

Dry Cleaner: Air Quality Requirements



State of Oregon
Department of
Environmental
Quality

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Background

It is customary for the U.S. Environmental Protection Agency (EPA) to set standards for the purpose of controlling hazardous air pollutant emissions from various businesses and industries.

In 1993, EPA issued air quality control standards for dry cleaners. Perchloroethylene (also known as "perc" or "PCE,"), the most widely used dry cleaning solvent in Oregon, is suspected of causing cancer in humans. Although many dry cleaners in the U.S. have already installed equipment to control perc air emissions, many are still without any controls.

For definitions of some of the terms used in this fact sheet, please see page 3.

How Is Perc Emitted?

Perc is released from dry cleaning machine vents and from "fugitive" emissions. Fugitive emissions occur when you open the doors to remove clothing, when you clean filters, and any time the machine is left open. They can also occur from equipment leaks.

Controls can be placed on the process vents to dramatically reduce perc emissions. Because these controls recover and recycle perc used in the cleaning process, they also dramatically reduce the amount of perc used overall, which benefits you financially and the environment as a whole.

Who Regulates Air Quality in Oregon?

The regulating agencies for air quality are the Oregon DEQ and, in Lane County, the Lane Regional Air Pollution Authority (LRAPA).

Most dry cleaners are already familiar with EPA and DEQ because of environmental regulations for managing hazardous wastes. DEQ's Air Quality Program regulations include process vent controls, fugitive controls, monitoring, record keeping and reporting. Air Quality standards, unlike those in the Hazardous Waste Program, are based on the amount of perc used.

Dry cleaners are also familiar with the issue of perc air emissions, regulated in the workplace by the Oregon Occupational Safety and Health Administration (OR-OSHA). The OSHA standards are designed to protect people who live, work or otherwise spend time near dry cleaning facilities. This fact sheet is about your air quality requirements only.

Understanding How the Regulations Affect Your Business

Step 1. What "category" is your business?

(check the box that applies)

You are a:	If your annual Perc use is:	✓
Small Area Source	Less than 140 gallons	<input type="checkbox"/>
Large Area Source	Between 140 and 2,100 gallons	<input type="checkbox"/>
Major Source	More than 2,100 gallons	<input type="checkbox"/>

Step 2. Is your dry cleaning facility considered “new” or “existing”?

(check the box that applies)

Your facility is:	If construction began:	
New	On or after Dec. 9, 1991	<input checked="" type="checkbox"/>
Existing	Prior to Dec. 9, 1991	<input type="checkbox"/>

Step 3. Check the table on page 4 for your requirements.

- If you checked “Existing” use Table 1
- If you checked “New” use Table 2

Note: Oregon law prohibited the use of transfer machines after June 30, 1998.

Step 4. Read the ‘Specific Compliance Requirements’ section below for more detailed information.

Step 5. Incorporate these steps into your routine.

Specific compliance requirements

Initial Reporting

Although the Notification and Compliance for Pollution Prevention Report was required by June 18, 1994, you may still submit one if you haven’t already done so. Please contact the DEQ immediately and a form will be provided.

Annual Compliance Reports

The “Dry Cleaners: Annual Hazardous Waste and Air Quality Compliance Report” is required to be submitted to DEQ each year by March 1. DEQ provides the reporting forms and information reported includes:

- Yearly perc-consumption
- Proof that pollution prevention requirements were met
- Signature by a responsible person

Monitoring

The following monitoring is required weekly for all dry cleaning equipment:

- **Refrigerated Condensers:** Measure and record the refrigerator condenser outlet temperature at the end of the cool-down cycle on a dry-to-dry machine. The temperature needs to be less than or equal to 45° F. The temperature difference between the refrigerated condenser inlet and outlet needs to be greater than or equal to 20° F.
- **Carbon Adsorbers:** Measure and record the perc concentration in the exhaust of the carbon adsorber with a colorimetric detector tube* while the dry-cleaning machine is venting to the adsorber. (Needs to be less than or equal to 100 parts per million.)
- **Records of the monitoring** must be maintained for at least 5 years.

Weekly Leak Detection

At least weekly, the dry cleaning system must be inspected for leaks during normal operations. The following items should be checked for leaks that can be detected by sight, smell or touch:

- hose and pipe connections, fittings, couplings and valves
- door gaskets and seatings
- filter gaskets and seatings
- pumps
- solvent tanks and containers
- water separators
- muck cookers

- stills
- exhaust dampers
- diverter valves
- cartridge filter housings

If any leaks are detected, they must be repaired within 24 hours; unless parts must be ordered for the repair. Repair parts must be ordered within 2 working days after the leak is detected and must be installed within 5 working days after they are received.

Work Practice

- Store all perc and perc waste in sealed containers.
- Keep machine doors shut when clothing is not being transferred.
- Drain cartridge filters in their housing (or other sealed container) for a minimum of 24 hours before they are removed from your facility.
- Operate and maintain all dry-cleaning equipment according to manufacturers' instructions.

Records Maintenance

The following information must be maintained on site for a period of 5 years:

- Annual Hazardous Waste and Air Quality Compliance Reports.
- Condenser or adsorber monitoring data.
- A log of the weekly leak detection inspection, including documentation of any leaks and repairs.
- The amount of perc purchased for the past 12 months, calculated each month.
- Operation and maintenance manuals for all dry cleaning equipment and control equipment at your facility.

**Check with your equipment manufacturer for purchase of colorimetric detector tubes or search the internet for online retailers.*

Definitions of Terms Used

Carbon Adsorber: A bed of activated carbon into which an air-perc gas-vapor stream is routed and adsorbed.

Colorimetric detector tube: A glass tube (sealed before use) containing a chemically impregnated material sensitive to perc. It measures the concentration of perc in the air. Sometimes called "sniffers."

Dry-to-dry machine: A one-machine dry-cleaning operation in which washing and drying are performed in the same machine.

Fugitive emissions: Releases of perc that cannot reasonably be vented through a vent, stack, or similar device. For example: leaks from faulty hose or pipe fittings, and evaporative losses in transfer machine systems.

Table 1. Requirements for Existing Dry Cleaning Facilities

Requirements	Small Area Source	Large Area Source	Major Source
Process Vent Controls	Install refrigerated condenser or equivalent by 9/23/96. Carbon adsorbers installed on existing machines before 9/22/93 can remain.		
Fugitive Controls	Store perc and perc waste in sealed containers. Perform leak detection and repair.		
Monitoring	Comply with weekly monitoring requirements for refrigerated condensers and carbon adsorbers.		
Annual Reporting	Complete and submit Dry Cleaners: Annual Hazardous Waste and Air Quality Compliance Report to DEQ by March 1.		
Leak Inspection	Perform weekly perc leak inspections.		
Operation/Maintenance	Operate and maintain dry-cleaning equipment according to manufacturer's instruction. *		

Record-keeping	Maintain records of perc purchases and consumption; leak detection/repair activities; required monitoring.*
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Process vent controls: Devices used to control emissions from a vent, stack, or similar mechanism.

Reclaimer: Equipment designed to extract residual perc from dry-cleaned clothes. A reclaimer is essentially a dryer.

Refrigerated condenser: A system into which an air-per-gas-vapor stream is routed, condensing the perc by cooling the gas-vapor stream. Often called "chillers."

Transfer machine system: A multiple-machine dry-cleaning operation in which washing and drying take place in different machines. Examples include (1) a washer and dryer, (2) a washer and reclaimer, and (3) a dry-to-dry machine and reclaimer. Oregon state law prohibited the operation of transfer equipment after June 30, 1998.

Table 2. Requirements for New Dry Cleaning Facilities

Requirements	Small Area Source	Large Area Source	Major Source
Process Vent Controls	Install refrigerated condenser or equivalent upon start-up.		Install refrigerated condenser and small carbon adsorber or equivalent.
Fugitive Controls	No new transfer systems.‡ Store perc and perc waste in sealed containers. Perform leak detection and repair.		
Monitoring	Comply with monitoring requirements for refrigerated condensers and carbon adsorbers.*		
Initial Reporting	Submit Compliance Report to EPA or DEQ within 30 calendar days from start-up date.		
Annual Reporting	Complete and submit Dry Cleaners: Annual Hazardous Waste and Air Quality Report to DEQ by March 1.		
Leak Inspection	Perform weekly leak inspections.		
Operation/Maintenance	Operate and maintain dry-cleaning equipment according to manufacturer's instruction. *		
Record-keeping	Maintain records of perc purchases and consumption; leak detection/repair activities; required monitoring.*		

**See above for more information about required monitoring, operation/maintenance, records and reporting.*

For more information about Oregon's Dry Cleaner Program visit DEQ's dry cleaner webpage:

<http://www.oregon.gov/deq/Hazards-and-Cleanup/Pages/Dry-Cleaner.aspx>

For more information please contact

Dry Cleaner Program Coordinator Nancy Cardwell at 503-229-6240

Alternative formats

Documents can be provided upon request in an alternate format for individuals with disabilities or in a language other than English for people with limited English skills. To request a document in another format or language, call DEQ in Portland at 503-229-5696, or toll-free in Oregon at 1-800-452-4011, ext. 5696; or email deqinfo@deq.state.or.us.

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