

# Dry Cleaner Operations

Guidance on Hazardous Waste Requirements



## Introduction

Dry cleaner activities may generate several different hazardous and solid wastes that must be handled, stored and disposed of in accordance with state and federal requirements. A traditional dry cleaner generates spent solvent, cartridge filters and distillation residues that may be hazardous wastes; it is the generator's responsibility to make this determination and properly manage and dispose of these wastes.

This guidance document provides information for identifying, handling and disposing of hazardous wastes commonly generated by dry cleaner operations. In addition, it provides an overview of the air, wastewater and Department of Revenue requirements relevant to dry cleaners.

An additional resource is the DNR's Small Business Environmental Assistance Program's (SBEAP) biannual compliance calendar for dry cleaners. The calendar serves as an in-depth guide on the regulations as well as a convenient way to meet record-keeping requirements. To access the calendar, go to [dnr.wi.gov](http://dnr.wi.gov) and search, "dry cleaners and industrial laundries."

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Hazardous Waste regulations are found in [chs. NR 600 - 679](#) of the Wisconsin Administrative Code.

## Identifying Hazardous Wastes

Waste is classified as hazardous waste if it is **characteristic** (ignitable, corrosive, reactive or toxic), or **listed**. Examples of typical hazardous wastes found in dry cleaning facilities include unused solvents and cleaning products that will be thrown away, paint and solvent from building maintenance, and universal wastes such as fluorescent lamps and batteries. More information on these wastes is provided in the next section.

Perchloroethylene, also known as tetrachloroethylene or perc, is a volatile organic solvent used in some dry cleaning operations. Perc is both a listed hazardous waste (D039) and a characteristic hazardous waste (F002). All wastes contaminated with perc are hazardous, including filters, sludge, lint and wastewater from the water separator.

Some newer dry cleaning chemicals are not listed hazardous waste spent solvents but may be considered D001 ignitable hazardous waste due to their flashpoints. A careful waste determination should be made on these newer substances. [ss. NR 661.0020 through NR 661.0033, Wis. Adm. Code]

Occasionally, older solvents, such as 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113) or trichloroethane, are still present at dry cleaning facilities. Both solvents are chlorofluorocarbons (CFCs) that have been banned from sale and use by the Montreal Protocol because they cause ozone depletion. These older, banned CFCs must also be disposed of as hazardous waste. Both solvents are F002 wastes, and trichloroethane is also F001 and U226.

A non-hazardous product such as equipment filters may pick up contaminants during use and may be classified as hazardous once it is a waste. **A waste generator, such as a dry cleaning operation, must determine if each waste generated is a hazardous waste.** [s. NR 662.011, Wis. Adm. Code]

## Common Dry Cleaner Wastes

The following waste materials are commonly used in dry cleaning facilities and require proper management to protect workers, public health and the environment. Additional information is available on the DNR's website or in publications referenced below.

**Perchloroethylene**, also known as tetrachloroethylene or perc, is a dry cleaning solvent that poses serious health risks if not managed properly. All wastes that come in contact with perc are considered hazardous waste. These wastes can include:

- lint,
- filter cartridges, and
- muck from which perc has been extracted.

Spent perc may be directly reused without prior reclamation, distilled to recover pure solvent, or shipped in a labeled container to a licensed hazardous waste treatment, storage or disposal facility. Unused perc may be used or reclaimed to avoid disposal, returned to the distributor or sent to a licensed hazardous waste facility.

**Spent filter cartridges** should be drained for a minimum of 24 hours in a closed container. Undrained cartridges may contain as much as one gallon (13 lbs.) of solvent.

- Recovered solvent can be returned to charged solvent tanks or distillation units.
- Spent filter cartridges and filter cakes (muck) must be stored in closed containers and shipped to a licensed hazardous waste facility for treatment and/or disposal.

Methods for preventing pollution related to spent filter cartridges include:

- installing filter recovery units,
- installing a muck cooker to recover additional solvent, and
- replacing cartridge filters with spin disk filters to reduce fugitive emissions.

**Distillation residues** must be stored in closed containers and should be filtered to remove:

- oils
- fats
- greases

Distillation residues must be shipped to a licensed hazardous waste facility for treatment and/or disposal. Potential pollution prevention methods include:

- Venting still condenser off-gases to a carbon adsorption unit for additional solvent recovery.
- Regenerating the carbon adsorber with hot air stripping rather than steam stripping.

**Cooked powder residues** are the waste materials generated by cooking down or distilling solvents. These “muck cooker” residues must be stored in closed containers and shipped to a licensed hazardous waste facility for treatment and/or disposal. Potential pollution prevention methods include:

- venting muck cooker condenser off-gases to a carbon adsorption unit for additional solvent recovery and
- regenerating the carbon adsorber with hot air stripping rather than steam stripping.

**Wastewater from the water separator** is the liquid generated when separating water from the used perc solvent. While this is primarily water, it is still contaminated with perc solvent and should not be disposed of down the drain; see the section on “other requirements” below for details. It must be stored in a closed container and shipped to a licensed hazardous waste facility for treatment and/or disposal.

**Aerosol cans** include any aerosol containers (e.g., spray paint or WD-40) that will no longer be used for their intended purpose. The handling of waste aerosol cans may pose risks to workers as the contents may still be under pressure, and the contents may also be ignitable and/or toxic.

- Waste aerosol cans, unless empty as defined in s. NR 661.0007, Wis. Adm. Code, would likely need to be sent off-site to a licensed hazardous waste facility as the remaining contents of the aerosol cans may be characteristic hazardous waste for ignitability (D001).
- Hazardous waste management practices and disposal costs can usually be avoided by using all the material in the aerosol can.
- Empty aerosol cans must be recycled, as steel and aluminum containers are banned from landfills in Wisconsin. [ch. 287.07, Wis. Stats.]

For details, see the DNR guidance *Aerosol Cans: Guide to Handling and Disposal for Businesses* (WA-1784). Access by going to <https://dnr.wi.gov/files/pdf/pubs/wa/wa1784.pdf> or [dnr.wi.gov](http://dnr.wi.gov) and searching “WA-1784.”

**Batteries** when discarded are often considered hazardous waste because they may contain sulfuric acid (D002), lead (D008), cadmium (D006), mercury (D009) and silver (D011). A generator can choose to manage discarded batteries under the reduced regulations of "universal waste." Place cracked and leaking batteries in sturdy, acid-resistant, leak-proof sealable containers and keep the containers closed. [s. NR 673.13(1)(a), Wis. Adm. Code]

Universal Waste requirements are found in [ch. NR 673](#), Wis. Adm. Code.

- Cover the battery terminals to reduce the risk of fires and explosions occurring from electrical shorts. Sulfuric acid leaks or drips can be neutralized using cement, lime or other caustic material. Litmus paper can be used to determine if the acid is neutralized. Neutralized solutions can be cleaned up with absorbent material and put in the trash only if they do not exhibit hazardous characteristics, such as the D008 characteristic for lead.
- Each universal waste battery, or the pallet/grouping of the batteries, must be labeled or marked clearly with the phrase “Universal Waste—Batteries,” “Waste Batteries” or “Used Batteries” and the accumulation start date. [s. NR 673.14(1), Wis. Adm. Code]
- Discarded batteries managed as universal waste do not require a hazardous waste determination and do not count toward a hazardous waste generator’s status or annual reporting totals.

**Fluorescent lamps** (i.e., bulbs) contain mercury and are often a (D009) hazardous waste when discarded. Generators can choose to recycle used lamps under the reduced regulations of "universal waste" rather than managing them as hazardous waste. Lamps should be handled carefully and must be stored in a closed sturdy cardboard box or fiber barrel. [s. NR 673.33(4)(a), Wis. Adm. Code]

- Each container in which the lamps are stored must be labeled or marked clearly with the phrase “Universal Waste—Lamps,” “Waste Lamps” or “Used Lamps” along with the accumulation start date. [s. NR 673.14(5), Wis. Adm. Code]
- Discarded lamps managed as universal waste do not require a hazardous waste determination and do not count toward a hazardous waste generator’s status or annual reporting totals. For details, see the DNR guidance *Lamp and Bulb Management* (WA-195). Access by going to <https://dnr.wi.gov/files/PDF/pubs/wa/WA195.pdf> or [dnr.wi.gov](http://dnr.wi.gov) and searching “WA-195.”

Access a poster summarizing the requirements for handling universal waste by going to <https://dnr.wi.gov/files/PDF/pubs/wa/WA1798.pdf> or [dnr.wi.gov](http://dnr.wi.gov) and searching “WA-1798.”

## Generator Requirements

Most dry cleaners are very small quantity generators (VSQGs) of hazardous waste. If a dry cleaner generates no more **than 220 pounds** of non-acute hazardous waste in a calendar month and accumulates (stores) **no more than 2,205 pounds** of non-acute hazardous waste on-site at any time (roughly equal to five 55-gallon drums), the business is considered a VSQG. However, if a dry cleaner exceeds either the monthly limit or the accumulation limit or if they are not in compliance with the VSQG regulations, more stringent hazardous waste management requirements will apply. Because of this, it is important to keep track of both how much hazardous waste is generated per month, and the total amount accumulated on-site. See the DNR publication Quick Reference Guide: Hazardous Waste Generator Regulatory Requirements (WA-1821) for information on additional requirements.

To qualify for the VSQG requirements in Wisconsin, a generator must make accurate waste determinations, use leak-tight containers, close hazardous waste containers except when adding or removing waste, label the containers with the words “hazardous waste” and ensure disposal of hazardous waste at a licensed or approved facility. [s. NR 662.014, Wis. Adm. Code]

It is recommended that dry cleaners that are very small quantity generators of hazardous waste retain all information used to make their waste determinations. Assistance for making these waste determinations can be found in the publication Waste Determinations & Recordkeeping (WA-1152). To access this guidance, go to [dnr.wi.gov](http://dnr.wi.gov) and search for the publication title.

Avoid mixing hazardous waste with non-hazardous waste. The resulting mixture could exhibit a hazardous waste characteristic and the increased volume of hazardous waste could change a generator’s status, increase hazardous waste regulatory requirements and potentially increase waste disposal costs. [s. NR 662.013(6)(a)2., Wis. Adm. Code]

### Treatment, Storage and Disposal

Generators are responsible for hazardous wastes from the point of generation through proper transportation, storage, treatment and, finally, disposal. VSQGs can transport their own waste without a transportation license to a treatment, storage or disposal facility or a household hazardous waste collection facility that accepts hazardous waste from VSQGs. If the VSQG does not self-transport they should use a licensed hazardous waste transporter.

It is recommended that manifests, receipts, bills of lading or shipment records showing where the hazardous waste was disposed of or accepted be retained for at least three years. If using a manifest, additional requirements apply, and the manifest records must be maintained for at least three years. [s. NR 662.040(1), Wis. Adm. Code]

For details on hazardous waste manifest requirements see the DNR guidance *Hazardous Waste Manifests* (WA-1176). Access by going to <https://dnr.wi.gov/files/PDF/pubs/wa/WA1176.pdf> or [dnr.wi.gov](http://dnr.wi.gov) and searching “WA-1176.”

## Container Requirements

The following requirements must be met when storing hazardous waste in containers. Containers are defined as any portable device in which a material is stored, transported, treated, disposed of or otherwise handled [s. NR 660.10(14), Wis. Adm. Code]:

- Use a container compatible with the waste. [ss. NR 662.014(4), 665.0172, Wis. Adm. Code]
- Keep the container closed unless waste is being added or removed. [ss. NR 662.014(4) and 665.0173(1), Wis. Adm. Code]
- Maintain the container in good condition – if leaking transfer waste to a new container. [ss. NR 662.014(4) and 665.0171, Wis. Adm. Code]
- Label containers with the words “Hazardous Waste.” [ss. NR 662.014(4) and (5)(d), Wis. Adm. Code]
- Store incompatible wastes in separate individual containers, apart from each other or with berms or dikes constructed between the containers. [ss. NR 662.014(4), 665.0177(1), Wis. Adm. Code]

**Note:** Facilities that are small or large quantity generators must also label their hazardous waste containers with an indication of the hazards. For more information on container labeling and marking requirements, see the DNR’s guidance *Container and Tank Labeling and Marking* (WA-1903). Access by going to <https://dnr.wi.gov/files/pdf/pubs/wa/wa1903.pdf> or [dnr.wi.gov](http://dnr.wi.gov) and searching “WA-1903.” [ss. NR 662.015(1)(e)1. and 2., 662.017(1)(e) 1.a. and 2.a., 662.017(1)(e) 1.b. and 2.b., Wis. Adm. Code]

## Other Requirements

### Air Pollution Requirements

Perc is a hazardous air pollutant suspected of causing cancer and known to cause other serious health effects in humans. Air pollution is regulated under state and federal law, including the Clean Air Act. All dry cleaners who use perc in either transfer or dry-to-dry machines are required to undertake steps to prevent air pollution, including:

- inspecting dry cleaning equipment,
- keeping a log of leak detection and repairs,
- keeping a log of the amount of perc purchased for the past five years,
- following good housekeeping practices, and
- operating equipment according to manufacturer’s instructions.

Air pollution control requirements can be found in in [ch. 285](#), Wis. Stats., and [chs. NR 400-499](#), Wis. Adm. Code.

Air quality requirements vary depending on a dry cleaner’s source size (area source or major source), annual perc consumption, and whether their machines are new or existing. Source size depends on the types of machines at the shop and the amount of perc purchased. Source size criteria, restrictions on the use of perc machines and a summary of what requirements apply and when are found in the SBEAP’s dry cleaner compliance calendar.

Important requirements include:

- Keep all perchloroethylene in closed, non-leaking containers.
- Drain cartridge filters in their housing or sealed containers for at least 24 hours.
- Keep machine doors closed, unless loading and unloading fabrics.
- Regularly perform leak detection and repairs. Keep a written log of leak inspections. Small area sources are required to conduct inspections for perceptible (feel, see, smell) vapor leaks once every two weeks. Large or major area sources must perform inspections once a week.
- Inspect once per month for vapor leaks using either a halogenated hydrocarbon detector or a perc gas analyzer. For major sources, the monthly inspections must be conducted using a perc gas analyzer.
- Keep all records for a minimum of five years. Detailed explanations of record-keeping requirements can be found in the SBEAP's dry cleaner compliance calendar.
- Notification requirements per Form 4500-164. Go to [dnr.wi.gov](http://dnr.wi.gov) and search "Form 4500-164."

Questions on air pollution requirements for dry cleaners may be directed to the DNR's Small Business Environmental Assistance Program by calling 855-889-3021 or emailing [DNRsmallbusiness@wisconsin.gov](mailto:DNRsmallbusiness@wisconsin.gov).

## Wastewater Requirements

To restore and maintain the integrity of the nation's surface waters, wastewaters are regulated under state and federal authority, including the Clean Water Act. The CWA controls direct discharges to surface waters (e.g., through a pipe) from industrial processes or storm water systems associated with an industrial activity and indirect discharges, or discharges to wastewater treatment plants through a public sewer system. Industrial pollutants from the dry cleaning industry that might be regulated by CWA include perc, trichloroethane, and CFC-113. [ss. NR 215.03(1)(w)(y)(z), NR 809.07(2), and NR 809.24, Wis. Adm. Code]

Clean Water Act requirements can be found in in chapters NR [200-299 and 809, Wis. Adm. Code](#)

**It is illegal to dump unused and used solvents or dry cleaning wastewater on the ground, to a septic system or to the storm sewer.** It may also be illegal to discharge to a sanitary sewer unless the local sewer authority allows it under a permit or approval.

- Even if the discharge of wastewater is allowed by the sewer authority, the solvents may leak out of sanitary sewers that have bad joints or are cracked or damaged, resulting in an illegal discharge to the soil and possibly groundwater.
- Solvents may also leak into soil and groundwater through cracks in floors if the solvent is spilled on the floor itself. Remediation may be required if soil or groundwater is contaminated, and the remediation may be costly. [s. NR 720.02(1)(b), Wis. Adm. Code]

Typically, dry cleaners generate wastewaters containing trace amounts of solvent as a part of solvent recovery operations. Some dry cleaners may discharge this wastewater to a publicly owned treatment works (POTW) only under a written agreement with their POTW. [s. NR 211.17, Wis. Adm. Code]



<b>Potential Exclusions and Exemptions</b>	
<b>Domestic Sewage Exclusion</b>	<p>Mixtures of domestic sewage and other wastes that pass through a sewer system to a POTW for treatment are excluded from the definition of solid waste except as prohibited by the Resource Conservation and Recovery or the Clean Water Acts. [s. NR 661.0004(1)(a)2, Wis. Adm. Code]</p> <p>Discharging of a hazardous waste to a POTW requires a hazardous waste discharge report [s. NR 211.17, Wis. Adm. Code]. Generators are encouraged to contact their local POTW to find out what other regulations might apply.</p>
<b>Wastewater Treatment Unit Exemption</b>	<p>A tank system used to store or treat wastewater as part of an onsite wastewater treatment facility with a National Pollutant Discharge Elimination System (NPDES) permit or subject to pretreatment standards is exempt from the hazardous waste regulations [s. NR 661.0003(1)(b)4.a., Wis. Adm. Code].</p>

## Department of Revenue Requirements

The Wisconsin Department of Revenue regulates the licensing of dry cleaning facilities, the collection of license fees and the sale of dry cleaning products. For information on dry cleaning facility licenses and fees, see the DOR website: <https://www.revenue.wi.gov/Pages/FAQS/pcs-drycln.aspx>.

For questions about dry cleaner license and product fees or for assistance submitting quarterly fees, contact the Department of Revenue at 608-266-2776 or [DORSalesandUse@revenue.wi.gov](mailto:DORSalesandUse@revenue.wi.gov)

## Waste Minimization and Prevention of Product Loss

All facilities should follow these best practices to prevent pollution, product loss and illegal discharges:

- Drain filters in a way that prevents releases to air or surfaces for 72 hours prior to disposal. Distill the drained material.
- Clean lint screens and button traps often.
- Inspect the storage area weekly to ensure that containers are closed and not leaking.
- Maintain existing equipment and consider upgrades or modifications if affordable.
- Employ low-tech and high-tech wet cleaning (see sidebar).
- Consider high-flashpoint petroleum dry cleaning to reduce waste toxicity.
- Consider using alternatives to perc, such as liquid carbon dioxide, silicone-based solvent, petroleum solvent, and wet cleaning. These options may reduce costs, liability and the amount of hazardous waste generated.
- Do not discharge any dry cleaning products, used or dirty solvents or wastewater from dry cleaning machines into any sanitary sewer or septic tank or into surface waters.
- Use a closed, direct-coupled delivery system for all perc delivered to the facility.
- Surround each dry cleaning machine or other piece of equipment in which dry cleaning product is used by a containment dike able to contain any substance release.
- Seal the floor within the area surrounded by the dike or containment structure to make the floor impervious to dry cleaning product.

Learn more about the advantages of wet cleaning with this Kansas State University Pollution Prevention Institute [case study on dry cleaning](#).

A complete list of pollution prevention methods and best management practices is found in SBEAP's dry cleaner compliance calendar.

## Spill Cleanup

Be prepared to clean up incidental spills immediately to protect employees and the environment. Collect leaking and spilled liquid in sealable containers as far from one another as possible. Absorb remaining liquid in sand or inert absorbent and remove to a safe place. **Do not allow perchloroethylene or other spilled materials to enter the environment.** Workers should wear filter respirators if coming into contact with a perc release.

Subsection NR 292.11(2)(a), Wis. Adm. Code, requires that hazardous substance spills must be reported to the DNR spills hotline (1-800-943-0003) immediately unless exempted under s. NR 292.11(9), Wis. Adm. Code. Spills should be cleaned up by a professional contractor, particularly if the substance has drained into a floor drain, storm drain or outside onto the ground or a parking lot.

## Additional Resources

The DNR's Small Business Environmental Assistance Program:  
<https://dnr.wi.gov/topic/SmallBusiness/Resources/DryCleaners.html>

Have You Considered a Switch to Wet Cleaning?:  
<https://dnr.wi.gov/topic/SmallBusiness/documents/drycleaning/WetCleaningCaseStudy.pdf>

RCRA in Focus: Dry Cleaning: <https://www.epa.gov/sites/production/files/2015-01/documents/dryclean.pdf>

Wisconsin Fabricare Institute: <https://wiscleaners.com/>

## DNR Contact Information

For more information including [publications, inspection forms, and administrative codes and statutes](#), go to [dnr.wi.gov](http://dnr.wi.gov) and search "hazardous waste resources." Use the *Additional Resources* menu to navigate to specific topics. For staff contact information, go to the [staff directory](#), enter "hazardous waste requirements" in the subject field, and choose the appropriate county contact.

**Mailing address:** DNR Waste & Materials Management Program, PO Box 7921, Madison, WI 53707  
**Email:** [DNRWasteMaterials@Wisconsin.gov](mailto:DNRWasteMaterials@Wisconsin.gov)

### PUB-WA-1893 2022

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