06‑096 DEPARTMENT OF ENVIRONMENTAL PROTECTION

# **CHAPTER 125: PERCHLOROETHYLENE DRY CLEANER REGULATION**

SUMMARY: This regulation establishes the control technology required for all dry cleaners which are area sources of perchloroethylene in the State of Maine.

1. **Scope and Applicability**
   1. **General Applicability.** This regulation applies to all new and existing area source dry cleaners that use perchloroethylene in the State of Maine upon the effective date of the regulation unless otherwise specified in the regulation.
   2. **Applicability Categories**

(1) Area source dry cleaners are those sources with a twelve-month rolling total consumption of perchloroethylene of 2100 gallons or less.

(2) Major source dry cleaners are those sources with a twelve-month rolling total consumption of perchloroethylene greater than 2100 gallons. Major sources of perchloroethylene must comply with 40 C.F.R. Part 63, Subpart M.

(3) Co-located dry cleaners are those sources that meet the definition of co-located in subsection 2(D) of this Chapter.

1. **Definitions.** For the purposes of this Chapter, the following definitions apply:

**A. Ancillary Equipment**. “Ancillary equipment” means the equipment used with a dry cleaning machine in a dry cleaning system including, but not limited to, emission control devices, pumps, filters, muck cookers, stills, solvent tanks, solvent containers, water separators, exhaust dampers, diverter valves, interconnecting piping, hoses, and ducts.

**B. Calendar Year.** “Calendar year” means a 12-month period starting January 1 and ending December 31 of each year.

**C. Carbon Adsorber.** “Carbon adsorber” means a device containing carbon as an adsorbent material used for the removal of perchloroethylene, an inlet and outlet for exhaust gases; and a system to regenerate or replace the saturated adsorbent.

**D. Co-located.** “Co-located” means a dry cleaner located in a building with a residence, a day care center, a health care facility, a prison, an elementary school, a middle or high school, a children's pre-school, a senior center, a youth center or other facility designed to be occupied by children or the elderly.

**E. Condenser.** “Condenser” means a recovery device that removes condensable vapors by a reduction in the temperature of the captured gases. A surface condenser affects condensation by indirect contact between the coolant and process gas stream, through use of a refrigerated condenser coil which contains coolant.

**F. Construction.** “Construction” means the fabrication (onsite), erection, or installation of a perchloroethylene dry cleaning system.

**G. Control device.** “Control device” means equipment (e.g. carbon adsorber, refrigerated condenser) used to reduce the amount of air pollutant(s) in an air stream prior to discharge to the ambient air.

**H. Desorption.** “Desorption” means regeneration of a carbon adsorber by removal of the perchloroethylene adsorbed on the carbon.

**I. Diverter valve.** “Diverter valve” means a flow control device that prevents room air from passing through a refrigerated condenser when the door of the dry-cleaning machine is open.

**J. Dry cleaner.** “Dry cleaner” means a facility engaged in the cleaning of garments in perchloroethylene by means of one or more washes in the solvent, extraction of the solvent by spinning, and drying by tumbling in an air stream. The facility includes, but is not limited to any washer, dryer, emission control device(s), exhaust dampers, diverter valves, filter purification system, waste disposal system, stills, holding tank, muck cooker, water separators, filters, solvent containers, pump and attendant piping, hoses, ducts and valves.

**K. Dry-cleaning drum.** “Dry-cleaning drum” means the perforated container inside the dry-cleaning machine that holds the articles during dry-cleaning.

**L. Dry cleaning system.** “Dry cleaning system” means a dry cleaning machine and its ancillary equipment.

**M. Dryer.** “Dryer” means a machine used to remove perchloroethylene from articles by tumbling them in a heated air stream.

**N. Dry-to-dry machine.** “Dry-to-dry machine” means a one-machine dry cleaning operation in which washing and drying are performed in the same machine.

**O. Exhaust damper.** “Exhaust damper” means a flow control device that prevents the air-perchloroethylene gas-vapor stream from exiting the dry-cleaning machine into a carbon adsorber before room air is drawn into the dry-cleaning machine.

**P. Filter.** “Filter” means a porous device through which perchloroethylene is passed to remove contaminants in suspension. Examples include, but are not limited to, lint filter (button trap), cartridge filter, tubular filter, regenerative filter, prefilter, polishing filter, and spin disc filter.

**Q. Garment.** “Garment” means any article placed in the washer for purposes of cleaning that article.

**R. Halogenated hydrocarbon detector.** “Halogenated hydrocarbon detector” means a portable device capable of detecting vapor concentrations of perchloroethylene of 25 parts per million by volume and indicating a concentration of 25 parts per million by volume or greater by emitting an audible or visual signal that varies as the concentration changes.

**S. Heating coil.** “Heating coil” means the device used to heat the air stream circulated from the dry cleaning machine drum, after perchloroethylene has been condensed from the air stream and before the stream re-enters the dry cleaning machine drum.

**T. Major Source.** “Major source” means a source whose twelve-month rolling total consumption of perchloroethylene exceeds 2100 gallons.

**U. Muck cooker.** “Muck cooker” means a device for heating perchloroethylene-laden waste material to volatilize and recover perchloroethylene.

**V. Perchloroethylene or perc or tetrachloroethylene or PCE.** “Perchloroethylene” or “perc” or “tetrachloroethylene” or “PCE” means a colorless volatile chlorinated hydrocarbon with a chemical formula of C2Cl4 and a CAS (Chemical Abstract System) Registry number of 127‑18‑4.

**W. Perchloroethylene consumption**. “Perchloroethylene consumption” means the twelve-month rolling total volume (sum) of perchloroethylene purchased based upon monthly purchase receipts or other reliable measures.

**X. Perchloroethylene Consumption Limit.** “Perchloroethylene consumption limit” means a dry-cleaner’s highest twelve-month rolling total perchloroethylene consumption, as calculated according to subsection 6(A)(2).

**Y. Perchloroethylene gas analyzer or PCE gas analyzer.**“Perchloroethylene gas analyzer” or “PCE gas analyzer”means a flame ionization detector, photoionization detector, or infrared analyzer capable of detecting vapor concentrations of perchloroethylene of 25 parts per million by volume.

**Z. Reclaimer.** “Reclaimer” means a machine used to remove perchloroethylene from articles by tumbling them in a heated air stream.

**AA. Refrigerated condenser.** “Refrigerated condenser” means a vapor recovery system into which an air-perchloroethylene gas-vapor stream is routed and the perchloroethylene is condensed by cooling the gas-vapor stream.

**BB. Refrigerated condenser coil.** “Refrigerated condenser coil” means the coil containing the chilled liquid used to cool and condense the perchloroethylene.

**CC. Residence.** “Residence” means any dwelling or housing in which people reside.

**DD. Still.** “Still” means any device used to volatilize and recover perchloroethylene from contaminated perchloroethylene.

**EE. Temperature sensor.** “Temperature sensor” means a thermometer or thermocouple used to measure temperature.

**FF. Twelve-month Rolling Total.** “Twelve-month rolling total” means the total perchloroethylene consumed during any consecutive 12-month period.

**GG. Vapor leak. “**Vapor leak”means a perchloroethylene vapor concentration exceeding 25 parts per million by volume (50 parts per million by volume as methane) as indicated by a halogenated hydrocarbon detector or perchloroethylene gas analyzer.

**HH. Washer**. “Washer” means a machine used to clean articles by immersing them in perchloroethylene.

**II. Water separator.** “Water separator” means any device used to recover perchloroethylene from a water-perchloroethylene mixture.

1. **Emission Limitations and Performance Standard** **Requirements**

**A. Requirements for co-located dry cleaners**

1. Beginning on June 24, 2009, no new or relocated perchloroethylene dry cleaning system may be installed in a co-located facility.

(2) Any new or relocated dry cleaning system located in a building with a residence which commenced construction on or after December 21, 2005 must comply with 40 C.F.R. Parts 63.320(b)(2) and 63.320(b)(3) as amended up to July 19, 2013.

(3) After December 21, 2020, all co-located dry cleaners must completely eliminate perchloroethylene use and remove all perchloroethylene dry cleaning equipment from the building.

**B. Control Technology Requirements for Sources Installed after June 2, 1991.** All dry cleaning systems installed after June 2, 1991, must install, operate, and maintain a refrigerated condenser system which reduces perchloroethylene emissions to no more than 100 parts per million by volume (ppmv) before dilution measured at a distance of no greater than 3 feet from the dry-cleaning drum. These dry cleaning systems must comply with the Compliance Methods and Monitoring Requirements in section 5 of this Chapter.

**C. Control Technology Requirements for Sources Installed after February 12, 1997.**

All dry cleaning systems installed after February 12, 1997, must install operate, and maintain a refrigerated condenser system with a carbon adsorber which reduces perchloroethylene emissions to no more than 100 parts per million by volume (ppmv) before dilution measured at a distance of no greater than 3 feet from the dry-cleaning drum. These dry cleaning systems must comply with the Compliance Methods and Monitoring Requirements in section 5 of this Chapter.

**D. Control Technology Requirements for Sources Installed after December 21, 2005.**

All dry cleaning systems installed after December 21, 2005 must route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a refrigerated condenser and pass the air-perchloroethylene gas-vapor stream from inside the dry cleaning machine drum through a non-vented carbon adsorber or equivalent control device which reduces perchloroethylene emissions to no more than 100 parts per million by volume (ppmv) before dilution measured at a distance of no greater than 3 feet from the dry-cleaning drum immediately before the door of the dry cleaning machine is opened. These dry cleaning systems must comply with the Compliance Methods and Monitoring Requirements in section 5 of this Chapter.

**E. Control Technology Requirements for Sources Installed on or before June 2, 1991**. All dry cleaning systems installed on or before June 2, 1991 must be equipped with one of the following control devices on or before October 1, 1991.

* + 1. **Option A, Carbon Adsorber System**. A carbon adsorber which reduces perchloroethylene emissions to no more than 100 parts per million by volume (ppmv) before dilution measured at a distance of no greater than 3 feet from the dry-cleaning drum. The carbon adsorber shall not be bypassed at any time allowing perchloroethylene to be vented directly to the atmosphere. The carbon adsorber shall be monitored in accordance with subsection 5(A) of this Chapter.
    2. **Option B, Refrigerated Condenser System.** A refrigerated condenser system which reduces perchloroethylene emissions to no more than 100 parts per million by volume (ppmv) before dilution measured at a distance of no greater than 3 feet from the dry-cleaning drum must be installed on a dry-to-dry machine and reclaimer, The condenser shall be monitored in accordance with subsection 5(B) of this Chapter.

(3) **Option C, Other Devices Approved by the Department and EPA**. Any other equally effective control device as approved by the Commissioner of the Department and EPA, pursuant to 40 CFR 63.325.

**F.** The installation and use of any other type of perchloroethylene dry cleaning system including transfer machines, is strictly prohibited.

**G. General Maintenance Performance Standard Requirements.** All new and existing dry cleaners shall comply with the following requirements:

(1) Filtration cartridges must be drained in the filter housing for at least 24 hours pursuant to 40 CFR Part 63.322(i), or as approved by the Commissioner of the Department and EPA. When any filtration cartridge is removed from the filter housing, it must be placed in a sealed container which does not allow the solvent in the filter to be emitted to the atmosphere, and must be disposed in accordance with state and federal requirements;

1. All perchloroethylene and perchloroethylene containing waste must be stored in tightly sealed containers so that no perchloroethylene is emitted to the atmosphere;
2. All facilities must maintain the system as to prevent the leaking of perchloroethylene liquid, and prevent perchloroethylene vapor losses greater than 25 ppmv from gaskets, seals, ducts, and ancillary equipment.

(a) Except as provided in subsection 3(G)(3)(c) of this Chapter, all leaks of perchloroethylene liquid or vapor must be repaired within 24 hours of detection.

(b) Except as provided in subsection 3(G)(3)(c) of this Chapter, if temperature, concentration of perchloroethylene, or other parameters required to be monitored in Section 4 of this Chapter do not meet the values or conditions specified, adjustments or repairs must be made within 24 hours of detection.

(c) If repair parts are not available at the facility, the parts must be ordered within two working days of detection. Such repair parts must be installed as soon as possible but no later than five working days after receipt.

(d) Equipment with a leak that has not been repaired by the end of the fifteenth working day after detection must not be operated until the leak is repaired;

1. The owner or operator shall close the door of each dry cleaning machine immediately after transferring garments to or from the machine, and shall keep the door closed at all other times;
2. The owner or operator of each dry cleaning system shall operate and maintain the system in accordance with the manufacturer's specifications and recommendations; and
3. The owner or operator must develop and implement a written startup, shutdown and malfunction plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown and malfunction; a program of corrective action for malfunctioning process; and air pollution control and monitoring equipment used to comply with the standard.

**4. Control Device Operation and Maintenance**

A. **Carbon Adsorbers**

(1) All exhaust from the washer, dryer, filter purification system, holding "tanks" and attendant piping and valves must be routed through the carbon adsorber. The carbon adsorber shall be operated at an air flow capacity at least equal to the unrestricted total exhaust gas flow rate of the dry cleaning machines.

(2) Any dry cleaner which uses a carbon adsorber to comply with this Chapter must regenerate the carbon bed in accordance with the manufacturer's recommendations, except that the carbon bed shall be regenerated no less than either weekly, or after twenty five (25) loads, whichever period is greater.

* + - 1. The 100 ppmv emission limit from the carbon adsorber must be met regardless of the regeneration requirements of this Section

(b) The carbon adsorber must not be bypassed to the atmosphere during regeneration.

B. **Refrigerated Condenser System**

(1) A refrigerated condenser system must be installed on a dry-to-dry machine and reclaimer, provided that the dryer/condenser system is closed to the atmosphere except when articles are being loaded or unloaded at which time a door fan is activated that draws air into the dryer.

(2) The condenser shall be monitored in accordance with subsection 5(B). The temperature at the dryer/condenser outlet must be less than or equal to 45°F. This condenser shall be monitored in accordance with section 5(B).

**5. Compliance Methods and Monitoring Requirements**

**A. Carbon Adsorber Systems.** The owner/operator of any dry cleaning system using a carbon adsorber to comply with the Control Technology Requirements found in section 3 of this Chapter must establish a program of regular carbon bed desorption and compliance monitoring.

(1) Carbon bed desorption shall be conducted in accordance with the manufacturer's recommendations, except that the carbon bed shall be regenerated no less than either weekly, or after twenty five (25) loads, whichever period is greater. The owner/operator shall maintain a record of all carbon bed desorptions which shall include date of desorption and number of loads between desorptions as well as any other evidence demonstrating that the carbon adsorber has been properly installed, operated and maintained.

(2) The exhaust of the carbon adsorber shall be measured weekly with a perchloroethylene gas analyzer used in accordance with the manufacturer's instructions. The measurement shall be taken in front of and at a distance of no greater than 3 feet from the dry-cleaning drum opening immediately after the door of the dry cleaning machine is opened and the clothing has been removed. The owner/operator shall maintain a record of all analyzer readings.

**B. Refrigerated Condenser Systems**. The owner/operator of any dry cleaning system using a refrigerated condenser to comply with the Control Technology Requirements found in section 3 of this Chapter must either:

(1) measure the temperature on the outlet side of the condenser with a temperature sensor to determine if it is equal to or less than 7.2 [degrees] C (45 [degrees] F) before the end of the cool-down or drying cycle while the gas-vapor stream is flowing through the condenser. The temperature shall be measured at the end of the cool down cycle while the gas is still exhausting using a test port located in the effluent gas stream of the refrigerant condenser or a laser thermometer. This temperature must be recorded weekly, and the temperature sensor shall be used in accordance with the manufacturer’s instructions and specifications and shall be designed to measure a temperature of 45°F (7.2°C) to an accuracy of ±2°F (±1.1°C); or

(2) monitor refrigeration system high pressure and low pressure during the drying phase to determine if they are in the range specified in the manufacturer’s operating instructions and record the pressure readings weekly.

**C. System Inspection of All Unit Types**. The owner or operator of a dry cleaner shall determine compliance with the General Maintenance and Performance Standard Requirements subsection (3)(G)(3), on a weekly basis by using a halogenated hydrocarbon detector or perchloroethylene gas analyzer designed to measure 10-500 ppmv of perchloroethylene with an accuracy of ± 5 ppmv that is operated according to manufacturer’s instructions. The operator shall place the probe inlet at the surface of each of the following component interfaces where leakage could occur and move it slowly along the interface periphery.

(1) Hose and pipe connections, fittings, couplings and valves;

(2) Machine door gaskets, and seatings;

(3) Filter head gaskets and seatings;

(4) Pumps;

(5) Solvent tanks and storage containers;

(6) Water separators;

(7) Muck cookers;

(8) Stills;

(9) Saturated lint from lint basket;

(10) Exhaust dampers;

(11) All filter housings; and

(12) All other ancillary equipment; and

**6. Recordkeeping Requirements**

**A.** All dry cleaning facilities must keep a copy of the design specifications and operating manual for each dry cleaning system on-site; and keep receipts of perchloroethylene purchases and record in a log the following:

(1) The volume of perchloroethylene purchased each month. This number represents the perchloroethylene purchases for a given month.

(2) The calculated value of the twelve-month rolling total perchloroethylene consumption limit. To calculate the twelve-month rolling total perchloroethylene consumption limit, the owner/operator shall perform the following calculations on the first day of every month:

(a) Sum up the volume of perchloroethylene purchases made in each of the previous 12 months, as recorded in the log.

(b) If no perchloroethylene purchases were made in a given month, then the perchloroethylene consumption for that month is zero gallons.

(c) The highest twelve-month rolling total is the facility’s perchloroethylene consumption limit.

(3) The dates when the dry cleaning system was inspected for leaks in compliance with subsection 5(C) of this Chapter, and the name and location of any dry cleaning system parts where detectable leaks were found.

(4) The dates of repair and records of written or verbal orders for repair parts to demonstrate compliance with subsection 3(G)(3) of this Chapter.

(5) The date and monitoring results (temperature sensor or pressure gauge) for compliance with subsection 5~~4~~(B) of this Chapter.

(6) The date and gas analyzer monitoring results, if a carbon adsorber is used for compliance with section 3(B),3(C), 3(D), and 3(E).

(7) The date of desorption and the number of loads between desorption of the carbon adsorber.

The log, perchloroethylene receipts, all manufacturer design specifications and operation manuals for each dry cleaning system located at the facility must be maintained on site for at least five (5) years and must be made available to the Department upon request. An owner that operates more than one dry cleaner may store records older than one year from all facilities at one dry cleaner location or at a centralized office located in the State of Maine.

**7. Registration Requirements**

**A.** The owners or operators of all dry cleaners shall register with the Department annually.

**B.** Registration shall be on a form prescribed by the Department and shall include but is not limited to the following information:

(1) Name of facility and the name of the owner or operator who is responsible;

(2) Facility address and telephone;

(3) Whether the dry cleaner is located in a building with a residence (even if the residence is vacant at the time of this notification), or with a day care center, a health care facility, a prison, an elementary school, a middle or high school, a children's pre-school, a senior center, a youth center or other facility inhabited by children or the elderly;

(4) Type of control device or devices in use for each dry cleaning system;

(5) Number and type of dry cleaning machines, and when they were installed;

(6) Number and type of emission control devices and when they were installed;

(7) The total perchloroethylene consumption for each of the previous twelve months as required under subsection 5(A)(2) of this Chapter;

(8) A certification of the source applicability category, i.e. whether a facility is a major source or an area source; and

(9) An estimate of the hazardous waste that was shipped off-site.

**C.** Registration is due on or before March 15, for the previous calendar year’s activities, and must be signed and verified as accurate and true by the owner or operator of the facility.

**D.** If a source starts-up after February 12, 1997 and thus has not submitted a compliance certification (as required by 40 C.F.R. Section 63.324(b)), the dry cleaner shall submit the following:

(1) The yearly perchloroethylene consumption limit based on the twelve-month rolling total perchloroethylene consumption limit as specified in subsection 6~~5~~(A)(2) of this Chapter; and

(2) Whether or not they are in compliance with this rule.

(3) This certification shall be signed and verified as true and accurate, and submitted to the Department and EPA no later than 30 days after the start-up date.

**E.** The owner or operator of a dry cleaning that is ceasing operations shall notify the Department pursuant to section 11, Closure Requirements of the 06-096 Chapter 851 Standards for Generators of Hazardous Wastes rule.

AUTHORITY: 38 M.R.S.A. Section 585‑B

EFFECTIVE DATE: June 2, 1991

EFFECTIVE DATE: June 2, 1991

Amended: February 12, 1997

Amended: January 14, 2003

Amended: June 24, 2009

Amended: August 28, 2013, filing 2013-205

APAO WORD VERSION CONVERSION (IF NEEDED) AND ACCESSIBILITY CHECK: July 15, 2025