Keep in mind that, although the product may be nonhazardous, the resulting waste may still be hazardous because of what you cleaned.)

Determining Whether the Spent Solvent Is Hazardous

Both low-flash (flash point below 140°F) and high-flash (flash point 140°F or greater) solvents are available. The Material Safety Data Sheet (MSDS) gives the flash point. If



you own your unit, evaluate the solvent when it is no longer useable (becomes a waste). If you lease the unit, it is considered spent (waste) and requires evaluation when it is picked up for recycling or disposal. If you manage the spent solvent as a hazardous waste, no evaluation is needed.

If using a low-flash solvent, the spent solvent will be hazardous:

- because it is ignitable (that is, has a flash point below 140°F).
- if it is contaminated above regulatory limits with Table 1 metals or organic chemicals.
- if brake cleaners, carburetor cleaners or cleaners containing any of the Table 2 (F-listed) solvents are sprayed over the parts washing unit.

Any amount of low-flash solvent must be managed as hazardous waste. Hazardous waste requirements do not require testing; however, your hauler or disposal company may require testing in order to properly characterize, ship and dispose of the waste.

If using a high-flash solvent, the spent solvent will be hazardous if:

- contamination from a low-flash chemical (such as gasoline) lowers the flash point below 140°F;
- it is contaminated above regulatory limits with Table 1 materials; or
- brake cleaners, carburetor cleaners or cleaners containing any of the Table 2 (F-listed) solvents are sprayed over the parts-washing unit.

If you choose to manage the spent solvent as hazardous waste, you do not need to test it unless required by your hauler or disposal company.

If you wish to show the spent solvent is nonhazardous, you will need to test to show that the organic contaminants and the eight hazardous metals listed in Table 1 are below the regulated levels shown. The testing company and your regulatory authority can help you determine which contaminants to test for based on the type of cleaning you do.

Marking and Storing

No hazardous waste markings are required on a unit that is in use. Store spent hazardous solvent prior to distillation or shipping as follows:

1. Store the waste in a closed, sturdy container that is compatible with the waste. If you intend to ship the waste off site, use a container that meets the U.S. Department of Transportation shipping requirements.

Table 1: Toxicity Contaminants and Maximum Regulatory Levels

Hazardous Waste Number	Contaminant	Concentration (milligrams per liter)
D004	Arsenic	5.0
D005	Barium	100.0
D018	Benzene	0.5
D006	Cadmium	1.0
D019	Carbon tetrachloride	0.5
D021	Chlorobenzene	100.0
D022	Chloroform	6.0
D007	Chromium	5.0
D023	o-Cresol	*200.0
D024	m-Cresol	*200.0
D025	p-Cresol	*200.0
D026	Cresol	*200.0
D027	1,4-Dichlorobenzene	7.5
D028	1,2-Dichloroethane	0.5
D029	1,1-Dichloroethylene	0.7
D030	2,4-Dinitrotoluene	0.13
D032	Hexachlorobenzene	0.13
D033	Hexachlorobutadiene	0.5
D034	Hexachloroethane	3.0
D008	Lead	5.0
D009	Mercury	0.2
D035	Methyl ethyl ketone	200.0
D036	Nitrobenzene	2.0
D037	Pentachlorophenol	100.0
D038	Pyridine	5.0
D010	Selenium	1.0
D011	Silver	5.0
D039	Tetrachloroethylene	0.7
D040	Trichloroethylene	0.5
D041	2,4,5-Trichlorophenol	400.0
D042	2,4,6-Trichlorophenol	2.0
D043	Vinyl chloride	0.2

**If o-, m-, and p-cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 milligrams per liter.*

2. Mark the container with the words “*Hazardous Waste*,” a clear description of the waste, and the accumulation start date (the date the solvent in the container was first declared a waste or the date the waste was first placed in the container).
3. Store the container on an impermeable surface. If it is stored outdoors, shade the container, protect it from precipitation, and ensure that access to the container is restricted. When storing solvent outdoors, the storage area must have a curbed, impermeable surface to contain leaks.



4. Inspect the container weekly to ensure it is not leaking. Keep records of the inspection. MPCA Waste fact sheet #2.4, *Documenting Container Inspections* (<http://www.pca.state.mn.us/publications/w-hw2-41.pdf>) may help you.

For more information on hazardous waste storage requirements see MPCA Waste fact sheet #1.04, *Mark and Store Waste Correctly* (<http://www.pca.state.mn.us/waste/pubs/1-041-05.pdf>).

Disposal/Recycling Options

Manage spent solvent in one of these ways:

- Distill the solvent on site. If you are distilling hazardous petroleum/organic-based solvent, hazardous waste storage rules apply if you store it prior to distillation.
- Send the solvent off site for distillation or fuel blending (burning for energy recovery).
- Hazardous waste generators classified as **Very Small Quantity Generators** may mix parts washer solvent with used oil generated on site and manage the mixture as used oil *if* the following five conditions are met:
 1. The solvent does not contain metal-bearing paint.
 2. The solvent is not an F-listed hazardous waste, such as many carburetor cleaners. (Petroleum/organic-type solvents that have been

Table 2: Solvents on the F List

F001 Carbon tetrachloride, chlorinated fluorocarbons, methylene chloride, tetrachloroethylene, 1,1,1-trichloroethane, and trichloroethylene.

F002 Chlorobenzene, methylene chloride, orthodichlorobenzene, tetrachloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, trichlorofluoromethane, and 1,1,2-trifluoroethane.

F003 Acetone, cyclohexanone, ethyl acetate, ethyl benzene, ethyl ether, methanol, methyl isobutyl ketone, n-butyl alcohol and xylene.

F004 Cresols, cresylic acid and nitrobenzene.

F005 Benzene, carbon disulfide, 2-ethoxyethanol, isobutanol, methyl ethyl ketone, 2-nitropropane, pyridine, toluene.

Mixtures and blends of the above solvents and distillation bottoms are also listed. For detailed information, request MPCA fact sheet #2.00, *F List of Hazardous Waste*.

contaminated with a solvent named on the F list are considered to be an F-listed solvent.)

3. The solvent is not gasoline.
4. The solvent does not exceed 10 percent of the total volume of the final mixture. (Document this!)
5. The flash point of the solvent is not below 100°F.

NOTE: Before mixing, check with your oil hauler. Not all haulers accept solvent mixed with used oil.

Do not evaporate solvent as a means of disposal.

Shipping Procedures

Before the solvent is shipped, you must apply the appropriate shipping labels to the waste container. If the waste is hazardous, you must also complete a manifest (special multicopy shipping paper) to accompany the shipment. Haulers often do this as a part of their service, but **it is the generator's responsibility to ensure that the correct shipping labels are applied to the waste containers and the manifest is filled out completely and correctly before the waste leaves the site.** It is not uncommon for the generator's U.S. Environmental Protection Agency number or name and address to be filled out incorrectly on the manifest, resulting in a violation. Check to make sure it's right.

For more information on use of a manifest, request MPCA fact sheet #1.07, *Manifest Shipments of Hazardous Waste* (<http://www.pca.state.mn.us/publications/w-hw1-07.pdf>).

Keeping Records

The following records must be kept for at least three years:

- test results or other evaluation documentation showing a waste is nonhazardous;
- weekly storage container inspection documentation;
- initial and final copies of your manifest (and Land Disposal Restriction forms, if needed); and
- if you are mixing solvent with used oil, a log showing the dates and amounts of solvent and oil that are mixed.

Filters, Sorbents and Sludges

Filters or sorbent materials, such as pads, may be used to capture contaminants from the unit; sludges may accumulate in the unit. Management depends upon the solvent used. To simplify management, avoid contaminating the unit with Table 2 solvents.



If the parts washer is only used for cleaning oil-contaminated parts, manage filters, sorbents and sludges as follows:

1. Drain all free liquids.
2. Store in a closed, marked drum.
3. Then:
 - **Recycle or burn for energy.** If you already have used oil filters or have oil-contaminated materials that are recycled or burned for energy, your waste-management company may allow you to add filters, sorbents and/or sludges to the existing waste stream. Or, you may be able to start a new waste stream that can be managed in this manner. Check with your waste-management company. (Reusable sorbents containing no free liquid and sent to a commercial laundry do not need to be accompanied by a manifest.)
 - **Dispose of in solid waste** — including burning at a permitted solid waste incinerator. Before you can do this, you need to evaluate to show these are not hazardous wastes. If you change your process, you must re-evaluate the waste. (Your supplier may be able to help you obtain the test data. Confirm acceptability of the vendor’s data with your regulatory agency.) Prior approval is required to dispose of nonhazardous wastes in a solid-waste landfill — not all landfills can accept them.
 - **Manage as a hazardous waste.** If your waste-management company will not accept your filters, sorbents or sludges and you cannot show they are nonhazardous, they must be managed as a hazardous waste.

If the parts washer is not used for cleaning oil-contaminated parts, handle the filters, sorbents and sludges as hazardous waste unless you have data showing they are not hazardous. Examples of parts cleaning where evaluation data are needed include:

- cleaning parts from equipment used with hazardous chemicals and
- cleaning parts in printing, painting and adhesive applications.

If the sludge/oily residue is a result of distilling the parts washer solvent, management depends upon the type of solvent you are distilling.

- For Table 2 solvents, all sludges/residues will be hazardous. Manage as hazardous waste.

- For low-flash-point solvents that do not contain any Table 2 solvents, sludge/residue management depends upon generator size classification. **Large and Small Quantity Generators** must evaluate the waste and manage appropriately. **Very Small Quantity Generators** may manage the residue with used oil provided that:

1. the flash point of the original solvent is not below 100°F and
2. the amount of solvent and/or sludge/residue does not exceed 10 percent of the total volume of the final mixture.

- For high-flash-point solvents that do not contain any Table 2 solvents, sludge/residue can be managed with used oil.

More Information

Your metropolitan county and the MPCA 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.

Minnesota Technical Assistance Program (MnTAP) staff have information about ways to reduce the amount of waste you generate. Contact them or check the Web site.

Metro County Hazardous Waste Offices

Anoka County	(763) 422-7093
Carver County	(952) 361-1800
Dakota County	(952) 891-7557
Hennepin County	(612) 348-8100
Ramsey County	(651) 773-4466
Scott County	(952) 496-8177
Washington County	(651) 430-6655

Minnesota Technical Assistance Program

Toll free	(800) 247-0015
.....	(612) 624-1300

Web Site <http://www.mntap.umn.edu>

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

Web Site <http://www.pca.state.mn.us>