Chapter NR 421

CONTROL OF ORGANIC COMPOUND EMISSIONS FROM CHEMICAL, COATINGS AND RUBBER PRODUCTS MANUFACTURING

NR 421.01 Applicability; purpose. (1) APPLICABILITY. This chapter applies to all chemical, coatings and rubber products manufacturing 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 chemical, coatings and rubber products manufacturing sources 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**;** corrections made in (2) made under s. 13.93 (2m) (b) 7., Stats., Register, December, 1996, No. 492.

NR 421.02 Definitions. Except when another definition is specifically made applicable, the definitions contained in chs. NR 400, 419, and 420 apply to the terms used in this chapter. In addition, except when another definition is specifically made applicable, in this chapter and in chs. NR 422 to 425:

(1) "Bead dipping" means the dipping of an assembled tire bead into a solvent based cement.

(2) "Blending tank" means any vessel in which resin, coating or other materials, or any combination thereof, are added to produce product blend.

(3) "Coatings manufacturing facility" means any facility which mixes, blends or compounds paints, varnishes, lacquers, enamels, shellacs or sealers, and which is classified under standard industrial classification code 2851, as described in the Standard Industrial Classification Manual, 1987, incorporated by reference in s. NR 484.05.

(4) "Completed resin" is any resin which has completed its processing and is available for use in the basic components of plastics or as a component of surface coating formulations.

(5) "Green tires" means assembled tires before molding and curing have occurred.

(6) "Green tire spraying" means the spraying of green tires, both inside and outside, with release compounds which help remove air from the tire during molding and prevent the tire from sticking to the mold after curing.

(7) "Grinding mill" means any mill with cylindrical chambers containing grinding media such as balls, pebbles, or sand which grind and disperse coating solids.

(8) "High speed dispersion mill" means any mixer with one or more blades that rotate at high speed in order to disperse coating solids.

(9) "Passenger type tire" means agricultural, airplane, industrial, mobile home, light and medium duty truck, and passenger vehicle tires with a bead diameter up to 50.8 cm (20 inches) and cross section dimension up to 32.5 cm (12.8 inches).

(10) "Pneumatic rubber tire manufacture" means the production of pneumatic rubber passenger type tires on a mass production basis.

(11) "Production equipment exhaust system" means a device for collecting and directing out of the work area fugitive emissions from reactor openings, centrifuge openings, and other vessel openings at a pharmaceutical manufacturing plant.

(12) "Reaction tank" means any piece of equipment in which organic or other materials are reacted to produce a resin. A reaction tank may include a stripping column, condensers, and a water separator, which return the evaporated solvent to the reaction vessel.

(13) "Reactor" means a vat or vessel, which may be jacketed to permit temperature control, designed to contain chemical reactions.

(14) "Resin" means a solid or semi−solid, water−insoluble, organic material with little or no tendency to crystallize and which is used as the basic components of plastics or as a component of surface−coating formulations.

(15) "Roller mill" means any mill with horizontal rollers that grind and disperse coating solids.

(16) "Synthesized pharmaceutical manufacturing" means manufacture of pharmaceutical products by chemical synthesis.

(17) "Synthetic resin manufacturing facility" means any facility which reacts organic compounds to produce a synthetic resin and which is classified under standard industrial classification code 2821, as described in the Standard Industrial Classification Manual, 1987, incorporated by reference in s. NR 484.05.

(18) "Thinning tank" means any vessel in which resin, coating, or other products are combined with solvents to thin the product.

(18m) "Tote tank" means any transportable container used to convey coatings, inks, adhesives, or any other related materials, with a capacity equal to or greater than 209 liters (55 gallons).

(19) "Tread end cementing" means the application of a solvent based cement to tire tread ends.

(20) "Undertread cementing" means the application of a solvent based cement to the underside of a tire tread.

(21) "VOC emission leak" means a fugitive emission of volatile organic compounds from any valve, pump, sealed agitator, compressor, flange or relief valve for which the fugitive VOC concentration is measured to exceed 10,000 ppm when tested according to Method 21 in Appendix A of 40 CFR part 60, incorporated by reference in s. NR 484.04.

(22) "Water based sprays" means release compounds, sprayed on the inside and outside of green tires, in which solids, water, and emulsifiers have been substituted for all organic solvents.

(23) "Wipe cleaning" means cleaning which utilizes a material such as a rag wetted with a solvent, prior to a physical rubbing process to remove contaminants from surfaces.

History: Renum. from NR 154.01, cr. (1m), (2e), (2s), (4e), (4s), (9m), (10e), (10s), (11e) and (11s), Register, September, 1986, No. 369, eff. 10−1−86; renum. (2) and (5) to be NR 400.02 (22) and (51m), cr. (12m), Register, February, 1990, No. 410, eff. 3−1−90; renum. (10) and (11) to be (10w) and (11w) under s. 13.93 (2m) (b) 1., Stats., Register, August, 1990, No. 416; renum. (1m) to be (2), Register, May, 1992, No. 437, eff. 6−1−92; am. (2e) and (11e), Register, December, 1993, No. 456, eff. 1−1−94; am. (intro.), renum. (2e) to (13) to be (3) to (22) and am. (3), (17) and (21), Register, December, 1995, No. 480, eff. 1−1−96; CR 11−005: cr. (18m), (23) Register

January 2012 No. 673, eff. 2–1–12; **CR 20–088: am. (intro.) Register May 2022 No. 797, eff. 6–1–22.**

NR 421.03 Chemical manufacture. (1) PHARMACEUTICAL MANUFACTURE. (a) *Applicability.* This subsection applies, subject to the provisions of s. NR 425.03, to all operations at pharmaceutical manufacturing facilities involved in the manufacture of pharmaceutical products by chemical synthesis, with the exception of any reactor, distillation unit, dryer, filter, crystallizer, centrifuge, or other individual operation that has an actual emission rate of less than 6.8 kilograms per day (15 pounds per day) with all emission control equipment inoperative.

(b) *Emission control requirements.* Except as provided under par. (a), the owner or operator of a synthesized pharmaceutical manufacturing facility shall:

1. Equip each vent from reactors, distillation operations, crystallizers, centrifuges, or vacuum dryers with surface condensers or an equally effective control device as approved by the department. If a surface condenser is used, the condenser outlet gas temperature may not exceed:

a. –25°C (–13°F) for VOCs with vapor pressure greater than 40 kPa (5.8 psia) as measured at 20°C (68°F).

b. – 15°C (5°F) for VOCs with vapor pressure between 20 kPa (2.9 psia) and 40 kPa (5.8 psia) as measured at 20°C (68°F).

c. 0°C (32°F) for VOCs with vapor pressure between 10 kPa (1.5 psia) and 20 kPa (2.9 psia) as measured at 20°C (68°F).

d. 10°C (50°F) for VOCs with vapor pressure between 7 kPa (1.0 psia) and 10 kPa (1.5 psia) as measured at 20°C (68°F).

e. 25°C (77°F) for VOCs with vapor pressure between 3.5 kPa (0.5 psia) and 7 kPa (1.0 psia) as measured at 20°C (68°F).

2. Limit the VOC emissions from air dryer exhaust systems and production equipment exhaust systems to 15.0 kilograms per day (33 pounds per day) or to 10% of the uncontrolled emission rate of the system, whichever is less stringent.

3. Enclose all centrifuges, rotary vacuum filters, and any other filters having an exposed liquid surface, where the liquid contains VOCs and exerts a total VOC vapor pressure of 3.5 kPa (0.5 psia) or more at 20°C (68°F).

4. Install covers on all in–process tanks that contain a VOC at any time. Covers are to be closed except for necessary operator access during production, sampling, maintenance or inspection.

5. Repair all visually detectable leaks of liquid VOCs the first time the equipment is off–line for a period long enough to complete the repair.

(2) TRANSFER OF VOCS AT PHARMACEUTICAL MANUFACTURING FACILITIES. (a) *Applicability.* Subject to the provisions of s. NR 425.03, this subsection applies to all storage vessels for VOCs of more than 7,751 liter (2,000 gallon) capacity at a synthetic pharmaceutical manufacturing facility.

(b) *Emission reduction requirements.* No owner or operator of a synthetic pharmaceutical manufacturing facility may permit the delivery of VOCs with vapor pressure in excess of 28.0 kPa (4.1 psia) at 20°C from a truck or railcar to the storage vessel unless a vapor balance or equivalent control system is provided. The system must be at least 90% effective in reducing emissions from transfer operations.

(3) STORAGE OF VOCS AT PHARMACEUTICAL MANUFACTURING FACILITIES. (a) *Applicability.* This subsection applies, subject to the provisions of s. NR 425.03, to all storage vessels for VOCs of more than 3,785 liters (1,000 gallon) capacity at synthetic pharmaceutical manufacturing facilities.

(b) *Storage requirements.* The owner or operator of any storage vessel shall install pressure–vacuum conservation vents set at ±0.2 kPa, or an equally effective control device approved by the department, on all storage vessels that store VOCs with vapor pressures in excess of 10.5 kPa (1.52 psia) at 21°C (70°F).

History: Renum. from NR 154.13 (2) (b), (3) (e) and (9) and am., Register, September, 1986, No. 369, eff. 10–1–86; am. (1) (b) 1. and (2) (b), Register, February, 1990, No. 410, eff. 3–1–90; am. (1) (a), Register, December, 1993, No. 456, eff. 1–1–94.

NR 421.04 Pneumatic rubber tire manufacture. (1) APPLICABILITY. This section applies, subject to the provisions of s. NR 425.03, to all pneumatic rubber tire manufacturing facilities involved in undertread cementing, tread end cementing, bead dipping, or green tire spraying operations.

(2) EXEMPTIONS. (a) This section does not apply to the production of specialty tires for antique or other vehicles when produced on an irregular basis or with short production runs. This exemption applies only to tires produced on equipment separate from normal production lines for passenger type tires.

(b) The requirements of sub. (3) do not apply provided the combined total VOC emissions from all undertread cementing, tread end cementing, bead dipping and green tire spraying operations are less than or equal to 57 grams per tire produced and the emission rates are determined and certified by August 31, 1981.

(3) EMISSION CONTROL REQUIREMENTS. The owner or operator of a pneumatic rubber tire manufacturing facility shall:

(a) For all undertread cementing, tread end cementing and bead dipping operations install and operate one of the following:

1. A carbon adsorption system which reduces the VOC emissions from the capture system by at least 90% by weight.

2. An incineration or catalytic oxidation system which oxidizes at least 90% of the nonmethane VOCs (measured as total combustible carbon) which enter the incineration or oxidation unit, to nonorganic compounds.

3. An alternative VOC emission reduction system demonstrated to have at least 90% reduction efficiency measured across the control system, as approved by the department.

(b) For green tire spraying operations, implement one of following control strategies:

1. Utilize water–based mold release compound sprays with a volatile fraction containing, at a minimum, 90% water.

2. Install and operate a carbon adsorption system which reduces the VOC emission from the capture system by at least 90% by weight.

3. Install and operate an incineration or catalytic oxidation system which oxidizes at least 90% of the nonmethane VOCs (VOC measured as total combustible carbon) which enter the incinerator or oxidation unit to nonorganic compounds.

4. Install and operate an alternate VOC emission reduction system demonstrated to have at least a 90% reduction efficiency, measured across the control system, as approved by the department.

(c) For any control device required by this section, install and operate a capture system, as approved by the department, which is designed to provide maximum reasonable capture and transfer of VOCs to the control device. Maximum reasonable capture and transfer shall be in accord with guidance provided by:

1. Industrial Ventilation: A Manual of Recommended Practice, 20th ed., incorporated by reference in s. NR 484.11.

2. Recommended Industrial Ventilation Guidelines, incorporated by reference in s. NR 484.05.

History: Renum. from NR 154.13 (8) and am. (1), Register, September, 1986, No. 369, eff. 10–1–86; am. (4) (intro.), Register, February, 1990, No. 410, eff. 3–1–90; am. (3) (c) 1. and 2., Register, May, 1992, No. 437, eff. 6–1–92; am. (3) (c) 1. and 2., r. (4), Register, December, 1995, No. 480, eff. 1–1–96; correction in (2) (b) made under s. 13.93 (2m) (b) 7., Stats., Register, December, 1995, No. 480; am. (3) (a) (intro.), (c) 1., Register, December, 1996, No. 492, eff. 1–1–97; am. (3) (a) 2., Register, October, 1999, No. 526, eff. 11–1–99.

NR 421.05 Synthetic resin manufacturing. (1) APPLICABILITY. (a) Effective October 1, 1986, subs. (2) and (3) (a) and (b) apply to reaction tanks, thinning tanks, blending tanks, and other process vessels used in any synthetic resin manufacturing facility which has maximum theoretical emissions of VOCs from the processes greater than or equal to 100 tons per year

and which is located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Washington, or Waukesha.

(b) Effective January 1, 1994, subs. (2) and (3) (a) and (b) apply to reaction tanks, thinning tanks, blending tanks, and other process vessels used in any synthetic resin manufacturing facility which has maximum theoretical emissions of VOCs from the processes greater than or equal to one of the following:

1. 25 tons per year for a facility located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Washington, or Waukesha.

2. 100 tons per year for a facility located in the county of Door, Kewaunee, Manitowoc, Sheboygan, or Walworth.

(c) Subsections (2m), (3) (c), and (4) apply to facilities with synthetic resin manufacturing operations as described in par. (a) located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, or Waukesha if VOC emissions from all industrial cleaning operations, before consideration of controls, equal or exceed 3 tons per year on a 12 consecutive month rolling basis.

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

(2) EMISSION CONTROL REQUIREMENTS. The owner or operator of a synthetic resin manufacturing facility shall:

(a) Equip each vent from reaction tanks, and all blending tanks and thinning tanks, with an emission control system which meets one of the conditions listed in this paragraph. Any equally effective control method or equivalent system approved by the department under this paragraph 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. The emission control system shall be one of the following:

1. A surface condenser, or equally effective control device approved by the department, and a vapor recovery or control system that reduces emissions from the surface condenser or equally effective device by 85%.

2. An equivalent system or approach demonstrated to reliably control emissions from a process that does not include a condenser by not less than 90% as approved by the department.

(b) If a surface condenser is used, continuously record the condenser outlet gas temperature, and prevent the condenser outlet gas temperature from exceeding 32°C (90°F).

(c) Enclose all centrifuges, rotary vacuum filters, and any other filters having an exposed liquid surface, where the liquid contains VOCs.

(d) Install covers on all in−process tanks that contain a VOC at any time. Covers shall be closed except for necessary operator access during production, sampling, maintenance or inspection.

(e) Monitor each valve, pump, sealed agitator, compressor, flange, and relief valve used with a process stream which contains at least 10.0% VOCs by weight using Method 21 of Appendix A, 40 CFR part 60, incorporated by reference in s. NR 484.04. The monitoring schedule shall be as follows:

1. Monitor each valve, pump, sealed agitator, compressor, and relief valve that is located within 2.0 meters (6.6 feet) of a permanent support surface once during each calendar quarter.

2. Monitor all other valves, pumps, sealed agitators, compressors, and relief valves, and all flanges, once during each calendar year.

3. Notwithstanding subd. 1., if less than or equal to 2% of the valves monitored pursuant to subd. 1. are found to leak for 5 consecutive quarters, monitoring of valves under subd. 1. will not be required for the following 3 consecutive quarters. Monitoring shall be conducted during the next quarter and every fourth quarter thereafter. If, during monitoring required under this subdivision, more than 2% of valves monitored are found to leak, quarterly monitoring under subd. 1. shall be reinstituted in the next quarter.

(f) Check bimonthly by visual inspection each valve, pump, sealed agitator, compressor, flange, and relief valve for indications of dripping liquid.

(g) Repair all leaks detected as soon as practicable, but not later than 15 calendar days after leak detection unless the repair is technically infeasible without a process unit shutdown. In the case of such infeasibility, repair shall occur before the end of the next process unit shutdown.

(h) Document to the department all repairs of detectable leaks of VOCs for each calendar quarter. This documentation is to include a description of the equipment that leaked, date of detection, date of repair, dates of follow−up inspection, and an explanation of what caused the leak. This documentation is to be submitted to the department within one month after the close of the calendar quarter during which the leaks were detected and repaired.

(2m) INDUSTRIAL CLEANING OPERATIONS. (a) Except as provided in par. (b), the owner or operator of a facility subject to this subsection shall use any of the following methods when cleaning mixing vats, high dispersion mills, grinding mills, tote tanks, and roller mills:

1. Use a solvent or solvent solution that either contains less than 0.20 kilograms of VOC per liter (1.67 pounds per gallon) or has a VOC composite partial vapor pressure of less than or equal to 8 mm of Hg at 20ºC. The solvent or solvent solution shall be collected and stored in closed containers.

2. Implement the following work practices:

a. Maintain the equipment being cleaned as leak free.

b. Drain VOC−containing cleaning materials from the cleaned equipment upon completion of cleaning.

c. Store or dispose of VOC−containing cleaning materials, including waste solvent, in a manner that will prevent evaporation into the atmosphere.

d. Store all VOC−containing cleaning materials in closed containers.

3. Collect and vent the emissions from equipment cleaning to an emission control system that has an overall control efficiency of 80% or more on a mass basis. If incineration is used to control emissions, at least 90% of the organic carbon shall be oxidized to carbon dioxide.

4. Use no more than 228 liters (60 gallons) of virgin solvent per month. Solvent or solvent solution that is reused or recycled (either onsite or offsite), for further use in equipment cleaning or the manufacture of coating is not included in this limit.

(b) The owner or operator of a facility engaged in wipe cleaning may not use open containers for the storage of solvent or solvent solution used for cleaning or for the storage or disposal of any material impregnated with solvent or solvent solution used for cleaning.

(3) COMPLIANCE SCHEDULE. (a) Paragraph (b) applies only to a synthetic resin manufacturing facility which is 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.

(c) The owner or operator of a synthetic resin manufacturing facility subject to sub. (2m) shall achieve final compliance with sub. (2m) no later than February 1, 2013.

(4) RECORDKEEPING. (a) Except as provided in par. (c) and in addition to the applicable recordkeeping requirements in s. NR 439.04, the owner or operator of a synthetic resins manufacturing facility subject to sub. (2m) shall collect and record the following information, as applicable:

1. Total volume of virgin solvent used per month.

2. VOC content in kilograms per liter or pounds per gallon.

3. VOC composite partial vapor pressure in mm of Hg at 20ºC.

(b) The owner or operator of a synthetic resins manufacturing facility shall maintain the information under par. (a) at the facility for a minimum of 5 years and shall make the information available to an authorized department representative at any time during normal working hours.

(c) The provisions of par. (a) do not apply to solvent or solvent solution which is used to clean or flush a mill or vat during the manufacture of a synthetic resin and which is subsequently incorporated into the same batch.

History: Cr. Register, September, 1986, No. 369, eff. 10–1–86; am. (1), (2) (a) 1. and b. and (b), (3) (b) and (c) 4., r. and recr. (2) (e), renum. (2) (f) to be (2) (h) and am., cr. (2) (f) and (g), r. (3) (c) 5., Register, February, 1990, No. 410, eff. 3–1–90; am. (1), (2) (a) (intro.) and (b), cr. (1) (b), r. and recr. (3), Register, December, 1993, No. 456, eff. 1–1–94; am. (2) (a) (intro.), (e) (intro.) and 2., cr. (2) (e) 3., Register, December, 1995, No. 480, eff. 1–1–96; am. (1) (b), (2) (a) (intro.), 1., (3) (a), Register, August, 1996, No. 488, eff. 9–1–96; am. (2) (e) 3., Register, October, 1999, No. 526, eff. 11–1–99; CR 11–005: am. (1) (a), (b) (intro.), (3) (a) (intro.), cr. (1) (c), (2m), (3) (c), (4) Register January 2012 No. 673, eff. 2–1–12.

NR 421.06 Coatings manufacturing. (1) APPLICABILITY. (a) Effective October 1, 1986, subs. (2) and (3) (a) and (b) apply to pigment dispersion chambers, thinning tanks, tinting, straining, blending tanks, and other process vessels used in any coatings manufacturing facility which has maximum theoretical emissions of VOCs from the processes greater than or equal to 100 tons per year and which is located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Washington, or Waukesha.

(b) Effective January 1, 1994, subs. (2) and (3) (a) and (b) apply to pigment dispersion chambers, thinning tanks, tinting, straining, blending tanks and other process vessels used in any coatings manufacturing facility which has maximum theoretical emissions of VOCs from the processes greater than or equal to one of the following:

1. 25 tons per year for a facility located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Washington, or Waukesha.

2. 100 tons per year for a facility located in the county of Door, Kewaunee, Manitowoc, Sheboygan, or Walworth.

(c) Subsections (2m), (3) (c), and (4) apply to facilities with coatings manufacturing operations as described in par. (a) located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, or Waukesha if VOC emissions from all industrial cleaning operations, before consideration of controls, equal or exceed 3 tons per year on a 12 consecutive month rolling basis.

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

(2) EMISSION CONTROL REQUIREMENTS. The owner or operator of a coatings manufacturing facility shall:

(a) Keep all portable mixing vats covered with lids, except to add ingredients or to take samples. The lids shall extend at least 1/2 inch beyond the outer rim of the vat or be attached to the rim of the vat and shall be maintained in good condition such that, when in place, they maintain contact with the rim for at least 90% of the circumference of the rim of the vat. The lids may have a slit to allow clearance for insertion of a mixer shaft. The slit shall be covered after insertion of the mixer, except to allow safe clearance for the mixer shaft.

(b) Keep all stationary vats covered, except to add ingredients or take samples.

(c) Clean all portable mixing vats, stationary vats, high speed dispersion mills, grinding mills, and roller mills in a way which minimizes the emissions of VOCs into the atmosphere and which is approved by the department.

(d) Equip any grinding mill installed after October 1, 1986 with fully enclosed screens.

(e) Monitor each valve, pump, sealed agitator, compressor, flange, and relief valve used with a process stream which contains at least 10.0% VOCs by weight using Method 21 of Appendix A, 40 CFR part 60, incorporated by reference in s. NR 484.04. The monitoring schedule shall be as follows:

1. Monitor each valve, pump, sealed agitator, compressor, and relief valve that is located within 2.0 meters (6.6 feet) of a permanent support surface once during each calendar quarter.

2. Monitor all other valves, pumps, sealed agitators, compressors, and relief valves, and all flanges, once during each calendar year.

3. Notwithstanding subd. 1., if less than or equal to 2% of the valves monitored pursuant to subd. 1. are found to leak for 5 consecutive quarters, monitoring of valves under subd. 1. will not be required for the following 3 consecutive quarters. Monitoring shall be conducted during the next quarter and every fourth quarter thereafter. If, during monitoring required under this subdivision, more than 2% of valves monitored are found to leak, quarterly monitoring under subd. 1. shall be reinstituted in the next quarter.

(f) Check bimonthly by visual inspection each valve, pump, sealed agitator, compressor, flange, and relief valve for indications of dripping liquid.

(g) Repair all leaks detected as soon as practicable, but not later than 15 calendar days after leak detection unless the repair is technically infeasible without a process unit shutdown. In the case of such infeasibility, repair shall occur before the end of the next process unit shutdown.

(h) Document to the department all repairs of detectable leaks of VOCs for each calendar quarter. This documentation is to include a description of the equipment that caused the leak, date of detection, date of repair, date of follow–up inspection, and an explanation of what caused the leak. This documentation is to be submitted to the department within one month after the close of the calendar quarter during which the leaks were detected and repaired.

(2m) INDUSTRIAL CLEANING OPERATIONS. (a) Except as provided in par. (b), the owner or operator of a facility subject to this subsection shall use any of the following methods when cleaning mixing vats, high dispersion mills, grinding mills, tote tanks, and roller mills:

1. Use a solvent or solvent solution that either contains less than 0.20 kilograms of VOC per liter (1.67 pounds per gallon) or has a VOC composite partial vapor pressure of less than or equal to 8 mm of Hg at 20ºC. The solvent or solvent solution shall be collected and stored in closed containers.

2. Implement the following work practices:

a. Maintain the equipment being cleaned as leak free.

b. Drain VOC–containing cleaning materials from the cleaned equipment upon completion of cleaning.

c. Store or dispose of VOC–containing cleaning materials, including waste solvent, in a manner that will prevent evaporation into the atmosphere.

d. Store all VOC–containing cleaning materials in closed containers.

3. Collect and vent the emissions from equipment cleaning to an emission control system that has an overall control efficiency of 80% or more on a mass basis. If incineration is used to control

emissions, at least 90% of the organic carbon shall be oxidized to carbon dioxide.

4. Use no more than 228 liters (60 gallons) of virgin solvent per month. Solvent or solvent solution that is reused or recycled (either onsite or offsite), for further use in equipment cleaning or the manufacture of coating is not included in this limit.

(b) The owner or operator of a facility engaged in wipe cleaning using a solvent or solvent solution may not do either of the following:

1. Use open containers for the storage or disposal of cloth or paper impregnated with solvent or solvent solution that is used for cleanup, or coating removal.

2. Store solvent or solvent solutions for cleanup or coating removal in open containers.

(3) COMPLIANCE SCHEDULE. (a) Paragraph (b) applies only to a coatings manufacturing facility which is 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.

(c) The owner or operator of a coatings manufacturing facility subject to sub. (2m) shall achieve final compliance with sub. (2m) no later than February 1, 2013.

(4) RECORDKEEPING. (a) Except as provided in par. (c) and in addition to the applicable recordkeeping requirements in s. NR 439.04, the owner or operator of a synthetic resins manufacturing facility subject to sub. (2m) shall collect and record the following information, as applicable:

1. Total volume of virgin solvent used per month.

2. VOC content in kilograms per liter or pounds per gallon.

3. VOC composite partial vapor pressure in mm of Hg at 20ºC.

(b) The owner or operator of a synthetic resins manufacturing facility shall maintain the information under par. (a) at the facility for a minimum of 5 years and shall make the information available to an authorized department representative at any time during normal working hours.

(c) The provisions of par. (a) do not apply to solvent or solvent solution which is used to clean or flush a mill or vat during the manufacture of a synthetic resin and which is subsequently incorporated into the same batch.

History: Cr. Register, September, 1986, No. 369, eff. 10−1−86; am. (1) and (3) (c) 4., r. and recr. (2) (e), renum. (2) (f) to be (2) (h) and am., cr. (2) (f) and (g), r. (3) (c) 5., Register, February, 1990, No. 410, eff. 3−1−90; am. (1), cr. (1) (b), r. and recr. (3), Register, December, 1993, No. 456, eff. 1−1−94; am. (2) (e), cr. (2) (e) 3., Register, December, 1995, No. 480, eff. 1−1−96; am. (1) (b), (2) (a) (intro.), (3) (a), r. (2) (a) 1. to 3., Register, December, 1996, No. 492, eff. 1−1−97; am. (2) (e) 3., Register, October, 1999, No. 526, eff. 11−1−99; CR 11−005: am. (1) (a), (b) (intro.), (3) (a) (intro.), cr. (1) (c), (2m), (3) (c), (4) Register January 2012 No. 673, eff. 2−1−12.

NR 421.07 Synthetic organic chemical manufacturing industry. (1) APPLICABILITY. (a) This section applies to the owner or operator of any facility that is located in the county of Milwaukee, Waukesha, Washington, Ozaukee, Racine, Kenosha, or Sheboygan, and that operates an air oxidation unit, distillation operation, or reactor processes, as those activities are defined in ss. NR 440.675 (2) (c), 440.686 (2) (e), and 440.705 (2) (o), respectively, to produce any chemical as a product, coproduct, byproduct, or intermediate that is identified as follows:

1. For any reactor process or distillation operation, any chemical listed in Table A−1 of Appendix A of Control of Volatile Organic Compound Emissions from Reactor Processes and Distillation Operations Processes in the Synthetic Organic Chemical Manufacturing Industry, EPA−450/4−91−031, incorporated by reference in s. NR 484.06 (4) (g), for which an x appears in the column titled Reactor and distillation CTG.

2. For any oxidation unit, any chemical listed in s. NR 440.675 (8).

(b) For purposes of this section, any references to total organic compounds or TOC in ss. NR 440.675, 440.686, or 440.705 shall be considered to be volatile organic compounds as defined in s. NR 400.02 (162).

(2) AIR OXIDATION UNIT PROCESSES. (a) Unless exempt under par. (b), the owner or operator of a facility operating air oxidation unit processes subject to this section shall comply with the requirements of s. NR 440.675, subject to the following exceptions:

1. Notwithstanding s. NR 440.675 (1) (b) (intro.), for purposes of this section, an affected facility shall be one that is described by the criteria in s. NR 440.675 (1) (b) 1. to 3., without consideration of the specific date of the construction, modification or reconstruction of the facility.

2. Notwithstanding s. NR 440.675 (3) (intro.), for purposes of this section, the owner or operator of an affected facility shall comply with s. NR 440.675 (3) (a), (b), or (c) no later than August 1, 2010.

3. Notwithstanding s. NR 440.675 (6) (a), each owner or operator subject to this section shall notify the department how the facility will comply with the specific provisions of s. NR 440.675 (3) no later than June 1, 2010 or no later than 60 days after becoming subject to this section, whichever is later.

4. Section NR 440.675 (7) does not apply.

(b) Exemptions listed in s. NR 440.675 (1) (c) shall apply to an owner or operator subject to this subsection.

(3) DISTILLATION OPERATIONS. (a) Unless exempt under par. (b), the owner or operator of a facility with distillation operations subject to this section shall comply with the requirements of s. NR 440.686, subject to the following exceptions:

1. Notwithstanding s. NR 440.686 (1) (b) (intro.), for purposes of this section, an affected facility shall be one that is described by the criteria in s. NR 440.686 (1) (b) 1. to 3., without consideration of the specific date of the construction, modification or reconstruction of the facility.

2. Notwithstanding s. NR 440.686 (3) (intro.), for purposes of this section, the owner or operator of an affected facility shall comply with s. NR 440.686 (3) (a), (b), or (c) no later than August 1, 2010.

3. Notwithstanding s. NR 440.686 (6) (a), each owner or operator subject to this section shall notify the department how the facility will comply with the specific provisions of s. NR 440.686 (3) no later than June 1, 2010 or no later than 60 days after becoming subject to this section, whichever is later.

4. Section NR 440.686 (7) does not apply.

5. Notwithstanding s. NR 440.686 (8), the chemicals affected by this subsection are those identified in sub. (1) (a) 1.

(b) Exemptions listed in s. NR 440.686 (1) (c) shall apply to an owner or operator subject to this subsection.

(4) REACTOR PROCESSES. (a) Unless exempt under par. (b), the owner or operator of a facility with reactor processes subject to this section shall comply with the requirements of s. NR 440.705, subject to the following exceptions:

1. Notwithstanding s. NR 440.705 (1) (b) (intro.), for purposes of this section, an affected facility shall be one that is described by the criteria in s. NR 440.705 (1) (b) 1. to 3., without consideration of the specific date of the construction, modification or reconstruction of the facility.

2. Notwithstanding s. NR 440.705 (3) (intro.), for purposes of this section, the owner or operator of an affected facility shall comply with s. NR 440.705 (3) (a), (b), or (c) no later than August 1, 2010.

3. Notwithstanding s. NR 440.705 (6) (a), each owner or operator subject to this section shall notify the department how the facility will comply with the specific provisions of s. NR 440.705 (3) no later than June 1, 2010 or no later than 60 days after becoming subject to this section, whichever is later.

4. Section NR 440.705 (7) does not apply.

5. Notwithstanding s. NR 440.705 (8), the chemicals affected by this subsection are those identified in sub. (1) (a) 1.

(b) Exemptions listed in s. NR 440.705 (1) (c) shall apply to an owner or operator subject to this subsection.

(5) COMPLIANCE EMISSION TESTING. The owner or operator of a facility subject to this section shall conduct compliance emission testing in accordance with s. NR 439.075 (2) (c) 3. j.

(6) DELAYED COMPLIANCE. If the owner or operator of a facility employs a VOC emission control device that, on August 1, 2009 does not achieve compliance with an emission limitation in s. NR 440.675 (3), 440.686 (3), or 440.705 (3), applicable under this section, the owner or operator is not required to comply with the emission limitation until the control device is replaced for reasons other than compliance, including normal maintenance, malfunction, accident, and obsolescence. A control device is considered to be replaced when either of the following occur:

(a) All of the control device is replaced.

(b) The cost of repair of the control device or the cost of replacement of part of the control device exceeds 50% of the cost of replacing the entire control device with a control device that is capable of complying with the respective requirement of s. NR 440.675 (3), 440.686 (3), or 440.705 (3).

History: CR 08–114: cr. Register July 2009 No. 643, eff. 8–1–09; correction in (4) (a) 1. made under s. 13.92 (4) (b) 7., Stats., Register July 2009 No. 643; CR 11–005: renum. (1) (a) to be (1) (a) (intro.) and am., cr. (1) (a) 1., 2., (3) (a) 5., (4) (a) 5., am. (5) Register January 2012 No. 673, eff. 2–1–12.