

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:

(1g) “Aerosol product” means solvent or solvent solution expelled by a propellant from a hand-held non-refillable pressurized container.

(1r) “Blanket or roller wash” has the meaning given it in s. NR 422.02 (12).

(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.

(5g) “Electrical apparatus component” means an internal component such as wires, windings, stators, rotors, magnets, contacts, relays, energizers and connections in an apparatus that generates or transmits electrical energy including, but not limited to: alternators, generators, transformers, electric motors, cables and circuit breakers, except for the actual cabinet in which the components are housed. Electrical components of all rotogravure, letterpress, flexographic and lithographic application equipment and hot-line tools are also included in this category.

(5m) “Flexible magnetic data storage disc” means a flat, circular plastic film, contained in a non-rigid envelope, with a magnetic coating on which digital information can be stored by selective magnetization of portions of the flat surface.

(5r) “Flexographic printing” has the meaning given it in s. NR 422.02 (35).

(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.

(7m) “Hot-line tool” means a specialized tool used primarily on the transmission systems, sub-transmission systems and distribution systems for replacing and repairing circuit components or for other types of work with electrically energized circuits.

(8c) “Letterpress printing” means the method in which the image area is raised relative to the non-image area and the ink is transferred directly from the ink roller to the plate cylinder.

(8g) “Lithographic printing” has the meaning given it in s. NR 422.02 (48).

(8p) “Medical device” means an instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent or other similar article, including any component or accessory that meets any one of the following conditions:

(a) It is intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment or prevention of disease.

(b) It is intended to affect the structure or function of the body.

(c) It is defined as a “device” under 21 USC 321.

Note: Common examples of such medical devices include but are not limited to x-ray machines, medical lasers, diagnostic ultrasound products, thermometers, bedpans, artificial hearts, pacemakers, pregnancy test kits, scalpels, tongue depressors and bandages.

(8x) “On-press component” means a part, component or accessory of a press that is cleaned while still being physically attached to the press. Rollers, blankets, metering rollers, fountains, impression cylinders and plates are considered on-press components even when detached from the press.

(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.

(9g) “Removable press component” means a part, component or accessory of a press, excluding rollers, blankets, metering rollers, fountains, impression cylinders and plates, that is physically attached to the press but is disassembled and removed from the press prior to being cleaned.

(9t) “Rigid magnetic data storage disc” means a flat, circular, non-flexible plate with a magnetic coating on which digital information can be stored by selective magnetization of portions of the flat surface.

(9w) “Rotogravure printing” has the meaning given it in s. NR 422.02 (80).

(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.

(10g) “Screen printing” has the meaning given it in s. NR 422.02 (82).

(10r) “Surface preparation” means the removal of contaminants such as dust, soil, oil, etc., prior to coating, adhesive or ink applications.

(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.

(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), (3) (intro.) and (e), er (2) (f) and (6), Register, January, 1988, No. 385, eff. 2-1-88; am (2) (a) (intro.) and (e) 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.), (e) 2., (i) and (m), (5) (intro.), (e) 1 and (g), (6) (a) (intro.) and 7., renum (7) to be (9) and am, er (2) (intro.), (g), (h), (3) (h) to (j), (4) (h) to (q), (5) (h) to (j), (6) (a) 8 and 9., (7), (8) and (10), r and reer (2) (e) 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; er (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) (e) (intro.), 1., (d), (h), (k), (5) (e) (intro.) and (7) (e), Register, October, 1999, No. 526, eff. 11-1-99.

NR 423.035 Industrial cleaning operations — part 1.

(1) APPLICABILITY (a) Except as provided in subs. (2) and (9) (a), this section applies to industrial cleaning operations at facilities that are located in Kenosha, Milwaukee, Ozaukee, Racine, Washington, or Waukesha county and have maximum theoretical emissions of VOCs from the facility, excluding any maximum theoretical emissions of VOCs resulting from combustion, or VOCs specifically subject to s. NR 419.05, 419.06, or 419.08, ch. NR 420, 421, or 422, or s. NR 423.03, 423.05, 424.04, or 424.05, of 25 tons per year or more.

Note: To determine the maximum theoretical emissions of VOCs from a facility, excluding any maximum theoretical emissions of VOCs specifically subject to the cited provisions, use the following procedure:

1. Calculate the maximum theoretical emissions of VOCs from the facility excluding emissions from combustion.
2. Calculate the maximum theoretical emissions of VOCs from the facility subject to s. NR 419.05, 419.06, or 419.08, ch. NR 420, 421 or 422, or s. NR 423.03, 423.05, 424.04, or 424.05.
3. Subtract the emissions calculated in step 2 from the emissions calculated in step 1.
4. If the quantity calculated in step 3 is less than 25 tons per year, then the only requirements of this section that apply to the facility are the recordkeeping requirements of sub. (9) (a).

(b) Except as provided in subs. (2) and (9) (a), this section applies to industrial cleaning operations at facilities that are located in Kewaunee, Manitowoc, or Sheboygan county and have maximum theoretical emissions of VOCs from the facility, excluding any maximum theoretical emissions of VOCs resulting from combustion, or VOCs specifically subject to s. NR 419.05, 419.06, or 419.08, ch. NR 420, 421, or 422, or s. NR 423.03, 423.05, 424.04, or 424.05, of 100 tons per year or more.

Note: To determine the maximum theoretical emissions of VOCs from a facility, excluding any maximum theoretical emissions of VOCs specifically subject to the cited provisions, use the following procedure:

1. Calculate the maximum theoretical emissions of VOCs from the facility excluding emissions from combustion.
2. Calculate the maximum theoretical emissions of VOCs from the facility subject to s. NR 419.05, 419.06, or 419.08, ch. NR 420, 421 or 422, or s. NR 423.03, 423.05, 424.04, or 424.05.
3. Subtract the emissions calculated in step 2 from the emissions calculated in step 1.

4. If the quantity calculated in step 3 is less than 100 tons per year, then the only requirements of this section that apply to the facility are the recordkeeping requirements of sub. (9) (a).

(2) EXEMPTIONS If an exemption in this subsection is based on an exemption threshold and that threshold is exceeded, the exemption will no longer apply to the facility. The following exemptions are applicable to various provisions of this section:

(a) This section does not apply to:

1. Operations regulated under s. NR 421.05 (2m), 421.06 (2m), 422.05 (3), 422.06 (3), 422.075 (3), 422.08 (3), 422.083 (3m), 422.09 (6), 422.095 (7), 422.105 (5), 422.115 (5), 422.125 (4m), 422.127 (3m), 422.131 (3), 422.14 (4), 422.141 (3), 422.142 (2) (c), 422.143 (3) (c) and (4), 422.144 (4) (b) and (5), 422.145 (2m), 422.15 (9), 422.155 (5), or 423.03.

2. Stripping of cured coatings, cured inks or cured adhesives.

3. Cleaning operations in graphic arts pre-press areas including the cleaning of film processors, color scanners or plate processors, or film cleaning and plate cleaning.

(b) Subsection (3) does not apply to any of the following activities or facilities:

1. Cleaning conducted in conjunction with performance laboratory tests on coatings, adhesives or inks; research and development programs; and laboratory tests in quality assurance laboratories.

2. Cleaning of electrostatic printing and coating application equipment.

3. Medical device and pharmaceutical manufacturing facilities using less than a total of 1.5 gallons per day of VOC-containing solvents and solvent solutions for industrial cleaning operations.

4. Facilities whose aggregate use of solvent and solvent solutions which do not comply with the applicable VOC content limits in sub. (3) and of any coatings and inks exempt under s. NR 422.03 (7) does not exceed 55 gallons during any 12 consecutive months at the facility.

(c) Subsections (3) and (7) do not apply to cleaning with aerosol product if 160 fluid ounces or less of VOC-containing aerosol product are used per day for industrial cleaning operations, per facility.

(d) Subsection (7) does not apply to cleaning with solvents or solvent solutions in spray bottles or containers described in sub. (4) (b).

(e) Subsection (7) does not apply to the cleaning of the nozzle tips of automated spray equipment systems, except for robotic systems that are programmed to spray into a closed container.

(f) Subsection (7) does not apply to automatically applied blanket or roller wash.

(g) Subsections (4) to (8) do not apply to cleaning which uses solvents or solvent solutions containing no more than 0.05 kilograms of VOC per liter.

(h) Subsections (3), (6), (7), and (8) do not apply to digital printing.

(3) SOLVENT AND SOLVENT SOLUTION REQUIREMENTS Except as provided under sub. (6), no owner or operator of a facility may cause, allow or permit the use of a solvent or solvent solution for industrial cleaning operations on and after January 1, 2002 unless the VOC content of the solvent or solvent solution is less than or equal to the applicable VOC content listed in Table 1 for the respective cleaning operation.

Table 1
VOC Content Limits for Solvents and Solvent Solutions Used in Industrial Cleaning Operations

Cleaning Activity	VOC Content of Solvent or Solvent Solution in kilograms per liter (pounds per gallon)
(a) Product cleaning during manufacturing process or surface preparation for coating, adhesive or ink application	
1. General	0.05 (0.42)
2. Electrical apparatus components and electronic components	0.50 (4.2)
3. Laminated wood products—removal of contact adhesives	
a. General	0.46 (3.8)
b. Polyvinylchloride surfaces	0.70 (5.8)
4. Medical devices and pharmaceuticals	0.80 (6.7)
5. Screen printing—removal of adhesives from plastic substrates	0.77 (6.4)
(b) Repair and maintenance cleaning	
1. General	0.05 (0.42)
2. Electrical apparatus components and electronic components	0.90 (7.5)
3. Medical devices and pharmaceuticals	
a. Tools, equipment and machinery	0.80 (6.7)
b. General work surfaces	0.60 (5.0)
4. Screen printing—removal of oils and adhesives from cutting dies	0.55 (4.6)
(c) Cleaning of coatings application equipment or adhesives application equipment	
1. General	0.55 (4.6)
2. Architectural coatings	0.95 (7.9)
3. Ultraviolet coatings	0.80 (6.7)
(d) Cleaning of ink application equipment	
1. General	0.05 (0.42)
2. Flexographic printing	
a. General	0.05 (0.42)
b. Plastics, coated papers and metal foils	0.89 (7.4)
3. Rotogravure printing	
a. Publication	0.75 (6.3)
b. Packaging	0.05 (0.42)
4. Lithographic or letterpress printing	
a. On press components	*
b. Removable press components	0.05 (0.42)
5. Screen printing	0.77 (6.4)
6. Ultraviolet ink application equipment (except screen printing)	0.80 (6.7)
(e) Cleaning of polyester resin application equipment	0.05 (0.42)

* A maximum VOC content of 30% by weight

(4) CLEANING DEVICES AND METHODS REQUIREMENTS Except as provided under sub. (6), on or after January 1, 2002, the owner or operator of a facility shall comply with the following requirements associated with the identified cleaning devices or methods when using solvents or solvent solutions:

(a) Physically rub a surface with a porous applicator such as a rag, paper, sponge, or a cotton swab moistened with solvent or solvent solution.

(b) Closed containers or hand held spray bottles from which solvents or solvent solutions are applied without a propellant induced force.

(c) Cleaning equipment which has a solvent or solvent solution container that is closed during cleaning operations, except when depositing and removing objects to be cleaned, and is closed during non-operation with the exception of maintenance and repair to the cleaning equipment itself.

(d) A remote reservoir cleaner operated in compliance with all of the following requirements:

1. Solvent vapors are prevented from escaping from the solvent or solvent solution container by using devices such as a cover or a valve when the remote reservoir is not being used, cleaned, or repaired.

2. Flow is directed in a manner that prevents solvent or solvent solution from splashing outside of the remote reservoir cleaner.

3. The cleaner is not used for cleaning porous or absorbent materials, such as cloth, leather, wood, or rope.

4. Only solvent or solvent solution containers free of all liquid leaks are used. Auxiliary equipment, such as pumps, pipelines or flanges, may not have any liquid leaks, visible tears, or cracks. Any liquid leak, visible tear, or crack detected shall be repaired within one calendar day, or the leaking section of the remote reservoir cleaner shall be drained of all solvents or solvent solutions and shut down until it is replaced or repaired.

(e) A non-atomized flow method where the used solvents or solvent solutions are collected in a container or a collection system which is closed, except for the solvent or solvent solution collection openings that may be open when filling or emptying, or the opening caused by use of a pressure relief valve.

(f) A flushing method where the used solvents or solvent solutions are discharged into a container which is closed, except for the solvent or solvent solution collection openings that may be open when filling or emptying, or the opening caused by use of a pressure relief valve. The discharged solvents or solvent solutions shall be collected into containers without atomizing into the open air.

(5) STORAGE AND DISPOSAL. The owner or operator of a facility shall store all solvents or solvent solutions used in industrial cleaning operations in non-absorbent, non-leaking containers which shall be kept covered except when filling or emptying. Cloth and paper moistened with solvents or solvent solutions shall be stored in covered, non-absorbent, non-leaking containers.

(6) CONTROL EQUIPMENT. In lieu of complying with the requirements in sub. (3) or (4), the owner or operator of a facility may use a VOC emission control system to control VOC emissions from the industrial cleaning operations at the facility provided one of the following requirements is met:

(a) The emission control system has a minimum overall emission reduction efficiency of 85% for VOC emissions as determined in accordance with s. NR 439.06 (3) (am).

(b) The emission control system has a minimum VOC capture efficiency of 90% and an output of VOC emissions of less than 50 ppm calculated as carbon, not including methane and ethane, with no dilution, as determined in accordance with s. NR 439.06 (3) (a).

(c) The emission control system meets the requirements of the applicable source specific rule in chs. NR 420 to 422.

(7) GENERAL PROHIBITIONS. The owner or operator of a facility may not atomize any solvent or solvent solution unless the resulting VOC emissions are controlled by an air pollution control system that meets one of the requirements of sub. (6).

(8) ALTERNATIVE COMPLIANCE OPTION. In lieu of complying with the requirements in sub. (3), the owner or operator of a facility may use solvents or solvent solutions for industrial cleaning operations which have a VOC composite partial vapor pressure of less than or equal to 10 mm of Hg at 20°C.

(9) RECORDKEEPING REQUIREMENTS. (a) To determine applicability under sub. (1), each owner or operator of an industrial cleaning operation at a facility located in Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, or Waukesha county shall maintain records of the maximum theoretical emissions of VOCs from the facility excluding any maximum theoretical emissions of VOCs resulting from combustion, or VOCs specifically subject to s. NR 419.05, 419.06, or 419.08, ch. NR 420, 421, or 422, or s. NR 423.03, 423.05, 424.04, or 424.05.

(b) Each owner or operator of a facility that is exempt under sub. (2) shall collect and record the information specified in this paragraph as appropriate:

1. Any owner or operator claiming to be exempt under sub. (2) (b) 3. shall maintain records of the daily quantity in gallons of VOC-containing solvents and solvent solutions used for industrial cleaning operations.

2. Any owner or operator claiming to be exempt under sub. (2) (b) 4. shall maintain records of the amount used in gallons of non-compliant solvents and solvent solutions and the amount used in gallons of any coatings and inks exempt under s. NR 422.03 (7) during any 12 consecutive months at a facility.

3. Any owner or operator claiming to be exempt under sub. (2) (c) shall maintain records of the daily quantity in fluid ounces of VOC-containing aerosol product used for industrial cleaning operations.

4. Any owner or operator claiming to be exempt under sub. (2) (g) shall maintain a record of the VOC contents of the solvents or solvent solutions used in kilograms per liter or pounds per gallon.

(c) Each owner or operator of a facility that is subject to this section shall collect and record the information specified in this paragraph as appropriate:

1. Any owner or operator subject to sub. (3) shall maintain a record of the VOC contents of the solvents or solvent solutions used in industrial cleaning operations in kilograms per liter, pounds per gallon or weight percent.

2. Any owner or operator subject to sub. (6) shall keep a record of the results of any testing conducted as required under sub. (6).

3. Any owner or operator subject to sub. (8) shall keep a record of the VOC composite partial vapor pressures of solvents or solvent solutions used in industrial cleaning operations.

(d) Records required under this subsection shall be kept for five years unless another time period is approved by the department.

History: Cr Register, January, 2001, No. 541, eff. 2-1-01; CR 02-097: am (1) Register June 2004 No. 582, eff. 7-1-04, correction in (9) (a) made under s. 13.93 (2m) (b) 7, Stats., Register June 2004 No. 582; CR 08-102: am (title), (1) (a), (b), (2) (intro.), (b) (intro.), 4., (e), (g), (3) (intro.), (6) (a), (b) and (9) (a) Register July 2009 No. 643, eff. 8-1-09; correction in (9) (a) made under s. 13.92 (4) (b) 7, Stats., Register July 2009 No. 643; **CR 11-005: am. (2) (a) 1., (4) (intro.), (a), cr. (2) (h) Register January 2012 No. 673, eff. 2-1-12.**

NR 423.037 Industrial cleaning operations — part 2.

(1) APPLICABILITY. Beginning on March 1, 2013, except as provided in sub. (9) (a), this section applies to industrial cleaning operations at facilities that are located in Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, or Waukesha county and having actual VOC emissions from industrial cleaning operations equal to or exceeding 3 tons on a 12 consecutive month rolling basis from the facility with all control equipment inoperative. On and after May 1, 2010, except as provided in sub. (9) (a), this section applies to industrial cleaning operations at facilities that are located in Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, or Waukesha county and having actual VOC emissions from industrial cleaning operations equal to or exceeding 3 tons on a 12 consecutive month rolling basis from the facility with all control equipment inoperative.

(2) EXEMPTIONS. If any exemption in this subsection is based on an exemption threshold and that threshold is exceeded, the exemption will no longer apply to the facility. The following exemptions are applicable to various provisions of this section:

(a) This section does not apply to:

- Operations regulated under s. NR 422.127 (3m) or 423.03.
- Stripping of cured coatings, cured inks, or cured adhesives.
- Cleaning operations in graphic arts pre-press areas including the cleaning of film processors, color scanners or plate processors, or film cleaning and plate cleaning.
- Cleaning operations associated with the following activities:

- a. Aerospace assembly and component coating operations.
 - b. Wood furniture coating.
 - c. Coating of marine vessels and components and other structures intended for exposure to a marine environment.
 - d. Flexographic printing.
 - e. Lithographic printing.
 - f. Flat wood panel and wood flat stock coating.
 - g. Large appliance coating.
 - h. Furniture metal coating.
 - i. Paper, film, and foil coating.
 - k. Fabric and vinyl coating.
 - L. Plastic parts and products coating.
 - n. Miscellaneous metal parts and products coating.
 - p. Motor vehicle and mobile equipment assembly and coating operations.
 - q. Locomotive and railcar assembly and coating operations.
 - r. Surface preparation of precision optics.
 - s. Surface preparation of numismatic dies.
 - u. Resin, coating, ink, and adhesive mixing and molding equipment operation.
 - w. Can coating.
 - x. Coil coating.
 - za. Coating manufacturing.
 - ze. Screen printing.
 - zf. Letterpress printing.
 - zg. Rotogravure printing.
 - zh. Automobile refinishing.
 - zi. Synthetic resins manufacturing.
- (b) Subsection (3) does not apply to any of the following activities or facilities:

1. Cleaning conducted in conjunction with performance laboratory tests on coatings, adhesives or inks; research and development programs; and laboratory tests in quality assurance laboratories.

3. Medical device and pharmaceutical manufacturing facilities using less than a total of 1.5 gallons per day of VOC-containing solvents and solvent solutions for industrial cleaning operations.

(c) Subsections (3) and (7) do not apply to cleaning with aerosol products if 160 fluid ounces or less of VOC-containing aerosol products are used per day for industrial cleaning operations, per facility.

(cg) Subsections (3), (6), (7), and (8) do not apply to digital printing.

(cr) Subsections (3), (4), (6), (8), and (9) (c) do not apply to use of industrial adhesives and adhesive primers.

(d) Subsection (7) does not apply to cleaning with solvents or solvent solutions in spray bottles or containers described in sub. (4) (b).

(e) Subsection (7) does not apply to the cleaning of the nozzle tips of automated spray equipment systems, except for robotic systems that are programmed to spray into a closed container.

(f) Subsection (7) does not apply to automatically applied blanket or roller wash.

(3) SOLVENT AND SOLVENT SOLUTION REQUIREMENTS Except as provided under sub. (6), no owner or operator of a facility may cause, allow or permit the use of a solvent or solvent solution for industrial cleaning operations on and after May 1, 2010 unless the VOC content of the solvent or solvent solution is less than or equal to the applicable VOC content listed in Table 1 for the respective cleaning operation.

**Table 1
VOC Content Limits for Solvents and Solvent Solutions Used in Industrial Cleaning Operations**

Cleaning Activity	VOC Content of Solvent or Solvent Solution in kilograms per liter (pounds per gallon)
(a) Product cleaning during manufacturing process or surface preparation for coating, adhesive or ink application	
1. General	0.05 (0.42)
2. Electrical apparatus components and electronic components	
a. General	0.10 (0.83)
b. Cables	0.40 (3.3)
c. Touch-up performed on printed circuit boards where surface mounted devices have already been attached	0.80 (6.7)
4. Medical devices and pharmaceuticals	0.80 (6.7)
(b) Repair and maintenance cleaning	
1. General	0.05 (0.42)
2. Electrical apparatus components and electronic components	
a. General	0.10 (0.83)
b. Cables	0.40 (3.3)
3. Medical devices and pharmaceuticals	
a. Tools, equipment and machinery	0.80 (6.7)
b. General work surfaces	0.60 (5.0)
5. Ink and adhesive manufacturing	0.20 (1.7)
(c) Cleaning of coatings (excluding adhesives) application equipment	0.05 (0.42)
(e) Cleaning of polyester resin application equipment	0.05 (0.42)

(4) CLEANING DEVICES AND METHODS REQUIREMENTS Except as provided under sub. (6), by November 1, 2009, the owner or operator of a facility shall comply with the following require-

ments associated with the identified cleaning devices or methods when using solvents or solvent solutions:

(a) Physically rub a surface with a porous applicator such as a rag, paper, sponge, or a cotton swab moistened with solvent or solvent solution.

(b) Closed containers or hand held spray bottles from which solvents or solvent solutions are applied without a propellant-injected force.

(c) Cleaning equipment which has a solvent or solvent solution container that is closed during cleaning operations, except when depositing and removing objects to be cleaned, and is closed during non-operation with the exception of maintenance and repair to the cleaning equipment itself.

(d) A remote reservoir cleaner operated in compliance with all of the following requirements:

1. Solvent vapors are prevented from escaping from the solvent or solvent solution container by using devices such as a cover or a valve when the remote reservoir is not being used, cleaned, or repaired.

2. Flow is directed in a manner that prevents solvent or solvent solution from splashing outside of the remote reservoir cleaner.

3. The cleaner is not used for cleaning porous or absorbent materials, such as cloth, leather, wood, or rope.

4. Only solvent or solvent solution containers free of all liquid leaks are used. Auxiliary equipment, such as pumps, pipelines, or flanges, may not have any liquid leaks, visible tears, or cracks. Any liquid leak, visible tear, or crack detected shall be repaired within one calendar day, or the leaking section of the remote reservoir cleaner shall be drained of all solvents or solvent solutions and shut down until it is replaced or repaired.

(e) A non-atomized flow method where the used solvents or solvent solutions are collected in a container or a collection system which is closed, except for the solvent or solvent solution collection openings that may be open when filling or emptying, or the opening caused by use of a pressure relief valve.

(f) A flushing method where the used solvents or solvent solutions are discharged into a container which is closed, except for the solvent or solvent solution collection openings that may be open when filling or emptying, or the opening caused by use of a pressure relief valve. The discharged solvents or solvent solutions shall be collected into containers without atomizing into the open air.

(5) STORAGE, DISPOSAL, AND TRANSPORT The owner or operator of a facility shall store all solvents or solvent solutions used in industrial cleaning operations in non-absorbent, non-leaking containers which shall be kept covered except when filling or emptying. Cloth and paper moistened with solvents or solvent solutions shall be stored in covered, non-absorbent, non-leaking containers. VOC-containing cleaning materials shall be conveyed in closed containers or pipes.

(6) CONTROL EQUIPMENT In lieu of complying with the requirements in sub. (3) or (4), the owner or operator of a facility may use a VOC emission control system to control VOC emissions from the industrial cleaning operations at the facility provided one of the following requirements is met:

(a) The emission control system has a minimum overall emission reduction efficiency of 85% for VOC emissions as determined in accordance with s. NR 439.06 (3) (am).

(b) The emission control system has a minimum VOC capture efficiency of 90% and an output of VOC emissions of less than 50 ppm calculated as carbon, not including methane and ethane, with no dilution, as determined in accordance with s. NR 439.06 (3) (a).

(c) The emission control system meets the requirements of the applicable source specific rule in chs. NR 420 to 422.

(7) GENERAL PROHIBITIONS The owner or operator of a facility may not atomize any solvent or solvent solution unless the resulting VOC emissions are controlled by an air pollution control system that meets one of the requirements of sub. (6).

(8) ALTERNATIVE COMPLIANCE OPTION In lieu of complying with the requirements in sub. (3), the owner or operator of a facility may use solvents or solvent solutions for industrial cleaning operations which have a VOC composite partial vapor pressure of less than or equal to 8 mm of Hg at 20°C.

(9) RECORDKEEPING REQUIREMENTS (a) To determine applicability under sub. (1), each owner or operator of an industrial cleaning operation at a facility located in Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, or Waukesha county shall maintain records of all of the following for solvent and solvent solutions used for cleaning activities:

1. The VOC content of each solvent or solvent solution used.

2. The volume of each solvent or solvent solution used per month.

3. The total emissions, before consideration of controls, for each month from all solvents or solvent solutions.

4. The total emissions, before consideration of controls, for each consecutive 12 month period from all solvents or solvent solutions.

(b) Each owner or operator of a facility that is exempt under sub. (2) shall collect and record the information specified in this paragraph as appropriate.

1. Any owner or operator claiming to be exempt under sub. (2) (b) 3. shall maintain records of the daily quantity in gallons of VOC-containing solvents and solvent solutions used for industrial cleaning operations.

3. Any owner or operator claiming to be exempt under sub. (2) (c) shall maintain records of the daily quantity in fluid ounces of VOC-containing aerosol product used for industrial cleaning operations.

(c) Each owner or operator of a facility that is subject to this section shall collect and record the information specified in subds. 1g. and 1r., and also in subd. 2. as appropriate:

1g. The name and identification of each cleaning material and the associated solvent cleaning activity.

1r. The VOC content, based upon Method 24 in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), of each cleaning material, in pounds per gallon of material, as employed or the VOC composite partial vapor pressure of the solvents or solvent solutions used in industrial cleaning operations, depending on whether the cleaning material is subject to sub. (3) or (8).

2. Any owner or operator subject to sub. (6) shall keep a record of the results of any testing conducted as required under sub. (6) and shall meet the requirements in s. NR 439.04 (6).

(d) Records required under this subsection shall be kept for 5 years unless another time period is approved by the department.

History: CR 08-102: cr Register July 2009 No. 643, eff. 8-1-09; CR 11-005: renum. (9) (a) to be (9) (a) (intro.) and am., am. (1), (2) (a) 1., 4. b., d., g., i., k., w., (3) Table 1, (4) (intro.), (a), (5), (9) (c) (intro.), 2., r. (2) (a) 4. j., m., o., t., v., y., z., zb., zc., zd., 5., (b) 2., 4., (g), (9) (b) 2., 4., (c) 1., 3., cr. (2) (a) 4. ze., zf., zg., zh., zi., (cg), (cr), (9) (a) 1., 2., 3., 4., (c) 1g., 1r. Register January 2012 No. 673, eff. 2-1-12.

NR 423.05 Liquid VOC solvent dry cleaning.

(1) APPLICABILITY This section applies to liquid VOC solvent washers, dryers, solvent filters, settling tanks, vacuum stills, piping, ductwork, pumps, storage tanks, and other containers and conveyors of liquid VOC solvent that are used in a liquid VOC 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.