

Chapter NR 468

EMISSION STANDARDS FOR HAZARDOUS AIR
POLLUTANTS FOR MISCELLANEOUS PROCESSES

- NR 468.01 Applicability; purpose (p. 690-1) NR 468.20 Perchloroethylene dry cleaning facilities (p. 690-1)
- NR 468.02 Definitions (p. 690-1)

NR 468.01 Applicability; purpose. (1) **APPLICABILITY.** This chapter applies to miscellaneous sources of hazardous air pollutants including perchloroethylene dry cleaning, petroleum solvent dry cleaning, sterilization facilities, chromic acid anodizing, decorative chromium electroplating, hard chromium electroplating, halogenated solvent cleaners, plywood and particle board manufacturing, and pulp and paper production, and to their owners and operators.

(2) **PURPOSE.** This chapter is adopted under ss. 144.31 and 144.375 (5), Stats., to establish source categories for sources of hazardous air pollutants and to establish emission standards for these source categories in order to protect air quality.

History: Cr. Register, June, 1995, No. 474, eff. 7-1-95.

NR 468.02 Definitions. The definitions contained in ch. NR 400 apply to the terms used in this chapter. In addition, the definitions contained in individual sections of this chapter apply to the terms used in those sections.

History: Cr. Register, June, 1995, No. 474, eff. 7-1-95.

NR 468.20 Perchloroethylene dry cleaning facilities. (1) **APPLICABILITY.** (a) The provisions of this section apply to the owner or operator of each dry cleaning facility that uses perchloroethylene.

(b) Each dry cleaning system that commences construction or reconstruction on or after December 9, 1991, shall be in compliance with the provisions of this section beginning on July 1, 1995 or immediately upon startup, whichever is later, except for dry cleaning systems constructed or reconstructed before September 22, 1993, which shall comply with sub. (3) (b) beginning on September 23, 1996, and shall comply with other provisions of this section by July 1, 1995.

Note: Dry cleaning systems installed before the date the federal rule became effective, September 22, 1993, are required under s. NR 423.04 (3) to use a carbon adsorption system or equivalent.

(c) Each dry cleaning system that commenced construction or reconstruction before December 9, 1991, shall comply with subs. (3) (c), (d), (i), (j), (k), (l) and (m), (4) (d) and (5) (b), (d) 1. to 4. and (e) beginning on July 1, 1995, and shall comply with other provisions of this section by September 23, 1996.

(d) Each existing dry-to-dry machine and its ancillary equipment located in a dry cleaning facility that includes only dry-to-dry machines and each existing transfer machine system and its ancillary equipment, as well as each existing dry-to-dry machine and its ancillary equipment, located in a dry cleaning facility that includes both transfer machine systems and dry-to-dry machines is exempt from subs. (3), (4) and (5), ex-

cept subs. (3) (c), (d), (i), (j), (k), (l) and (m), (4) (d) and (5) (b), (d) 1. to 4. and (e), if the total perchloroethylene consumption of the dry cleaning facility is less than 530 liters (140 gallons) per year. Consumption is determined according to sub. (4) (d).

(e) Each existing transfer machine system and its ancillary equipment located in a dry cleaning facility that includes only transfer machine systems is exempt from subs. (3), (4) and (5), except subs. (3) (c), (d), (i), (j), (k), (l), and (m), (4) (d) and (5) (b), (d) 1. to 4. and (e), if the perchloroethylene consumption of the dry cleaning facility is less than 760 liters (200 gallons) per year. Consumption is determined according to sub. (4) (d).

(f) If the total yearly perchloroethylene consumption of a dry cleaning facility determined according to sub. (4) (d) is initially less than the amounts specified in par. (d) or (e), but later exceeds those amounts, the existing dry cleaning systems in the dry cleaning facility must comply with subs. (3), (4) and (5) by 180 calendar days from the date that the facility determines it has exceeded the amounts specified, or by September 23, 1996, whichever is later.

(g) A dry cleaning facility is a major source if the facility emits or has the potential to emit more than 9.1 megagrams per year (10 tons per year) of perchloroethylene to the atmosphere. In lieu of measuring or determining a facility's potential to emit perchloroethylene emissions, a dry cleaning facility is a major source if:

1. It includes only dry-to-dry machines and has a total yearly perchloroethylene consumption greater than 8,000 liters (2,100 gallons) as determined according to sub. (4) (d); or

2. It includes only transfer machine systems or both dry-to-dry machines and transfer machine systems and has a total yearly perchloroethylene consumption greater than 6,800 liters (1,800 gallons) as determined according to sub. (4) (d).

(h) A dry cleaning facility is an area source if it does not meet the conditions of par. (g).

(i) If the total yearly perchloroethylene consumption of a dry cleaning facility determined according to sub. (4) (d) is initially less than the amounts specified in par. (g), but then exceeds those amounts, the dry cleaning facility becomes a major source and all dry cleaning systems located at that dry cleaning facility must comply with the appropriate requirements for major sources under subs. (3), (4) and (5) by 180 calendar days from the date that the facility determines it has exceeded the amount specified, or by September 23, 1996, whichever is later.

(j) All coin-operated dry cleaning machines are exempt from the requirements of this section.

(2) DEFINITIONS. As used in this section, terms not defined in this subsection have the meanings given in ch. NR 400. In addition, the following definitions apply to the terms used in this section.

(a) "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 Register, June, 1995, No. 474

tanks, solvent containers, water separators, exhaust dampers, diverter valves, interconnecting piping, hoses and ducts.

(am) "Area source" means any perchloroethylene dry cleaning facility that meets the conditions of sub. (1) (h).

(b) "Articles" mean clothing, garments, textiles, fabrics and leather goods that are dry cleaned.

(bm) "Carbon adsorber" means a bed of activated carbon into which an air-perchloroethylene gas-vapor stream is routed and which adsorbs the perchloroethylene onto the carbon.

(c) "Colorimetric detector tube" means a glass tube, sealed prior to use, containing material impregnated with a chemical that is sensitive to perchloroethylene and designed to measure the concentration of perchloroethylene in air.

(d) "Construction", for purposes of this section, means the on site fabrication, erection or installation of a dry cleaning system subject to this section.

(dm) "Desorption" means regeneration of a carbon adsorber by removal of the perchloroethylene adsorbed on the carbon.

(e) "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.

(em) "Dry cleaning" means the process of cleaning articles using perchloroethylene.

(f) "Dry cleaning cycle" means the washing and drying of articles in a dry-to-dry machine or transfer machine system.

(fm) "Dry cleaning facility" means an establishment with one or more dry cleaning systems.

(g) "Dry cleaning machine" means a dry-to-dry machine or each machine of a transfer machine system.

(gm) "Dry cleaning machine drum" means the perforated container inside the dry cleaning machine that holds the articles during dry cleaning.

(h) "Dry cleaning system" means a dry-to-dry machine and its ancillary equipment or a transfer machine system and its ancillary equipment.

(hm) "Dryer" means a machine used to remove perchloroethylene from articles by tumbling them in a heated air stream (see reclaimer).

(i) "Dry-to-dry machine" means a one-machine dry cleaning operation in which washing and drying are performed in the same machine.

(im) "Equivalent control device" means an equivalent emission control technology as determined by the administrator.

Note: The procedure for making this determination is found under 40 CFR 63.325 as in effect on July 1, 1994.

(j) "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.

(jm) "Existing" means a dry cleaning system on which construction or reconstruction commenced before December 9, 1991.

(k) "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.

(km) "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 reenters the dry cleaning machine drum.

(l) "Major source" means any dry cleaning facility that meets the conditions of sub. (1) (g).

(lm) "Muck cooker" means a device for heating perchloroethylene-laden waste material to volatilize and recover perchloroethylene.

(m) "New" means a dry cleaning system on which construction or reconstruction commenced on or after December 9, 1991.

(mm) "Perceptible leaks" mean any perchloroethylene vapor or liquid leaks that are obvious from:

1. The odor of perchloroethylene;
2. Visual observation, such as pools or droplets of liquid; or
3. The detection of gas flow by passing the fingers over the surface of equipment.

(n) "Perchloroethylene consumption" means the total volume of perchloroethylene purchased based upon purchase receipts or other reliable measures.

(nm) "Reclaimer" means a machine used to remove perchloroethylene from articles by tumbling them in a heated air stream (see dryer).

(o) "Reconstruction", for purposes of this section, means replacement of a washer, dryer, or reclaimer; or replacement of any components of a dry cleaning system to such an extent that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source.

(om) "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.

(p) "Refrigerated condenser coil" means the coil containing the chilled liquid used to cool and condense the perchloroethylene.

(pm) "Room enclosure" means a stationary structure that encloses a transfer machine system, and is vented to a carbon adsorber or an equivalent control device during operation of the transfer machine system.

(q) "Source", for purposes of this section, means each dry cleaning system.

(qm) "Still" means any device used to volatilize and recover perchloroethylene from contaminated perchloroethylene.

(r) "Transfer machine system" means a multiple-machine dry cleaning operation in which washing and drying are performed in different machines. Examples include, but are not limited to:

1. A washer and dryers,
2. A washer and reclaimers, or
3. A dry-to-dry machine and reclaimers.

(rm) "Washer" means a machine used to clean articles by immersing them in perchloroethylene. This includes a dry-to-dry machine when used with a reclaimer.

(s) "Water separator" means any device used to recover perchloroethylene from a water-perchloroethylene mixture.

(3) STANDARDS. (a) The owner or operator of each existing dry cleaning system shall comply with either subd. 1. or 2. and shall comply with subd. 3. if applicable.

1. Route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a refrigerated condenser or an equivalent control device.

2. Route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a carbon adsorber installed on the dry cleaning machine prior to September 22, 1993.

3. Contain the dry cleaning machine inside a room enclosure if the dry cleaning machine is a transfer machine system located at a major source. Each room enclosure shall be:

- a. Constructed of materials impermeable to perchloroethylene; and
- b. Designed and operated to maintain a negative pressure at each opening at all times that the machine is operating.

(b) The owner or operator of each new dry cleaning system shall:

1. Route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a refrigerated condenser or an equivalent control device;

2. Eliminate any emission of perchloroethylene during the transfer of articles between the washer and dryers; and

Note: Subdivision 2., in effect, prohibits the installation of transfer machine systems because such systems normally cannot meet this provision.

3. Pass the air-perchloroethylene gas-vapor stream from inside the dry cleaning machine drum through a carbon adsorber or equivalent control device immediately before or as the door of the dry cleaning machine is opened if the dry cleaning machine is located at a major source.

(c) The owner or operator shall close the door of each dry cleaning machine immediately after transferring articles to or from the machine, and shall keep the door closed at all other times.

(d) The owner or operator of each dry cleaning system shall operate and maintain the system according to the manufacturers' specifications and recommendations.

(e) Each refrigerated condenser used for the purposes of complying with par. (a) or (b) and installed on a dry-to-dry machine, dryer or reclaimer shall be:

1. Operated to not vent or release the air-perchloroethylene gas-vapor stream contained within the dry cleaning machine to the atmosphere while the dry cleaning machine drum is rotating;

2. Monitored according to sub. (4) (a) 1.; and

3. Operated with a diverter valve, which prevents air drawn into the dry cleaning machine when the door of the machine is open from passing through the refrigerated condenser.

(f) Each refrigerated condenser used for the purpose of complying with par. (a) and installed on a washer:

1. Shall be operated to not vent the air-perchloroethylene gas-vapor contained within the washer to the atmosphere until the washer door is opened;

2. Shall be monitored according to sub. (4) (a) 2.; and

3. Shall not use the same refrigerated condenser coil for the washer that is used by a dry-to-dry machine, dryer or reclaimer.

(g) Each carbon adsorber used for the purposes of complying with par. (a) or (b):

1. Shall not be bypassed to vent or release any air-perchloroethylene gas-vapor stream to the atmosphere at any time; and

2. Shall be monitored according to the applicable requirements in sub. (4) (b) or (c).

(h) Each room enclosure used for the purposes of complying with par. (a) 3.:

1. Shall be operated to vent all air from the room enclosure through a carbon adsorber or an equivalent control device; and

2. Shall be equipped with a carbon adsorber that is not the same carbon adsorber used to comply with par. (a) 2. or (b) 3.

(i) The owner or operator of an affected facility shall drain all cartridge filters in their housing, or other sealed container, for a minimum of 24 hours, or shall treat such filters in an equivalent manner, before removal from the dry cleaning facility.

(j) The owner or operator of an affected facility shall store all perchloroethylene and wastes that contain perchloroethylene in solvent tanks or solvent containers with no perceptible leaks.

(k) Except as provided in par. (l), the owner or operator of a dry cleaning system shall inspect all of the following components weekly for perceptible leaks while the dry cleaning system is operating:

1. Hose and pipe connections, fittings, couplings and valves.
2. Door gaskets and seatings.
3. Filter gaskets and seatings.
4. Pumps.
5. Solvent tanks and containers.
6. Water separators.
7. Muck cookers.
8. Stills.
9. Exhaust dampers.
10. Diverter valves.
11. Cartridge filter housings.

(l) The owner or operator of a dry cleaning facility with a total facility consumption below the applicable consumption levels of sub. (1) (d) or (e) shall inspect the components listed in par. (k) biweekly for perceptible leaks while the dry cleaning system is operating.

(m) 1. Except as provided under subd. 2., the owner or operator of a dry cleaning system shall repair all perceptible leaks detected under par. (k) or (l) within 24 hours.

2. If repair parts must be ordered, either a written or verbal order for those parts shall be initiated within 2 working days of detecting such a leak. Such repair parts shall be installed within 5 working days after receipt.

(n) If parameter values monitored under par. (e), (f) or (g) do not meet the values specified in sub. (4) (a), (b) or (c), adjustments or repairs shall be made to the dry cleaning system or control device to meet those values. If repair parts must be ordered, either a written or verbal order for such parts shall be initiated within 2 working days of detecting such a parameter value. Such repair parts shall be installed within 5 working days after receipt.

(4) TEST METHODS AND MONITORING. (a) When a refrigerated condenser is used to comply with sub. (3) (a) 1. or (b) 1., the owner or operator shall:

1. Measure the temperature of the air-perchloroethylene gas-vapor stream on the outlet side of the refrigerated condenser on a dry-to-dry machine, dryer, or reclaimer weekly with a temperature sensor to determine if it is equal to or less than 7.2°C (45°F). The temperature sensor shall be used according to the manufacturer's instructions and shall be designed to measure a temperature of 7.2°C (45°F) to an accuracy of $\pm 1.1^\circ\text{C}$ ($\pm 2^\circ\text{F}$).

2. Calculate the difference between the temperature of the air-perchloroethylene gas-vapor stream entering the refrigerated condenser on

a washer and the temperature of the air-perchloroethylene gas-vapor stream exiting the refrigerated condenser on the washer weekly to determine that the difference is greater than or equal to 11.1°C (20°F).

a. Measurements of the inlet and outlet streams shall be made with a temperature sensor. Each temperature sensor shall be used according to the manufacturer's instructions, and designed to measure at least a temperature range from 0°C (32°F) to 48.9°C (120°F) to an accuracy of $\pm 1.1^\circ\text{C}$ ($\pm 2^\circ\text{F}$).

b. The difference between the inlet and outlet temperatures shall be calculated weekly from the measured values.

(b) When a carbon adsorber is used to comply with sub. (3) (a) 2. or exhaust is passed through a carbon adsorber immediately upon machine door opening to comply with sub. (3) (b) 3., the owner or operator shall measure the concentration of perchloroethylene in the exhaust of the carbon adsorber weekly with a colorimetric detector tube, while the dry cleaning machine is venting to that carbon adsorber at the end of the last dry cleaning cycle prior to desorption of that carbon adsorber to determine that the perchloroethylene concentration in the exhaust is equal to or less than 100 parts per million by volume. The owner or operator shall:

1. Use a colorimetric detector tube designed to measure a concentration of 100 parts per million by volume of perchloroethylene in air to an accuracy of ± 25 parts per million by volume;

2. Use the colorimetric detector tube according to the manufacturer's instructions; and

3. Provide a sampling port for monitoring within the exhaust outlet of the carbon adsorber that is easily accessible and located at least 8 stack or duct diameters downstream from any flow disturbance such as a bend, expansion, contraction or outlet; that is downstream from no other inlet; and that is 2 stack or duct diameters upstream from any flow disturbance such as a bend, expansion, contraction, inlet or outlet.

(c) If the air-perchloroethylene gas-vapor stream is passed through a carbon adsorber prior to machine door opening to comply with sub. (3) (b) 3., the owner or operator of an affected facility shall measure the concentration of perchloroethylene in the dry cleaning machine drum at the end of the dry cleaning cycle weekly with a colorimetric detector tube to determine that the perchloroethylene concentration is equal to or less than 300 parts per million by volume. The owner or operator shall:

1. Use a colorimetric detector tube designed to measure a concentration of 300 parts per million by volume of perchloroethylene in air to an accuracy of ± 75 parts per million by volume;

2. Use the colorimetric detector tube according to the manufacturer's instructions; and

3. Conduct the weekly monitoring by inserting the colorimetric detector tube into the open space above the articles at the rear of the dry cleaning machine drum immediately upon opening the dry cleaning machine door.

(d) When calculating yearly perchloroethylene consumption for the purpose of demonstrating applicability according to sub. (1), the owner

or operator shall perform the following calculation on the first day of every month:

1. Sum the volume of all perchloroethylene purchases made in each of the previous 12 months, as recorded in the log described in sub. (5) (d) 1.

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

(e) The total sum calculated in par. (d) is the yearly perchloroethylene consumption at the facility.

(5) RECORDKEEPING AND REPORTING REQUIREMENTS. In addition to complying with s. NR 439.04 (1) and (2), the owner or operator of a dry cleaning facility shall meet the following requirements:

(b) Each owner or operator of a dry cleaning facility shall submit to the department by registered mail, on or before the 30th day following the compliance dates specified in sub. (1) (b) or (c), a notification of compliance status providing the following information and signed by a responsible official who shall certify its accuracy:

Note: If more than one compliance date under sub. (1) (b) or (c) applies to a facility, the notification of compliance status is due by 30 days after each of the applicable dates.

1. The name and address of the owner or operator;

2. The address representing the physical location of the dry cleaning facility;

3. A brief description of the type of each dry cleaning machine at the dry cleaning facility;

4. The yearly perchloroethylene solvent consumption limit based upon the yearly solvent consumption calculated according to sub. (4) (d);

Note: The owner or operator of each facility complies with subd. 4. by stating which of the annual perchloroethylene consumption volumes in sub. (1) (d), (e) or (g) 1. or 2. is applicable to the facility for any exemption or major source determination under sub. (1).

5. Whether or not facility is in compliance with each applicable requirement of sub. (3); and

6. A statement that all information contained in the notification is accurate and true.

(c) Each owner or operator of an area source dry cleaning facility that exceeds the solvent consumption limit reported in par. (b) shall submit to the department by registered mail, on or before the dates specified in sub. (1) (f) or (i), a notification of compliance status providing the following information and signed by a responsible official who shall certify its accuracy:

1. The new yearly perchloroethylene solvent consumption limit based upon the yearly solvent consumption calculated according to sub. (4) (d);

2. Whether or not the facility is in compliance with each applicable requirement of sub. (3); and

3. A statement that all information contained in the notification is accurate and true.

(d) Each owner or operator of a dry cleaning facility shall keep receipts of perchloroethylene purchases and a log of all the following information, and maintain such information on site for a period of 5 years and show it upon request to a representative of the department:

1. The volume of perchloroethylene purchased each month by the dry cleaning facility as recorded from perchloroethylene purchases. If no perchloroethylene is purchased during a given month then the owner or operator would enter zero gallons into the log.

2. The calculation and result of the yearly perchloroethylene consumption determined on the first day of each month as specified in sub. (4) (d).

3. The dates when the dry cleaning system components are inspected for perceptible leaks, as specified in sub. (3) (k) or (l), and the name or location of dry cleaning system components where perceptible leaks are detected.

4. The dates of repair and records of written or verbal orders for repair parts to demonstrate compliance with sub. (3) (m) and (n).

5. The date and temperature sensor monitoring results, as specified in sub. (4), if a refrigerated condenser is used to comply with sub. (3) (a) or (b).

6. The date and colorimetric detector tube monitoring results, as specified in sub. (4), if a carbon adsorber is used to comply with sub. (3) (a) 2. or (b) 3.

(e) Each owner or operator of a dry cleaning facility shall retain onsite a copy of the design specifications and the operating manuals for each dry cleaning system and each emission control device located at the dry cleaning facility.

History: Cr. Register, June, 1995, No. 474, eff. 7-1-95.