

## Chapter NR 423

## CONTROL OF ORGANIC COMPOUND EMISSIONS FROM SOLVENT CLEANING OPERATIONS

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**Note:** Corrections made under s. 13.93 (2m) (b) 6. and 7., Stats., Register, December, 1996, No. 492.

**NR 423.01 Applicability; purpose. (1) APPLICABILITY.** This chapter applies to all solvent cleaning operation air contaminant sources and to their owners and operators.

**(2) PURPOSE.** This chapter is adopted under ss. 285.11, 285.13 and 285.17, Stats., to categorize organic compound emissions from solvent cleaning operations into separate organic compound air contaminant source categories and to establish emission limitations for these categories of sources in order to protect air quality.

**History:** Cr Register, September, 1986, No. 369, eff. 10-1-86; am Register, February, 1990, No. 410, eff. 3-1-90.

**NR 423.02 Definitions.** The definitions contained in chs. NR 400, 419, 420 and 421 apply to the terms used in this chapter. In addition, the following definitions apply to the terms used in this chapter:

**(2) "Cartridge filter"** means a perforated canister containing filtration paper or activated carbon, or both, that is used to remove solid particles and fugitive dyes from soil-laden solvent.

**(5) "Dry cleaning facility"** means any facility engaged in the cleaning of fabrics or leather in an essentially nonaqueous solvent by means of one or more washes in solvent, extraction of excess solvent by spinning, and drying by tumbling in an airstream. The facility includes but is not limited to any washer, dryer, filter and purification systems, waste disposal systems, holding tanks, pumps, and attendant piping and valves.

**(6) "Freeboard height"** means, for a cold cleaner, the distance from the liquid solvent level in the degreaser tank to the lip of the tank. For a vapor degreaser it means the distance from the top of the vapor zone to the lip of the degreaser tank.

**(7) "Freeboard ratio"** means the freeboard height divided by the internal width of the degreaser tank.

**(9) "Refrigerated freeboard chiller"** means an emission control device which is mounted above the water jacket or primary condenser coils of a vapor degreaser and which consists of secondary coils carrying a refrigerant to provide a chilled air blanket above the solvent vapor.

**(10) "Solvent metal cleaning"** means the process of cleaning soils from metal surfaces by cold cleaning, open top vapor degreasing, conveyORIZED degreasing or wipe cleaning.

**(11) "Solvent recovery dryer"** means a dry cleaning dryer that employs a condenser to liquefy and recover solvent vapors evaporated in a closed-loop, recirculating stream of heated air.

**(12) "Wipe cleaning"** means the cleaning and removing of soils from the metal surfaces of a product or product component by manually wiping the surfaces with solvent using a porous applicator while maintaining the solvent below its boiling point.

**History:** Renum. from NR 154.01, Register, September, 1986, No. 369, eff. 10-1-86; cr (3m), am (4), Register, January, 1987, No. 385, eff. 2-1-88; renum (9) and (10) to be (10) and (11) and am. (10), cr. (9) and (12), Register, August, 1994, No. 464, eff. 9-1-94; am. (intro.), Register, December, 1995, No. 480, eff. 1-1-96; renum. (3), (3m), (4) and (8) to be s. NR 400.02 (22v), (26o), (26q) and (60s).

**NR 423.03 Solvent metal cleaning. (1) APPLICABILITY.** Except as provided in sub. (8), this section applies, with a final

compliance deadline of May 1, 1980, or as provided by a compliance schedule issued or approved pursuant to s. NR 425.03 (5), to cold cleaning, open top vapor degreasing and conveyORIZED vapor degreasing operations. This section also applies, with a final compliance deadline of May 1, 1988, except as provided in sub. (8), to conveyORIZED non-vapor degreasing operations and, under the compliance provisions of sub. (8) (c), to wipe cleaning operations.

**Note:** Owners and operators of solvent cleaning operations should refer to sub. (2)(h) and (i) and ch. NR 469.

**(2) EXEMPTIONS.** The owner or operator of any facility located in Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington or Waukesha county and which claims to be exempt under this subsection from any requirement of subs. (3) to (7) shall comply with the recordkeeping requirements of sub. (10). The following exemptions apply to the source categories indicated:

(a) This section does not apply to individual cold cleaners to which not more than 5.7 liters (1.5 gallons) of solvent is added per day, or to individual open top vapor, conveyORIZED vapor or conveyORIZED non-vapor degreasers whose emissions of VOCs are not more than 6.8 kilograms (15 pounds) in any one day provided the following conditions are met:

1. The degreaser is located outside the counties of Brown, Calumet, Dane, Dodge, Door, Fond du Lac, Jefferson, Kenosha, Kewaunee, Manitowoc, Milwaukee, Outagamie, Ozaukee, Racine, Rock, Sheboygan, Walworth, Washington, Waukesha and Winnebago.

2. The emission rates from open top vapor and conveyORIZED vapor degreasers are determined and certified before October 1, 1979 in a manner approved by the department, and the emission rates from conveyORIZED non-vapor degreasers are determined and certified before May 1, 1988 in a manner approved by the department.

(b) This section also does not apply to sources used exclusively for chemical or physical analysis or determination of product quality and commercial acceptance where all of the following conditions are met:

1. The operation of the source is not an integral part of the production process.

2. The emissions from the source do not exceed 363 kilograms (800 pounds) in any calendar month.

3. The exemption is approved in writing by the department.

(c) An individual cold cleaner which is:

1. Located outside of Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha counties and which has an open area smaller than 0.10 square meter (1.1 square feet) is exempt from the requirements of sub. (3) (b) to (g).

2. Located outside of Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha counties is exempt from the requirements of sub. (3) (h), (i) and (j).

3. Located inside Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington or Waukesha

county and which has an open area smaller than 0.10 square meter (1.1 square feet), and to which not more than 5.7 liters (1.5 gallons) of solvent is added per day, is exempt from the requirements of sub. (3) (b) to (j).

(d) An individual open top vapor degreaser which is:

1. Located outside of Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha counties and which has an open area smaller than 1.0 square meter (10.8 square feet) is exempt from the requirements of sub. (4) (c).

2. Located outside of Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha counties is exempt from the requirements of sub. (4) (n) to (q).

3. Located inside Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington or Waukesha county and which has an open area smaller than 1.0 square meter (10.8 square feet), and whose emissions of VOCs are not more than 6.8 kilograms (15 pounds) in any one day, is exempt from the requirements of sub. (4) (c), (n), (o) and (p).

(e) An individual conveyORIZED vapor degreaser which is:

1. Located outside of Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha counties and which has an open area smaller than 2.0 square meters (21.6 square feet) is exempt from the requirements of sub. (5) (c).

2. Located outside of Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha counties is exempt from the requirements of sub. (5) (h), (i) and (j).

3. Located inside Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington or Waukesha county and which has an open area smaller than 2.0 square meters (21.6 square feet), and whose emissions of VOCs are not more than 6.8 kilograms (15 pounds) in any one day, is exempt from the requirements of sub. (5) (c).

(f) An individual conveyORIZED non-vapor degreaser which is:

1. Located outside of Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha counties and which has a total horizontal solvent-air interface smaller than 2.0 square meters (21.6 square feet), where such an interface exists, is exempt from the requirements of sub. (6) (a) 2.

2. Located outside of Brown, Calumet, Dane, Dodge, Door, Fond du Lac, Jefferson, Kenosha, Kewaunee, Manitowoc, Milwaukee, Outagamie, Ozaukee, Racine, Rock, Sheboygan, Walworth, Washington, Waukesha and Winnebago counties is exempt from sub. (6) (a) 2.

3. Located outside of Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha counties is exempt from the requirements of sub. (6) (a) 8. and 9.

4. Located inside Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington or Waukesha county and which has an open area smaller than 2.0 square meters (21.6 square feet), and whose emissions of VOCs are not more than 6.8 kilograms (15 pounds) in any one day, is exempt from the requirements of sub. (6) (a) 2.

(g) An individual wipe cleaning operation which is:

1. Located outside of Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha counties is exempt from the requirements of this section.

2. Located inside Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington or Waukesha county and whose emissions of VOCs are not more than 6.8 kilograms (15 pounds) in any one day is exempt from the requirements of sub. (7) (d).

(h) This section does not apply to solvent metal cleaning operations using only cleaning solvents that have a VOC content of 2.0% or less by volume.

(i) This section does not apply to any individual cold cleaning, batch vapor degreasing or conveyORIZED degreasing operation that is subject to ch. NR 469.

**(3) COLD CLEANERS.** Except as provided under sub. (2) (a), (b), (c), (h) and (i), the owner or operator of a cold cleaning facility shall do all of the following:

(a) Equip the cleaner with a cover.

(b) Design the cover so that it can be easily operated with one hand if any of the following applies:

1. The solvent volatility is greater than 2 kPa (0.3 psia) measured at 38°C (100°F).

2. The solvent is agitated.

3. The solvent is heated.

(c) Equip the cleaner with a facility for draining cleaned parts, and the drainage facility shall be constructed internally so that parts are enclosed under the cover while draining if the solvent volatility is greater than 4.3 kPa (0.6 psia) measured at 38°C (100°F), except that the drainage facility may be external for applications where an internal type cannot fit into the cleaning system.

(d) Install one of the following control devices if the solvent volatility is greater than 4.3 kPa (0.6 psia) measured at 38°C (100°F), or if the solvent is heated above 49°C (120°F):

1. Freeboard that gives a freeboard ratio greater than or equal to 0.70.

2. Water cover (solvent must be insoluble in and heavier than water).

3. Other systems of equivalent control, such as refrigerated chiller or carbon adsorption, approved by the department.

(e) If used, supply a solvent spray that is a solid fluid stream (not a fine, atomized or shower type spray) at a pressure which does not cause extensive splashing.

(f) Provide a permanent, conspicuous label, summarizing the operating requirements.

(g) Provide supervision or instruction adequate to ensure that the operation is conducted in accord with all of the following:

1. Close the cover whenever parts are not being handled in the cleaner.

2. Drain the cleaned parts for at least 15 seconds or until dripping ceases.

3. Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another person in such a way as to cause greater than 15% of the waste solvent, by weight, to evaporate into the ambient air during the ozone season, s. NR 419.04 notwithstanding.

4. Repair solvent leaks immediately, or shut down the degreaser until the leaks are repaired.

(h) Design the cover so that it is either a roll-top cover, a canvas curtain cover, a guillotine (biparting) cover, or any other type of cover that slides off the degreaser in a horizontal motion and is designed such that it can be opened or closed without disturbing the vapor layer or the solvent surface if any of the following applies:

1. The solvent volatility is greater than 2 kPa (0.3 psia) measured at 38°C (100°F).

2. The solvent is agitated.

3. The solvent is heated.

(i) If freeboard is chosen as a control device under par. (d), design or modify the freeboard to give a freeboard ratio greater than or equal to 1.0.

(j) If a system of equivalent control is chosen under par. (d) 3., the level of control shall be equivalent to that achieved under a freeboard ratio of 1.0.

**(4) OPEN TOP VAPOR DEGREASERS** Except as provided under sub. (2) (a), (b), (d), (h) and (i), the owner or operator of an open top vapor degreaser shall do all of the following:

(a) Equip the vapor degreaser with a cover that can be opened and closed easily without disturbing the vapor zone.

(b) Provide the following safety switches:

1. A condenser flow switch or other switching system which shuts off the sump heat if the condenser coolant is either not circulating or too warm.

2. A thermostatically activated control switch which shuts off the sump heat when the vapor level rises above the upper boundary of the normal range.

3. A spray safety switch which shuts off the spray pump if the vapor level does not stay within the normal range.

(c) Install and use one of the following control devices:

1. Except when par. (o) applies, a freeboard ratio equal to or greater than 0.75 for all degreasers, with a powered or mechanically assisted cover for any degreaser with an opening which is greater than 1.0 square meter (10.8 square feet).

2. Refrigerated freeboard chiller.

3. Enclosed design (cover or door opens only when the dry part is actually entering or exiting the degreaser).

4. Ventilation greater than or equal to 15 cubic meters per minute per square meter (50 cubic feet per minute per square foot) of air-vapor area (when cover is open), all passing through a carbon adsorption system which exhausts less than 25 parts per million of solvent averaged over one complete adsorption cycle.

5. A control system demonstrated to have control efficiency equivalent to or greater than any of subs. 1. to 4. and approved by the department.

(d) Position any ventilation fans so that they do not disturb the degreaser's vapor zone, and limit exhaust ventilation to 20 cubic meters per minute per square meter (65 cubic feet per minute per square foot) of degreaser open area during the ozone season, unless a higher exhaust rate is necessary to meet OSHA requirements.

(e) Keep the cover closed at all times except when processing workloads through the degreaser.

(f) Always spray below the vapor level.

(g) Minimize solvent carryout by doing all of the following:

1. Racking parts to allow complete drainage.

2. Moving parts in and out of the degreaser at less than 3.3 meters per minute (11 feet per minute).

3. Holding the parts in the vapor zone at least 30 seconds or until condensation ceases.

4. Tipping out any pools of solvent on the cleaned parts before removal from the vapor zone.

5. Allowing parts to dry within the degreaser for at least 15 seconds or until visually dry.

(h) Prevent porous or absorbent materials, such as cloth, leather, wood or rope, from entering the degreaser.

(i) Move parts in and out of the degreaser at less than 1.5 meters per minute (4.9 feet per minute) if the workload occupies more than 50% of the degreaser's open top area.

(j) Except where a load cannot be divided, avoid loading the degreaser to the point where the vapor level would drop more than 10 centimeters (4 inches) when the workload is placed in the vapor zone.

(k) Operate the degreaser in a manner that prevents water from being visually detectable in solvent exiting the water separator.

(L) Follow the requirements of sub. (3) (g) 3. and 4.

(m) Provide a permanent, conspicuous label, summarizing the operating procedures of pars. (e) to (i), and (q) if applicable, and provide supervision or instruction adequate to ensure that the procedures are followed.

(n) Equip the vapor degreaser with an enclosed design, such that the cover or door opens only when the dry part is actually entering or exiting the degreaser, that is either a roll-top cover, a canvas curtain cover, a guillotine (biparting) cover, or any other type of cover that slides off the degreaser in a horizontal motion and is designed such that it can be opened or closed without disturbing the vapor layer or the solvent surface, and if the degreaser opening is greater than 2.0 square meters (21.6 square feet), then design the cover to be an automated, powered or mechanically assisted sliding cover.

(o) Under par. (c), if par. (c) 1. is chosen, design or modify the freeboard to give a freeboard ratio equal to or greater than 1.0.

(p) If a system of equivalent control is chosen under par. (c) 5., the level of control shall be equivalent to that achieved under a freeboard ratio of 1.0.

(q) At startup, turn on the refrigerated condenser and the refrigerated freeboard chiller either simultaneously with or before turning on the sump heater. At shutdown, turn off the sump heater either simultaneously with or before turning off the refrigerated condenser and refrigerated freeboard chiller.

**(5) CONVEYORIZED VAPOR DEGREASERS** Except as provided under sub. (2) (a), (b), (e), (h) and (i), the owner or operator of a conveyORIZED vapor degreaser shall do all of the following:

(a) Minimize entrance and exit openings during operation so that no opening dimension exceeds the smallest physically possible by more than 20 centimeters (8 inches) or by more than 20% of the opening dimension, whichever is smaller.

(b) Provide the following safety switches:

1. A condenser flow switch or other switching system which shuts off the sump heat if the condenser coolant is either not circulating or too warm.

2. A thermostatically activated control switch which shuts off the sump heat when the vapor level rises above the upper boundary of the normal range.

3. A spray safety switch which shuts off the spray pump or the conveyor if the vapor level does not stay within the normal range.

(c) Install and use one of the following control devices:

1. Refrigerated freeboard chiller.

2. Carbon adsorption system, with ventilation greater than or equal to 15 cubic meters per minute per square meter (50 cubic feet per minute per square foot) of air-vapor area (when downtime covers are open), and exhausting less than 25 parts per million of solvent by volume averaged over a complete adsorption cycle.

3. A system demonstrated to have a control efficiency equivalent to or greater than subd. 1. or 2. and approved by the department.

(d) Provide downtime covers for closing off the entrance and exit during shutdown hours.

(e) Place downtime covers over entrances and exits of conveyORIZED vapor degreasers immediately after the conveyors and exhausts are shut down and not remove them until just before startup.

(f) Minimize carryout emissions by doing all of the following:

1. Using a drying tunnel, rotating (tumbling) basket or their equivalent.

2. Racking parts for best drainage.

3. Maintaining the vertical conveyor speed at less than 3.3 meters per minute (11 feet per minute).

(g) Follow the requirements of subs. (3) (g) 3. and 4. and (4) (d) and (k).

(h) Minimize entrance and exit openings during operation so that no opening dimension exceeds the smallest physically possible.

sible by more than 10 centimeters (4 inches) or by more than 10% of the opening dimension, whichever is smaller.

(i) At startup, turn on the refrigerated condenser and the refrigerated freeboard chiller either simultaneously with or before turning on the sump heater. At shutdown, turn off the sump heater either simultaneously with or before turning off the refrigerated condenser and refrigerated freeboard chiller.

(j) Provide a permanent, conspicuous label summarizing the operating procedures of pars. (e) to (i), and provide supervision or instruction adequate to ensure that the procedures are followed.

**(6) CONVEYORIZED NON-VAPOR DEGREASERS.** (a) *Control requirements.* Except as provided under sub. (2) (a), (b), (f), (h) and (i), the owner or operator of a conveyORIZED non-vapor degreaser shall do all of the following:

1. Minimize entrance and exit openings during operation so that no opening dimension exceeds the smallest physically possible by more than 20 centimeters (8 inches) or by more than 20% of the opening dimension, whichever is smaller.

2. Install and operate one of the following control systems:

a. A carbon adsorption system demonstrated to have at least a 95% control efficiency, as measured across the carbon adsorption equipment and averaged over a complete adsorption cycle.

b. A system, demonstrated to have a control efficiency equivalent to or greater than that described in subd. 2. a., and approved by the department.

3. Provide downtime covers for closing off the entrance and exit during shutdown hours.

4. Place downtime covers over the entrances and exits of conveyORIZED non-vapor degreasers immediately after the conveyors and exhausts are shut down and not remove them until just before startup.

5. Minimize carryout emissions by:

a. Use of rollers to remove excess solvent in strip cleaning operations.

b. Arranging parts for best drainage in mesh belt cleaning operations and other conveyORIZED non-vapor degreasing operations.

6. Store waste solvent in covered containers and not dispose of waste solvents or transfer it to another person in such a way as to cause greater than 15% of the waste solvent, by weight, to evaporate into the ambient air during the ozone season.

7. Repair solvent leaks immediately, or shut down the degreaser and drain it of all solvent until the leaks are repaired.

8. Minimize entrance and exit openings during operation so that no opening dimension exceeds the smallest physically possible by more than 10 centimeters (4 inches) or by more than 10% of the opening dimension, whichever is smaller.

9. Provide a permanent, conspicuous label, summarizing the operating procedures of subs. 4. to 7., and provide supervision or instruction adequate to ensure that the procedures are followed.

(b) *Compliance schedule.* The owner or operator of a conveyORIZED non-vapor degreaser subject to the control requirements of par. (a) 2. shall achieve final compliance on or before May 1, 1988.

**(7) WIPE CLEANING.** Except as provided under sub. (2) (b), (g) and (h), the owner or operator of a wipe cleaning operation shall do all of the following:

(a) Immediately after use, place all rags, or any other porous materials used to apply solvent, in a covered container that is labeled as waste solvent, and handled in accordance with local, state and federal regulations.

(b) Store waste solvent only in covered containers labeled as waste solvent and handled in accordance with local, state and federal regulations.

(c) Follow operating procedures which prevent solvent from dripping from the applicator during solvent application.

(d) Install and operate one of the following emission control systems:

1. A vapor collection system that includes a carbon adsorption system demonstrated to have at least a 90% capture efficiency, and a 90% control efficiency as measured across the carbon adsorption equipment and averaged over a complete adsorption cycle.

2. Use of a solvent with a volatility of less than 2 kPa (0.3 psia) measured at 38°C (100°F).

3. A system demonstrated to have a control efficiency equivalent to or greater than that described in subd. 1. or 2. and approved by the department.

(e) Provide a permanent, conspicuous label, summarizing the operating procedures of pars. (a) to (c), and provide supervision or instruction adequate to ensure that the procedures of pars. (a) to (c) are followed.

**(8) COMPLIANCE SCHEDULE.** This subsection applies only to facilities located in Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha counties.

(a) *Previously regulated operations.* 1. This paragraph applies only to a facility which is in existence on September 1, 1994 and which:

a. Prior to September 1, 1994 was subject to all requirements of sub. (3), (4), (5) or (6).

b. Is subject to sub. (3) (h), (i) or (j), (4) (n) to (q), (5) (h), (i) or (j), or (6) (a) 8. or 9. as of September 1, 1994.

2. The owner or operator of any source identified under subd. 1. shall:

a. Remain in compliance with all requirements of sub. (3), (4), (5) or (6) to which the owner or operator was subject prior to September 1, 1994.

b. Achieve final compliance with the requirements of sub. (3) (h), (i) or (j), (4) (n) to (q), (5) (h), (i) or (j), or (6) (a) 8. or 9. as soon as practicable, but no later than May 15, 1995.

(b) *Previously exempt operations.* 1. This paragraph applies only to a facility which is in existence on September 1, 1994 and which is subject to requirements under sub. (3) (b) to (g), (4) (c), (5) (c) or (6) (a) 2. as of September 1, 1994 and which prior to September 1, 1994 was exempt from the requirements of sub. (3) (b) to (g) under sub. (2) (c), from the requirements of sub. (4) (c) under sub. (2) (d), from the requirements of sub. (5) (c) under sub. (2) (e), or from the requirements of sub. (6) (a) 2. under sub. (2) (f).

2. The owner or operator of any source identified under subd. 1. shall achieve final compliance with the applicable requirements as soon as practicable, but no later than September 15, 1995.

(c) *Wipe cleaning operations.* 1. This paragraph applies only to a facility which is in existence on September 1, 1994 and which is subject to the requirements of sub. (7) as of September 1, 1994.

2. The owner or operator of any source identified under subd. 1. shall achieve final compliance with the requirements of sub. (7) as soon as practicable, but no later than May 15, 1996.

**(9) EQUIVALENT CONTROL.** Any equivalent control system approved by the department under sub. (3) (d) 3. or (j), (4) (c) 5. or (p), (5) (c) 3., (6) (a) 2. b. or (7) (d) 3. shall be submitted to, and will not become effective for federal purposes until approved by, the administrator as a source-specific revision to the department's state implementation plan for ozone.

**(10) RECORDKEEPING.** This subsection applies only to facilities located in Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington or Waukesha county. As of September 1, 1994, each owner or operator of a degreasing operation that is exempt from the requirements of subs. (3) to (7), under sub. (2) (c) to (g), shall collect and record the information specified in this paragraph, as appropriate to support the exemption. The following information shall be maintained on the facility

premises for a minimum of 3 years and shall be made available upon request to an authorized department representative at any time during normal working hours:

- (a) A unique name or identification number for each degreaser or wipe cleaning operation.
- (b) The volume of solvent used or added per day for each individual degreaser or wipe cleaning operation, in units of gallons.
- (c) The VOC emissions, in units of pounds or kilograms per day, from each individual degreaser or wipe cleaning operation.
- (d) The density of the solvent used, in units of pounds per gallon.
- (e) The VOC content of the solvent, expressed as percent by volume.

**History:** Renum. from NR 154.13 (6) (a) and am. Register, September, 1986, No. 369, eff. 10-1-86; am. (1), (2) (a) (intro.), 2 and (e), (5) (intro.) and (e), cr. (2) (f) and (6), Register, January, 1988, No. 385, eff. 2-1-88; am. (2) (a) (intro.) and (c) and (3) (d) 1., Register, February, 1990, No. 410, eff. 3-1-90; am. (2) (a) 1. and (f), a. (7), Register, December, 1993, No. 456, eff. 1-1-94; am. (1), (2) (a) (intro.), (3) (a) (intro.) and (g) 4., (4) (intro.), (c) 2., (i) and (m), (5) (intro.), (c) 1. and (g), (6) (a) (intro.) and 7., renum. (7) to be (9) and am., cr. (2) (intro.), (g), (h), (3) (h) to (j), (4) (n) to (q), (5) (h) to (j), (6) (a) 8. and 9., (7), (8) and (10), r. and recr. (2) (c) to (f), Register, August, 1994, No. 464, eff. 9-1-94; am. (4) (a) (intro.) and (m), (5) (intro.), (6) (a) (intro.) and (b) (intro.) and (9), r. (6) (b) 1. to 5., Register, December, 1995, No. 480, eff. 1-1-96; am. (1), (2) (intro.), (a) (intro.), (b) (intro.), (3) (intro.), (b) (intro.), (g) (intro.), (h) (intro.), (4) (g) (intro.), (5) (f) (intro.), (6) (a) (intro.), (7) (intro.), (8) (b) 1. (intro.), r. (8) (b) 1. a. to d., Register, December, 1996, No. 492, eff. 1-1-97; cr. (2) (i) and am. (3) (intro.), (4) (intro.), (5) (intro.) and (6) (a) (intro.), Register, March, 1997, No. 495, eff. 4-1-97; am. (2) (g) 2., (4) (c) (intro.), 1., (d), (h), (k), (5) (c) (intro.) and (7) (c), Register, October, 1999, No. 526, eff. 11-1-99.

#### NR 423.04 Perchloroethylene dry cleaning.

**(1) APPLICABILITY.** This section applies, subject to the provisions of s. NR 425.03, to all dry cleaning facilities in which perchloroethylene solvent is used.

**(2) EXEMPTIONS.** The requirements of sub. (3) (a) do not apply to perchloroethylene dry cleaning facilities which provide satisfactory documentation to the department showing that an adsorber cannot be accommodated because of inadequate space or because insufficient steam capacity is available to desorb adsorbers. Any exemption determination made by the department under this subsection shall be submitted to, and will not become effective for federal purposes until approved by, the administrator or designee as a source-specific revision to the department's state implementation plan for ozone.

**(3) REQUIREMENTS.** Except as provided under sub. (2), the owner or operator of a perchloroethylene dry cleaning facility shall do all of the following:

- (a) Vent the entire dryer exhaust through one of the following:
  1. A carbon adsorption system which may emit no more than 100 ppm of VOC, before dilution.
  2. An emission control system complying with s. NR 468.20 (3), provided that any carbon adsorption system used under s. NR 468.20 (3) is operated in accordance with subd. 1.
  3. An alternative VOC emission control system demonstrated to achieve an equivalent VOC emission reduction as approved by the department.
- (b) Maintain the facility so as to prevent leakage of organic solvent from any components in the system and repair any leaks immediately.
- (c) Cook or treat all diatomaceous earth filters so that the residue contains 25 kilograms or less of VOCs per 100 kilograms of wet waste material.
- (d) Reduce the VOC content of all solvent still waste to 60 kilograms or less per 100 kilograms of wet waste material.
- (e) Drain all filtration cartridges, in the filter housing or other sealed container, for at least 24 hours before discarding the cartridges.
- (f) If transferring cartridges to another sealed container, make such transfer without permitting any solvent to be spilled.

(g) When possible, dry all drained cartridges without emitting VOCs to the atmosphere.

**History:** Renum. from NR 154.13 (6) (b) and am. Register, September, 1986, No. 369, eff. 10-1-86; am. (2), Register, December, 1993, No. 456, eff. 1-1-94; am. (3) (a) 1., renum. (3) (a) 2. to be (3) (a) 3., cr. (3) (a) 2., Register, June, 1995, No. 474, eff. 7-1-95; am. (3) (intro.), (a) (intro.), Register, December, 1996, No. 492, eff. 1-1-97.

#### NR 423.05 Petroleum liquid solvent dry cleaning.

**(1) APPLICABILITY.** This section applies, subject to the provisions of s. NR 425.03, to petroleum liquid solvent washers, dryers, solvent filters, settling tanks, vacuum stills, piping, ductwork, pumps, storage tanks, and other containers and conveyors of petroleum liquid solvent that are used in a petroleum liquid solvent dry cleaning facility which has maximum theoretical emissions of VOCs from the facility greater than or equal to one of the following:

(a) 25 tons per year for a facility which is located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Washington or Waukesha.

(b) 100 tons per year for a facility which is located in the county of Door, Kewaunee, Manitowoc, Sheboygan or Walworth.

**(2) REQUIREMENTS.** (a) The owner or operator of a petroleum liquid solvent dry cleaning facility shall limit VOC emissions from each petroleum liquid solvent dry cleaning dryer to an average of 3.5 kilograms per 100 kilograms, dry weight, of articles cleaned, or install and operate a solvent recovery dryer in a manner such that the dryer remains closed and the recovery phase continues until the flow rate of recovered solvent no longer exceeds 50 milliliters per minute.

(b) The owner or operator of a petroleum liquid solvent dry cleaning facility shall reduce the VOC content of all filtration wastes to not more than 1.0 kilogram per 100 kilograms, dry weight, of articles cleaned before disposing of such wastes or exposing them to the atmosphere, or install and operate a cartridge filtration system, and drain the filter cartridges in their sealed housings for at least 8 hours before removing them.

(c) The owner or operator of a petroleum liquid solvent dry cleaning facility shall repair all solvent vapor and liquid leaks within 3 working days of their discovery. If necessary repair parts are not on hand, the owner or operator shall order them within 3 working days following discovery of solvent vapor or liquid leaks and repair the leaks within 3 working days following receipt of the parts.

**(3) COMPLIANCE SCHEDULES.** (a) This subsection applies only to a petroleum liquid dry cleaning facility in existence on January 1, 1994 and which meets one of the following criteria:

1. The facility is located in the county of Door, Kewaunee, Manitowoc, Sheboygan or Walworth.

2. The facility is located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Washington or Waukesha and was not subject to this section prior to January 1, 1994.

(b) The owner or operator of any source identified under par. (a) shall:

1. Notify the department's bureau of air management in writing by April 1, 1994. This notification shall provide the name and location of the affected facility and include VOC emission data if necessary to support eligibility under this subsection.

2. Achieve final compliance with the requirements of this section no later than May 31, 1995.

**Note:** "Maximum theoretical emissions" has the meaning given in s. NR 419.02 (11).

**History:** Renum. from NR 154.13 (6) (c) and am. Register, September, 1986, No. 369, eff. 10-1-86; am. (1), Register, February, 1990, No. 410, eff. 3-1-90; renum. (1) to be (1) (intro.) and am., cr. (1) (a) and (b) and (3), Register, December, 1993, No. 456, eff. 1-1-94; am. (1), (2), (3) (a), Register, December, 1996, No. 492, eff. 1-1-97.