

ORDER OF THE STATE OF WISCONSIN NATURAL RESOURCES BOARD  
AMENDING AND CREATING RULES

The Wisconsin Natural Resources Board adopts an order to **amend** NR 422.02(12), (13), (77), (90m) and (102), 422.07(title), 422.10(title), 422.11(title), 422.13(title), 422.142(title), 423.035(title), (1)(a) and (b), (2)(intro.), (b)(intro.) and 4., (e), (g), (3)(intro.), (6)(a) and (b) and (9)(a), 439.06(3)(j), 484.04(16), (19) and (20), 484.10(9), (12), (14), (21), (32), (36) and (56) and 484.11(4) and to **create** NR 422.02(12s), (21g), (26m), (34g), (34r), (37m), (40m), (53i), (54s), (57m), (80m), (87v), (87x) and (107m), 422.075, 422.105, 422.115, 422.131, 422.141, 422.142(1m), 422.143, 423.02(5m) and (9t) and 423.037 relating to the application of reasonably available control technology emission limitations to sources of volatile organic compounds in ozone non-attainment counties, and affecting small business.

**AM-19-08**

**Analysis Prepared by the Department of Natural Resources**

**1. Statute interpreted:** Section 285.11(1) and (6), Stats. The State Implementation Plan developed under s. 285.11(6), Stats., is revised.

**2. Statutory authority:** Section 285.11(6), Stats.

**3. Explanation of agency authority:** The Department has the authority to develop, revise and implement comprehensive plans for the prevention, abatement and control of air pollution. These plans, which may include rules and/or control strategies, must conform to the Federal Clean Air Act. Measures beyond those required by the Clean Air Act may be included, provided the Governor determines that additional measures are needed based on the recommendations of the Natural Resources Board or a Department head that promulgates a rule or establishes a control strategy. However, measures beyond those required by the Clean Air Act must meet at least one of the following criteria:

a. The measures are part an interstate ozone implementation agreement signed by the governors of Wisconsin and Illinois.

b. The measures are necessary to comply with the air pollution percentage reductions specified for reasonable further progress in the Clean Air Act.

**4. Related statute or rule:** Several of the proposed rule revisions correspond to the source categories covered under the existing VOC rule provisions. The following is a list of the proposed rules and source categories followed [in brackets] by the corresponding existing rule provision:

**NR 422.075:** paper coating [422.07].

**NR 422.105:** furniture metal coating [422.10].

**NR 422.115:** large appliance coating [422.11].

**NR 422.131:** flatwood panel coating [422.13].

**NR 422.141:** graphic arts [422.14].

**NR 422.143:** lithographic printing [422.142].

**NR 423.037:** industrial cleaning operations [423.035].

**5. Plain language analysis:**

Under Sec. 182(b)(2) of the Clean Air Act (CAA), the Department is required to update its VOC Reasonably Available Control Technology (RACT) regulations when EPA issues updated Control Techniques Guidelines (CTG) for RACT categories. These rules apply in Wisconsin's seven moderate ozone nonattainment counties (Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha). More specific information is provided below.

**NR 422.075:**

This rule applies VOC control to paper, film and foil coating lines, and solvent cleaning work practices. The rule applies new limits based on mass of VOC per mass of coating solids applied to individual coating lines emitting 25 tons per year VOC (maximum theoretical emissions) from the coating applicators and drying ovens. Paper coating lines include lines coating film and foil substrates in a uniform manner. The solvent cleaning work practices portion of the rule applies to facilities with VOC emissions equal to or greater than 3 tons on a 12 consecutive month rolling basis from all coating lines and related coating cleaning activities at the facility. The rule requires coating line operations to achieve a 90% VOC control efficiency through installation of VOC control devices and/or use of compliant coatings based on VOC content. The rule also addresses storage and disposal requirements, control requirements, recordkeeping, compliance testing, and certification testing. Requirements in NR 422.07 continue to apply to facilities currently covered by that section.

**NR 422.105, NR 422.115, NR 422.131:**

These rules apply VOC control to metal furniture coating, large appliance coating, flat wood panel coating and associated solvent cleaning work practices. The rules require application of new coating limits by coating type based on mass of VOC per volume of non-water coating as applied, exempt specific coating operations, establish a companion control requirement to utilize specific application techniques, and specify solvent cleaning work practices. The rules apply to facilities with VOC emissions equal to or exceeding 3 tons on a 12 consecutive month rolling basis. The rules require coating line operations to achieve a 90% VOC control efficiency through installation of VOC control devices and/or use of compliant coatings based on VOC content. The rules also address storage and disposal requirements, control requirements, recordkeeping, compliance testing, and certification testing. Requirements in NR 422.10, NR 422.11, NR 422.13 continue to apply to facilities currently covered by those sections.

**NR 422.141:**

This rule applies VOC control to large flexible package printing presses, and associated solvent cleaning work practices. The rule applies to individual large presses emitting 25 tons per year of VOC (maximum theoretical emissions) from inks, coatings and adhesives, combined, from the press dryer. Sources may choose to reduce VOC emissions from large individual presses by either installing control systems or accepting VOC content limits for inks, coatings and adhesives. The solvent cleaning work practices portion of the rule applies to facilities with VOC emissions equal to or exceeding 3 tons on a 12 consecutive month rolling basis from all flexible package printing presses and related flexible package cleaning activities at the facility. The regulation addresses flexible package printing operations through the installation of VOC control devices, and storage and disposal requirements. Requirements in NR 422.14 continue to apply to facilities currently covered by that section.

**NR 422.143:**

This rule applies VOC control to lithographic printing presses emitting 25 tons per year of VOC (maximum theoretical emissions) from heatset inks from the press dryer. The rule contains emission limitation exemptions for: up to 110 gallons of blanket or roller wash on a 12-consecutive month rolling basis, sheet-fed presses with a maximum sheet size of up to 11 inches by 17 inches, any lithographic press with a total fountain solution reservoir of less than one gallon, the printing of books on a heatset lithographic press, and heatset lithographic presses with a maximum web width of up to 22 inches. The rule also contains fountain solution VOC content limits for heatset, non-heatset, sheet-fed presses, and blanket or roller wash. The solvent cleaning work practices portion of the rule applies to facilities with VOC emissions equal to or exceeding 3 tons on a 12 consecutive month rolling basis from all lithographic printing presses and related lithographic cleaning activities at the facility. The rule also addresses storage and disposal requirements, temperature monitoring requirements, control requirements, recordkeeping requirements, compliance testing, and certification testing requirements. Requirements in NR 422.142 continue to apply to facilities currently covered by that section.

**NR 423.037:**

This rule applies VOC controls to industrial cleaning operations at facilities with VOC emissions equal to or exceeding 3 tons on a 12 consecutive month rolling basis from industrial cleaning operations. The rule limits emissions by establishing solvent and solvent solution requirements, cleaning device and methods requirements, storage and disposal requirements, and recordkeeping requirements. Some industrial cleaning operations are regulated under industry specific RACT rules such as lithographic printers and large appliance manufacturers. Requirements in NR 423.035 continue to apply to facilities currently covered by that section.

**6. Summary of, and comparison with, existing or proposed federal regulation:**

The Clean Air Act requires the Department to update existing VOC RACT rules when EPA issues an updated CTG. The rules for paper, film and foil coating, flat wood panel coating, furniture metal coating, large appliance coating, flexible package printing, lithographic printing, and industrial cleaning operations are based directly on the EPA CTGs. The rules regulate VOC emissions from individual printing and coating lines with emissions above specified thresholds as well as regulating VOC cleaning solvent work practices.

**7. Comparison with similar rules in adjacent states (Illinois, Iowa, Michigan and Minnesota):**

Illinois and Michigan are in the same position as Wisconsin regarding potentially deficient VOC RACT rules and they need to update their rules to reflect recently updated CTGs. Both states had previously adopted VOC RACT for the categories of sources subject to this rulemaking where such sources existed in their ozone nonattainment areas. Neither state has issued proposed new or updated regulations, but both are on a schedule to incorporate the required VOC RACT updates within their ozone SIPs. Minnesota and Iowa do not have designated ozone nonattainment areas and are not deficient in regard to VOC RACT.

**8. Summary of factual data and analytical methodologies used and how any related findings support the regulatory approach chosen:**

The new paper, film and foil coating rule, the new furniture metal coating rule, and the new large appliance coating rule are based on the 2007 EPA CTGs for these categories. The new flexible package printing rule, the new lithographic printing rule, the new flatwood panel coating rule and the new industrial cleaning operations rule are based on the 2006 EPA CTGs for these source categories. All the recommended control measures in the CTGs are incorporated into the new rules. Retention of existing RACT limitations

for these categories prevents backsliding. Some industrial cleaning operations will be regulated under industry specific RACT rules for lithographic printing; flexible package printing; flat wood paneling coatings; paper film and foil coatings; large appliance coatings; and metal furniture coatings.

**9. Analysis and supporting documents used to determine the effect on small business or in preparation of an economic impact report:**

**NR 422.075:**

The control requirements for individual large paper, film and foil coating lines will not impact small businesses. EPA established the number of affected facilities by surveys with consideration of state emission reporting and inventory estimates. Estimated cost per unit VOC reduced is provided by EPA in the CTG document.

An economic impact report was not requested.

**NR 422.105: NR 422.115: NR 422.131:**

The control requirements for large metal furniture coating lines, large appliance coating lines and flatwood panel coating lines will not impact small businesses as these activities are already regulated for the facility threshold scale proposed. The coating activities and limits and control requirements reflect current industry coating types and application practices. EPA established the number of affected facilities by surveys with consideration of state emission reporting and inventory estimates. Estimated cost per unit VOC reduced is provided by EPA in the CTG document.

An economic impact report was not requested.

**NR 422.141: NR 422.143:**

The control requirements for individual large printing flexible package printing presses and large lithographic packaging printing presses will not impact small businesses, since these large presses are not used by small businesses.

The solvent cleaning work practices are considered standard industrial practice. Most, if not all, facilities already perform good solvent cleaning work practices. The proposed rule establishes those standard work practices as requirements.

An economic impact report was not requested.

**NR 423:037:**

The control requirements for industrial cleaning operations will not impact small businesses. The many solvent cleaning work practices are considered standard industrial practice. Most, if not all, facilities already perform good solvent cleaning work practices.

An economic impact report has not been requested.

**10. Effect on small business:**

These regulations will have a minimal economic cost to individual small businesses, because the major control requirements apply only to large facilities. Additionally, solvent cleaning work practices are considered standard industrial practice, therefore it is anticipated that most businesses affected by these

rules are already implementing the requirements. More specific cost estimates are provided below.

**NR 422.075:**

Through industry surveys EPA has estimated that no more than 7 facilities may be regulated in the large paper, foil and film coating category (inclusive of fabric and vinyl coaters regulated under NR 422.08 in Wisconsin nonattainment counties. A smaller number meet the 25 ton/coating line regulatory threshold. EPA estimated the national average cost of this RACT control as \$1180/ton VOC (\$2005).

**NR 422.105:**

EPA estimated through prior survey work accomplished as background for the federal NESHAP that only 143 facilities operate within ozone nonattainment areas nationwide. Comparative statistics suggest less than a dozen furniture metal coating facilities operate in Wisconsin's nonattainment area. EPA estimated the national average cost of this coating RACT control as \$1670/ton VOC (\$2005) with the incremental cost of the new coating limits and application practice requirements as \$200/ton (\$2005).

**NR 422.115:**

For large appliance coating, EPA estimated the national average cost of this coating RACT control at \$500/ton VOC (\$2006).

**NR 422.131:**

Through industry surveys, EPA has estimated that only 1 facility is likely to be regulated for flatwood panel coating in Wisconsin nonattainment counties. EPA estimated the national average cost of this coating RACT control as \$1900/ton VOC (\$2005) for interior and tileboard panels and \$2600/ton VOC (\$2005) for exterior siding.

**NR422.141: NR 422.143:**

EPA estimates that the total annual cost related to the cleaning requirements per small lithographic and flexible package printing facilities is approximately \$1,485 (2005 dollars).

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The consent of the Attorney General will be requested for the incorporation by reference of new test standards in ch. NR 484.

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SECTION 1. NR 422.02(12) is amended to read:

NR 422.02 (12) "Blanket or roller wash" means any cleaning solvent or solution used to remove excess inks, oils and debris from ~~the blanket roller or inking~~ lithographic printing press equipment, including rollers on a lithographic press, plates, and cylinders. Cleaning solvent or solution used as a

rubber rejuvenator or to remove excess inks, oils and debris from the outside of the press or areas immediately around the press is also considered to be blanket or roller wash.

SECTION 2. NR 422.02(12s) is created to read:

NR 422.02(12s) "Class I hardboard panel" means a panel that meets the specifications of ANSI A135.4-2004, incorporated by reference in s. NR 484.11(4)(a).

SECTION 3. NR 422.02(13) is amended to read:

NR 422.02(13) "Class II hardboard paneling finish" means a finish that meets the specifications of ~~ANSI/AHA A135.5-1988 as approved by the American National Standards Institute. This standard is~~ ANSI A135.5-2004, incorporated by reference in s. NR 484.11(4)(b).

SECTION 4. NR 422.02(21g), (26m), (34g), (34r), (37m), (40m), (53i), (54s) and (57m) are created to read:

NR 422.02(21g) "Electric-insulating and thermal-conducting coating" means a coating that displays an electrical insulation of at least 1000 volts DC per mil on a flat test plate and an average thermal conductivity of at least 0.27 BTU per hour-foot-degree-Fahrenheit.

(26m) "Extreme high-gloss coating" means a coating that, when tested using ASTM D523-89, incorporated by reference in s. NR 484.10(9), shows a reflectance of 75 or more on a 60-degree glossmeter.

(34g) "Flexible packaging press" means a printing press that performs either packaging flexographic printing or packaging rotogravure printing.

(34r) "Flexible packaging printing" means the performance of packaging flexographic printing or packaging rotogravure printing.

(37m) "Fountain solution reservoir" means the collection tank that accepts fountain solution recirculated from printing units.

(40m) "Heat-resistant coating" means a coating that must withstand a temperature of at least 400°F during normal use.

(53i) "Metallic coating" means a coating which contains more than 5 grams of metal particles per liter of coating, as applied.

(54s) "Multi-component coating" means a coating requiring the addition of a separate reactive resin, commonly known as a catalyst or hardener, before application to form an acceptable dry film.

(57m) "One-component coating" means a coating that is ready for application as it comes out of its container to form an acceptable dry film. A thinner, if added to reduce the viscosity, is not considered a component.

SECTION 5. NR 422.02(77) is amended to read:

NR 422.02(77) "Roll coating" means the application of a coating material to a substrate by means of ~~hard rubber or steel rolls~~ rollers.

SECTION 6. NR 422.02(80m), (87v) and (87x) are created to read:

NR 422.02(80m) "Safety-indicating coating" means a coating which changes physical characteristics, such as color, to indicate unsafe conditions.

(87v) "Solar-absorbent coating" means a coating which has as its prime purpose the absorption of solar radiation.

(87x) "Solid-film lubricant" means a very thin coating consisting of a binder system containing as its chief pigment material one or more of molybdenum disulfide, graphite, polytetrafluoroethylene (PTFE) or other solids that act as a dry lubricant between faying surfaces.

SECTION 7. NR 422.02(90m) and (102) are amended to read:

NR 422.02(90m) "Stencil coating" means ~~a~~ an ink or coating that is applied onto or over a stencil ~~on a plastic part~~ at a thickness of one mil or less of ink or coating solids. Stencil coatings are most frequently letters, numbers or decorative designs.

(102)"Touch-up and repair coating" means a coating applied ~~by brush, air-brush or hand held non-refillable aerosol cans~~ to repair minor surface damage and imperfections, after normal coating operations have been completed.

SECTION 8. NR 422.02(107m) is created to read:

NR 422.02(107m) "VOC composite partial vapor pressure" has the meaning given in s. NR 423.02(11g).

SECTION 9. NR 422.07 (title) is amended to read:

NR 422.07(title) **Paper coating – part 1**.

SECTION 10. NR 422.075 is created to read:

NR 422.075 **Paper coating – part 2**. (1) APPLICABILITY. (a) Subsection (3) applies to the owner or operator of a paper coating line located at a facility in the county of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington or Waukesha if VOC emissions from all paper coating lines and related paper coating cleaning activities at the facility, before consideration of controls, equal or exceed 3 tons on a 12 consecutive month rolling basis.

(b) Subsection (2) applies to the owner or operator of a facility located in the counties of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha that operates a paper coating line, that has maximum theoretical emissions of VOCs equal to or greater than 25 tons per year from coatings.

(2) EMISSION LIMITATIONS. (a) On and after May 1, 2010, no owner or operator may cause, allow or permit the emission of any VOCs from an individual paper coating line in excess of either of the following emission limitations:

1. 0.2 kg VOC/kg solids (0.2 lb VOC/lb solids) applied for pressure sensitive tape and label coating.

2. 0.4 kg VOC/kg solids (0.4 lb VOC/lb solids) applied for paper, film and foil coating.

(b) Notwithstanding s. NR 422.04(4), an owner or operator using a control device to achieve compliance with par. (a) as allowed under s. NR 422.04(2)(c), shall achieve a minimum overall VOC control efficiency of 90%.

(3) WORK PRACTICES. On and after 3 months after the effective date of this section ... [LRB insert date], the owner or operator of a facility subject to this subsection shall employ work practices to minimize VOC emissions from mixing operations, storage tanks and other containers, and handling operations for coatings, thinners, cleaning materials, and waste materials. Work practices shall include all of the following, at a minimum:

(a) Store all VOC-containing coatings, thinners, coating related waste materials, cleaning materials, and shop towels used for cleaning in closed containers.

(b) Close mixing vessels used for VOC-containing coatings and other materials except when in direct use.

(c) Convey VOC-containing coatings, thinners, and cleaning materials in closed containers or pipes.

(d) Minimize spills of VOC-containing coating, thinners, and cleaning materials.

(e) Minimize emissions of VOC during cleaning of coating application, storage, mixing, and conveying equipment.

(f) Clean-up spills of any VOC-containing material immediately.

SECTION 11. NR 422.10 (title) is amended to read:

NR 422.10(title) **Furniture metal coating – part 1.**

SECTION 12. NR 422.105 is created to read:

NR 422.105 **Furniture metal coating – part 2.** (1) APPLICABILITY. This section applies to facilities which are located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington or Waukesha and have VOC emissions, before consideration of controls, equal to or exceeding 3 tons on a 12 consecutive month rolling basis from the application of coatings, including any related cleaning activities, to metal furniture. For purposes of this section, coatings include paints, sealants, caulks, inks, adhesives or maskants, but do not include metal protection oils, acids and bases.

(2) EXEMPTIONS. The following coating types are exempt from the emission limitations in sub.

(3):

- (a) Stencil coatings.
- (b) Safety-indicating coatings.
- (c) Solid-film lubricants.
- (d) Electric-insulating and thermal-conducting coatings.
- (e) Touch-up and repair coatings.
- (f) Hand-held aerosol can coatings.

(3) EMISSION LIMITATIONS. On and after May 1, 2010, no owner or operator may cause, allow or permit the emission of any VOCs in excess of limits listed in Table 2A. Notwithstanding s. NR 422.04(4), an owner or operator using a control device to achieve compliance with this subsection as allowed under s. NR 422.04(2)(c), shall achieve a minimum overall VOC control efficiency of 90%.

**Table 2A**

**VOC Content Limitations For Coatings Used In Furniture Metal Coating**

[Kilograms/liter (pounds/gallon) of coating, excluding water, as applied]

Coating Type	Maximum VOC Content	
	Cured coating	Air-dried coating
1. General, one-component coating	0.275 (2.3)	0.275 (2.3)
2. General, multi-component coating	0.275 (2.3)	0.340 (2.8)
3. Extreme high-gloss coating	0.360 (3.0)	0.340 (2.8)
4. Extreme performance coating	0.360 (3.0)	0.420 (3.5)
5. Heat-resistant coating	0.360 (3.0)	0.420 (3.5)
6. Metallic coating	0.420 (3.5)	0.420 (3.5)
7. Pretreatment coating	0.420 (3.5)	0.420 (3.5)
8. Solar-absorbent coating	0.360 (3.0)	0.420 (3.5)

(4) APPLICATION EQUIPMENT AND METHODS. No owner or operator of a furniture metal coating line subject to sub. (3) may apply coatings unless one of the following types of high transfer efficiency application equipment is used in accordance with the manufacturer's recommendations:

- (a) Electrostatic application.
- (b) Low-pressure spray method.
- (c) Flow coating.
- (d) Roll coating.
- (e) Dip coating, including electrodeposition.

(f) A coating application method demonstrated to the department to be capable of achieving a transfer efficiency equivalent to or better than that achieved by low-pressure spray method, and for which written approval of the department has been obtained.

(5) WORK PRACTICES. On and after 3 months after the effective date of this section ... [LRB insert date], the owner or operator of a furniture metal surface coating facility shall employ work practices to minimize VOC emissions from mixing operations, storage tanks and other containers, and handling operations for coatings, thinners, cleaning materials, and waste materials. Work practices shall include all of the following, at a minimum:

- (a) Store all VOC-containing coatings, thinners, coating related waste materials, cleaning materials, and shop towels used for cleaning in closed containers.

(b) Close mixing vessels used for VOC-containing coatings and other materials except when in direct use.

(c) Convey VOC-containing coatings, thinners, and cleaning materials in closed containers or pipes.

(d) Minimize spills of VOC-containing coating, thinners, and cleaning materials.

(e) Minimize emissions of VOC during cleaning of coating application, storage, mixing, and conveying equipment.

(f) Clean-up spills of any VOC-containing material immediately.

SECTION 13. NR 422.11(title) is amended to read:

NR 422.11(title) **Surface coating of large appliances – part 1**.

SECTION 14. NR 422.115 is created to read:

NR 422.115 **Surface coating of large appliance – part 2.** (1) APPLICABILITY. This section applies to facilities which are located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington or Waukesha and have VOC emissions, before consideration of controls, equal to or exceeding 3 tons on a 12 consecutive month rolling basis from large appliance surface coating, including any related cleaning activities. For purposes of this section, coatings include paints, sealants, caulks, inks, adhesives, and maskants, but do not include metal protection oils, acids and bases.

(2) EXEMPTIONS. The following coating types are exempt from the emission limitations in sub. (3):

(a) Stencil coatings.

(b) Safety-indicating coatings.

(c) Solid-film lubricants.

(d) Electric-insulating and thermal-conducting coatings.

(e) Touch-up and repair coatings.

(f) Hand-held aerosol can coatings.

(3) EMISSION LIMITATIONS. On and after May 1, 2010, no owner or operator may cause, allow or permit the emission of any VOCs in excess of limits listed in Table 2B. Notwithstanding s. NR 422.04(4), an owner or operator using a control device to achieve compliance with this subsection as allowed under s. NR 422.04(2)(c), shall achieve a minimum overall VOC control efficiency of 90%.

**Table 2B**

**VOC Content Limitations For Coatings Used In Large Appliance Coating**

[Kilograms/liter (pounds/gallon) of coating, excluding water, as applied]

Coating Type	Maximum VOC Content	
	Cured coating	Air-dried coating
1. General, one-component coating	0.275 (2.3)	0.275 (2.3)
2. General, multi-component coating	0.275 (2.3)	0.340 (2.8)
3. Extreme high-gloss coating	0.360 (3.0)	0.340 (2.8)
4. Extreme performance coating	0.360 (3.0)	0.420 (3.5)
5. Heat-resistant coating	0.360 (3.0)	0.420 (3.5)
6. Metallic coating	0.420 (3.5)	0.420 (3.5)
7. Pretreatment coating	0.420 (3.5)	0.420 (3.5)
8. Solar-absorbent coating	0.360 (3.0)	0.420 (3.5)

(4) APPLICATION EQUIPMENT AND METHODS. No owner or operator of a large appliance surface coating line subject to sub. (3) may apply coatings unless one of the following types of high transfer efficiency application equipment is used in accordance with the manufacturer's recommendations:

(a) Electrostatic application equipment.

(b) Low-pressure spray method application equipment.

(c) Flow coating.

(d) Roll coating.

(e) Dip coating, including electrodeposition.

(f) Any other coating application method demonstrated to the department to be capable of achieving a transfer efficiency equivalent to or better than that achieved by low-pressure spray method, and for which written approval of the department has been obtained.

(5) WORK PRACTICES. On and after 3 months after the effective date of this section ... [LRB insert date], the owner or operator of a large appliance surface coating facility shall employ work practices to minimize VOC emissions from mixing operations, storage tanks and other containers, and handling operations for coatings, thinners, cleaning materials, and waste materials. Work practices shall include all of the following, at a minimum:

(a) Store all VOC-containing coatings, thinners, coating related waste materials, cleaning materials, and shop towels used for cleaning in closed containers.

(b) Close mixing vessels used for VOC-containing coatings and other materials except when in direct use.

(c) Convey VOC-containing coatings, thinners, and cleaning materials in closed containers or pipes.

(d) Minimize spills of VOC-containing coating, thinners, and cleaning materials.

(e) Minimize emissions of VOC during cleaning of coating application, storage, mixing, and conveying equipment.

(f) Clean-up spills of any VOC-containing material immediately.

SECTION 15. NR 422.13(title) is amended to read:

NR 422.13 **Flat wood panel coating – part 1.**

SECTION 16. NR 422.131 is created to read:

NR 422.131 **Flat wood panel coating – part 2.** (1) APPLICABILITY. This section applies to facilities which are located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington or Waukesha and have VOC emissions, before consideration of controls, equal to or exceeding 3 tons on a 12 consecutive month rolling basis from the application of coatings, inks and adhesives, including any related cleaning activities, to wood and wood containing panel products that are any interior panel, exterior panel including siding, or class I hardboard panel.

(2) EMISSION LIMITATIONS. On and after May 1, 2010, no owner or operator of a facility subject to this section may cause, allow or permit the emission of any VOCs from a process line applying any ink, coating or adhesive in excess of 0.25 kilograms per liter material (2.1 pounds per gallon) excluding water. Notwithstanding s. NR 422.04(4), an owner or operator using a control device to achieve compliance with this subsection as allowed under s. NR 422.04(2)(c), shall achieve a minimum overall VOC control efficiency of 90%.

(3) WORK PRACTICES. On and after 3 months after the effective date of this section ... [LRB insert date], an owner or operator of a flatwood panel coating facility shall employ work practices to minimize VOC emissions from mixing operations, storage tanks and other containers, and handling operations for coatings, thinners, cleaning materials, and waste materials. Work practices shall include all of the following, at a minimum:

(a) Store all VOC-containing coatings, thinners, coating related waste materials, cleaning materials, and shop towels used for cleaning in closed containers.

(b) Close mixing vessels used for VOC-containing coatings and other materials except when in

direct use.

(c) Convey VOC-containing coatings, thinners, and cleaning materials in closed containers or pipes.

(d) Minimize spills of VOC-containing coating, thinners, and cleaning materials.

(e) Minimize emissions of VOC during cleaning of coating application, storage, mixing, and conveying equipment.

(f) Clean-up spills of any VOC-containing material immediately.

SECTION 17. NR 422.141 is created to read:

NR 422.141 **Flexible package printing.** (1) APPLICABILITY. (a) Subsection (3) applies to the owner or operator of a flexible packaging press located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington or Waukesha if VOC emissions from all flexible packaging printing presses and related flexible packaging cleaning activities at the facility, before consideration of controls, equal or exceed 3 tons on a 12 consecutive month rolling basis. When determining the VOC emissions for applicability under this paragraph, the VOC emissions from the cleaning of electronic components of a flexible packaging press, pre-press and post-press cleaning operations and the use of janitorial supplies used to clean around a flexible packaging press are excluded. In addition, the VOC emissions from solvents used in cold cleaners are excluded for applicability purposes.

(b) Subsection (2) applies to the owner or operator of a facility located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington or Waukesha that operates a flexible packaging press that has maximum theoretical emissions of VOC equal to or greater than 25 tons per year from inks, coatings and adhesives combined, from the press dryer. For a flexible packaging press subject to sub. (2) and also to s. NR 422.14(2), compliance with sub. (2) shall satisfy compliance with s. NR 422.14(2).

(2) EMISSION LIMITATIONS. On and after May 1, 2010, no owner or operator of a flexible packaging press subject to this subsection may operate, or cause, allow or permit the operation of the

press unless the owner or operator does one of the following:

(a) Installs and operates a vapor recovery system, incinerator or catalytic oxidation system to control VOC emissions. The overall VOC emission reduction efficiency of any capture system and control device, as measured across the entire control system, shall be at least:

1. 65% by weight for a flexible packaging press that was first installed prior to March 14, 1995 and that is controlled by a control device that was installed prior to the effective date of this paragraph ... [LRB insert date]. VOC emissions from an incinerator or catalytic oxidation system shall be measured as carbon.

2. 70% by weight for a flexible packaging press that was first installed prior to March 14, 1995 and that is controlled by a control device that was first installed on or after the effective date of this paragraph ... [LRB insert date]. VOC emissions from either an incinerator or catalytic oxidation system shall be measured as carbon.

3. 75% by weight for a flexible packaging press that was first installed on or after March 14, 1995 and that is controlled by a control device that was first installed prior to the effective date of this paragraph ... [LRB insert date]. VOC emissions from an incinerator or catalytic oxidation system shall be measured as carbon.

4. 80% by weight of VOCs for a flexible packaging press that was first installed on or after March 14, 1995 and that is controlled by a control device that was first installed on or after the effective date of this paragraph ... [LRB insert date]. VOC emissions from an incinerator or catalytic oxidation system shall be measured as carbon.

**Note:** With regard to use of the phrase "first installed" in this paragraph, the first installation date for a piece of equipment does not change if the equipment is later moved to a new location. For example, if a brand new press first installed in 1992 is moved to a new location in 1998, the first installation date is still 1992.

(b) Uses inks, coatings and adhesives that do not exceed one of the following VOC content limits:

1. 0.8 kg VOC/kg solids (0.8 lb VOC /lb solids) applied.

2. 0.16 kg VOC/kg material (0.16 lb VOC/lb material) applied.

(3) WORK PRACTICES: On and after 3 months after the effective date of this section ... [LRB insert date], the owner or operator of a flexible packaging press subject to this subsection shall store all solvents, solvent solutions, and any applicator moistened with solvents or solvent solutions that are used in cleaning operations related to flexible packaging printing in covered non-absorbent, non-leaking containers, except when filling or emptying the container and shall convey VOC-containing cleaning material in closed containers or pipes.

SECTION 18. NR 422.142(title) is amended to read:

NR 422.142(title) **Lithographic printing – part 1**.

SECTION 19. NR 422.142(1m) is created to read:

NR 422.142(1m) RETENTION FACTORS AND CAPTURE EFFICIENCIES. For purposes of determining VOC emissions from offset lithographic printing operations, the following retention factors and capture efficiencies may be used:

(a) A 20% VOC retention factor for heatset inks printed on absorptive substrates, meaning 80% of the VOC in the ink is emitted during the printing process and is available for capture and control by an add-on pollution control device.

(b) A 95% VOC retention factor for sheet-fed and non-heatset web inks printed on absorptive substrates, meaning 5% of the VOC in the ink is emitted during the printing process.

(c) A 50% VOC retention factor for cleaning solution in shop towels where the composite partial vapor pressure of the VOC in the cleaning solution is less than 10 mm of Hg at 20°C (68°F) and the cleaning solution and contaminated shop towels are kept in closed containers, meaning 50% of the VOC used on the shop towels is emitted during the cleaning process.

(d) A 100% VOC capture efficiency for inks. All the VOC in the ink that is not retained is assumed to be volatilized in the press dryer. Capture efficiency testing for heatset dryers is not required if it is

demonstrated that pressure in the dryer is negative relative to the surrounding press room and the airflow is into the dryer.

(e) A 70% VOC capture efficiency for fountain solutions containing alcohol substitutes.

(f) A 40% VOC capture efficiency for automatic blanket or roller wash where the VOC composite partial vapor pressure of the blanket or roller wash is less than 10 mm of Hg at 20°C (68°F).

SECTION 20. NR 422.143 is created to read:

NR 422.143 **Lithographic printing - part 2.** (1) APPLICABILITY. (a) Subsections (3)(b) and (c) and (4) apply to the owner or operator of a printing facility that operates a lithographic printing press in the county of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington or Waukesha if actual VOC emissions from all lithographic printing presses, including related lithographic cleaning activities and fountain solution use at the facility, before consideration of controls, equal or exceed 3 tons on a 12 consecutive month rolling basis. When determining the VOC emissions for applicability under this paragraph, the VOC emissions from the cleaning of electronic components of a lithographic printing press, pre-press and post-press cleaning operations and the use of janitorial supplies used to clean around a lithographic printing press are excluded. The VOC emissions from solvents used in cold cleaners are excluded for applicability purposes.

**Note:** Janitorial supplies are cleaners, such as detergent-based products, used to clean the floor or for other general cleaning purposes, for example, areas not contaminated with spilled ink.

(b) Subsection (3)(a) applies to the owner or operator of any heatset web lithographic printing press at a printing facility in the county of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington or Waukesha.

(1m) RETENTION FACTORS AND CAPTURE EFFICIENCIES. For purposes of determining VOC emissions from offset lithographic printing operations, the following retention factors and capture efficiencies may be used:

(a) A 20% VOC retention factor for heatset inks printed on absorptive substrates, meaning 80% of

the VOC in the ink is emitted during the printing process and is available for capture and control by an add-on pollution control device.

(b) A 95% VOC retention factor for sheet-fed and non-heatset web inks printed on absorptive substrates, meaning 5% of the VOC in the ink is emitted during the printing process.

(c) A 50% VOC retention factor for cleaning solution VOC in shop towels where the composite partial vapor pressure of the VOC in the cleaning solution is less than 10 mm of Hg at 20°C (68°F) and the cleaning solution and contaminated shop towels are kept in closed containers, meaning 50% of the VOC used on the shop towels is emitted during the cleaning process.

(d) A 100% VOC capture efficiency for inks. All the VOC in the ink that is not retained is assumed to be volatilized in the press dryer. Capture efficiency testing for heatset dryers is not required if it is demonstrated that pressure in the dryer is negative relative to the surrounding press room and the airflow is into the dryer.

(e) A 70% VOC capture efficiency for fountain solutions containing alcohol substitutes.

(f) A 40% VOC capture efficiency for automatic blanket or roller wash where the VOC composite partial vapor pressure of the blanket or roller wash is less than 10 mm of Hg at 20°C (68°F).

(2) EXEMPTIONS. The following exemptions apply to lithographic printing operations in Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha counties:

(a) Up to 110 gallons of blanket or roller wash, on a 12-consecutive month rolling basis, which do not meet the low VOC composite partial vapor pressure or low VOC content requirements as stated in this section, are exempt from the requirements of this section.

(b) The fountain solution VOC content requirements in sub. (3)(b) do not apply to sheet-fed presses with a maximum sheet size of up to 11 inches by 17 inches or to any lithographic press with a total fountain solution reservoir of less than one gallon.

(c) The printing of books on a heatset lithographic press is exempt from the requirements of sub. (3)(a).

(d) Heatset lithographic presses with a maximum web width of up to 22 inches are exempt from

the requirements of sub. (3)(a).

(3) EMISSION LIMITATIONS. (a) *Dryer exhaust*. 1. On and after May 1, 2010, no owner or operator of a heatset web lithographic printing press may operate, or cause, allow or permit the operation of a lithographic press that has maximum theoretical emissions of VOCs, from the dryer, equal to or greater than 25 tons per year from heatset inks, unless the owner or operator installs and operates an emission control device and meets the applicable emission limitation as follows:

a. If the emission control device was first installed prior to May 1, 2010, the owner or operator shall reduce VOC emissions from the lithographic press dryer exhaust by 90% by weight as carbon, minus methane and ethane, or maintain a maximum dryer exhaust outlet VOC concentration of 20 ppmv, as as carbon, minus methane and ethane.

b. If the emission control device was first installed after May 1, 2010, the owner or operator shall reduce VOC emissions from the lithographic press dryer exhaust by 95% by weight as carbon, minus methane and ethane, or maintain a maximum dryer exhaust outlet VOC concentration of 20 ppmv, as as carbon, minus methane and ethane.

**Note:** With regard to use of the phrase "first installed" in this paragraph, the first installation date for a control device does not change if the device is later moved to a new location. For example, if a brand new control device first installed in 1992 is moved to a new location in 1998, the first installation date is still 1992.

2. If a combined dryer and control device is a part of the press design, a 100% capture at the control inlet may be assumed for purposes of meeting the emission reduction limits in subd. 1.

(b) *Fountain solutions*. 1. 'Heatset web presses'. On and after May 1, 2010, any person who owns or operates a heatset web lithographic printing press shall use a fountain solution which has a VOC content, as applied, of no more than one of the following:

a. 1.6% by weight if the fountain solution contains any restricted alcohol and is not refrigerated to 60°F or less.

b. 3.0% by weight if the fountain solution contains any restricted alcohol and is refrigerated to

60°F or less.

c. 5.0% by weight if the fountain solution contains no restricted alcohol.

2. 'Non-heatset web presses'. On and after May 1, 2010, any person who owns or operates a non-heatset web lithographic printing press shall use a fountain solution which contains no restricted alcohol and which has a VOC content, as applied, of no more than 5.0% by weight.

3. 'Sheet-fed presses'. On and after May 1, 2010, any person who owns or operates a sheet-fed lithographic printing press shall, use a fountain solution which has a VOC content, as applied, of no more than one of the following:

a. 5.0% by weight.

b. 8.5% by weight if the fountain solution is refrigerated to 60°F or less.

(c) *Blanket or roller wash*. Except as provided in sub. (2)(a), on and after May 1, 2010, no owner or operator of a lithographic printing press may use, or cause, allow or permit the use of a blanket or roller wash unless the VOC content of the wash is less than or equal to 30% by weight or has a composite partial vapor pressure of less than or equal to 10 mm of Hg at 68°F.

(4) WORK PRACTICES. (a) On and after 3 months after the effective date of this rule ... [LRB insert date], the owner or operator of a lithographic press subject to this subsection shall store all solvents, solvent solutions and any applicator moistened with solvents or solvent solutions that are used in cleaning operations related to lithographic printing in covered non-absorbent, non-leaking containers, except when filling or emptying the container.

(5) TEMPERATURE MONITORING. The owner or operator of any lithographic printing press shall monitor, at least once each 8-hour shift, the temperature of each fountain solution reservoir for any fountain solution subject to sub. (3)(b)1.b. or 3.b.

(6) RECORDKEEPING REQUIREMENTS. In addition to the applicable recordkeeping requirements in s. NR 439.04, the owner or operator of any lithographic printing press shall collect and record the applicable information specified in this subsection. The information shall be maintained at the facility for a minimum of 5 years and shall be made available to an authorized department representative at any time

during normal working hours. The information required is:

(a) For a heatset web lithographic printing press using a control device, for each day of operation:

1. Control device monitoring data in accordance with s. NR 439.055.

2. A log of the operating time for the control device, control device monitoring equipment, and the associated printing line or operation.

3. A maintenance log for the control device and control device monitoring equipment detailing all routine and non-routine maintenance performed and including the dates and duration of any outages.

(b) For fountain solutions monitored under sub. (5), the fountain solution reservoir temperature for each 8-hour shift of operation.

(c) For each fountain solution used, the percent by weight VOC content as applied, and the CAS number and chemical name of each restricted alcohol.

(d) For each blanket or roller wash, the percent by weight VOC content as applied or the composite partial vapor pressure, as appropriate, in measurement units consistent with the applicable emission limitation.

(e) For each month of operation, the volume of all blanket or roller wash used which does not meet either of the emission limitations in sub. (3)(c).

(7) COMPLIANCE TESTING. (a) The owner or operator of a heatset web lithographic printing press shall demonstrate compliance with the appropriate destruction efficiency or emission rate in sub. (3)(a) by performing compliance emission tests on each control device. The initial emission tests shall be performed by the compliance deadline in sub. (8)(a)1. or (b)1 or 2. Each emission test shall follow the methods and procedures listed in s. NR 439.07. Method 18, 25 or 25A in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04(16), (19) and (20), shall be used to determine the VOC concentration at the sampling points. When determining the VOC concentration, the probe shall be heated during testing to at least the exhaust gas stream temperature.

(b) The owner or operator of a heatset web lithographic printing press shall perform the compliance emission tests required under par. (a) according to one of the following applicable test

schedules:

1. Any facility with allowable VOC emissions from lithographic printing presses of 100 tons or more per year shall perform an emission test which demonstrates compliance with sub. (3)(a) every 24 months. Each biennial test shall be performed within 90 days of the anniversary date of the initial emission test.

2. Any facility with allowable VOC emissions from lithographic printing presses of less than 100 tons per year shall perform an emission test which demonstrates compliance with sub. (3)(a) every 48 months. Each test shall be performed within 90 days of the anniversary date of the initial emission test.

(c) The VOC content of heatset web, sheet-fed and cold set web lithographic inks shall be determined in accordance with NR 439.06(3)(j).

(8) COMPLIANCE SCHEDULE AND CERTIFICATION REQUIREMENTS. (a) *Existing sources*. 1. The owner or operator of a lithographic printing press shall comply with the applicable emission limitations for the dryer exhaust in sub. (3)(a) by May 1, 2010.

2. The owner or operator of a heatset web lithographic printing press shall submit to the department, no later than July 1, 2010, written certification that the press is in compliance with the applicable requirements of subs. (3) to (5) and shall provide a demonstration of compliance in accordance with subs. (6) and (7). A compliance emission test performed in accordance with s. NR 439.07 no more than 2 years prior to the compliance deadline, which demonstrates compliance with sub. (3)(a), is acceptable as a demonstration of compliance in accordance with sub. (7).

(b) *New sources* 1. The owner or operator of a heatset web lithographic printing press which is installed after May 1, 2010 shall perform a compliance emission test within 180 days after installation of the press and shall submit to the department no later than 60 days after the test written certification that the press is in compliance with the applicable requirements of subs. (3) and (6) and a demonstration of compliance in accordance with subs. (7) and (8).

2. The owner or operator of any lithographic printing press, other than a heatset web press, which is installed after May 1, 2010 shall submit to the department, no later than 180 days after installation of

the press, written certification that the press is in compliance with the applicable requirements of subs. (3) and (6) and a demonstration of compliance in accordance with subs. (7) and (8).

SECTION 21. NR 423.02(5m) and (9t) are created to read:

NR 423.02(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.

(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.

SECTION 22. NR 423.035(title), (1)(a) and (b), (2)(intro.), (b)(intro) and 4., (e), (g), (3)(intro.), (6)(a) and (b) and (9)(a) are amended to read:

NR 423.035(title) **Industrial cleaning operations-part 1.**

(1)(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)(intro.) EXEMPTIONS. If ~~an~~ 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. ~~Exemptions include the~~ The following exemptions are applicable to various provisions of this section:

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

4. Facilities ~~where~~ 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.

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

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

(3)(intro.) 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 ~~or~~ 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.

(6)(a) The emission control system has ~~an~~ 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).

(9)(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, 423.04, 423.05, 424.04 or 424.05.

SECTION 23. NR 423.037 is created to read:

NR 423.037 **Industrial cleaning operations-part 2.** (1) APPLICABILITY. 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:

1. Operations regulated under s. NR 421.06(2)(c), 422.075(3), 422.095(6), 422,105(4), 422,115(4), 422.131(3), 422.141(3), 422.142(2)(c), 422.143(4), 422.145(2)(d), 422.15(8), 422.155(3) 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.

4. Cleaning operations associated with the following activities:

a. Aerospace assembly and component coating operations.

b. Wood furniture and products coating, excluding laminated wood products.

c. Coating of marine vessels and components and other structures intended for exposure to a marine environment.

d. Flexible package printing.

e. Lithographic printing.

f. Flat wood panel and wood flat stock coating.

g. Surface coating of large appliances.

h. Furniture metal coating.

i. Paper coating.

j. Film and foil coating.

k. Fabric coating.

L. Plastic parts and products coating.

m. Fiberglass boat manufacturing.

n. Miscellaneous metal parts and products coating.

o. Miscellaneous industrial adhesives use, excluding application equipment.

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.
  - t. Resin application equipment operation, excluding polyester resin application equipment.
  - u. Resin, coating, ink and adhesive mixing and molding equipment operation.
  - v. Architectural coating, excluding application equipment.
  - w. Metal container and closure coating.
  - x. Coil coating.
  - y. Magnet wire coating.
  - z. Semiconductor wafer fabrication operations.
  - za. Coating manufacturing.
  - zb. Ink and adhesive manufacturing.
  - zc. Flexible and rigid disc manufacturing.
  - zd. Polyester resin operations, excluding application equipment.
5. Cleaning operations associated with letterpress printing materials, except for press component cleaning subject to sub. (3)(d)4.

(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 products if 160 fluid ounces or less of VOC-containing aerosol products 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.

(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)
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	
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)
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	0.05 (0.42)
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 – excluding packaging	
a. General	0.05 (0.42)
b. Plastics, coated papers and metal foils	0.89 (7.4)
3. Rotogravure printing - publication	0.10 (0.83)
4. 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)	0.65 (5.4)
(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),

by 3 months after the effective date of this section ... [LRB insert date], the owner or operator of a facility shall employ one or more of the following cleaning devices or methods when using solvents or solvent solutions:

(a) Physically rubbing 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 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 actual daily emissions of VOCs from industrial cleaning operations from the facility with all control equipment inoperative.

(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 5 years unless another time period is approved by the department.

SECTION 24. NR 439.06(3)(j) is amended to read:

NR 439.06(3)(j) Notwithstanding par. (b), Method 24 of 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04(13), shall be used to determine the VOC content of lithographic inks, fountain solutions and blanket or roller wash in complying with ~~s.~~ ss. NR 422.142 and 422.143.

SECTION 25. NR 484.04(16), (19) and (20) are amended to read:

NR 484.04

	<b>CFR Appendix Referenced</b>	<b>Title</b>	<b>Incorporated by Reference For</b>
(16)	40 CFR part 60 Appendix A, Method 18	Measurement of Gaseous Organic Compound Emissions by Gas Chromatography	NR 400.02(77) NR 422.142(5)(a) <u>NR 422.143(7)(a)</u>
(19)	40 CFR part 60 Appendix A, Method 25	Determination of Total Gaseous Nonmethane Organic Emissions as Carbon	NR 422.142(5)(a) <u>NR 422.143(7)(a)</u>
(20)	40 CFR part 60 Appendix A, Method 25A	Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer	NR 422.142(5)(a) <u>NR 422.143(5)(a)</u>

SECTION 26. NR 484.10(9), (12), (14), (21), (32), (36), (56) and (57) are amended to read:

NR 484.10

	<b>Standard Number</b>	<b>Standard Title</b>	<b>Incorporated by Reference For</b>
(9)	ASTM D523-89 (1999)	Standard Test Method for Specular Gloss	<del>ANSI/AHA A135.5-1988</del> <u>ANSI A135.5-2004</u> NR 422.02(49m)
(12)	ASTM D968-93 (2001)	Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive	<del>ANSI/AHA A135.5-1988</del> <u>ANSI A135.5-2004</u>
(14)	ASTM D1037-99	Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials	<del>ANSI/AHA A135.5-1988</del> <u>ANSI A135.4-2004</u> <u>ANSI A135.5-2004</u>
(21)	ASTM D1308-02	Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes	<del>ANSI/AHA A135.5-1988</del> <u>ANSI A135.5-2004</u>
(32)	ASTM D2197-98 (2002)	Standard Test Method for Adhesion of Organic Coatings by Scrape Adhesion	<del>ANSI/AHA A135.5-1988</del> <u>ANSI A135.5-2004</u>
(36)	ASTM D2486-00	Standard Test Method for Scrub Resistance of Wall Paints	<del>ANSI/AHA A135.5-1988</del> <u>ANSI A135.5-2004</u>
(56)	<del>ASTM E84-01</del> <u>ASTM E84-03</u>	Standard Test Method for Surface Burning Characteristics of Building Materials	<del>ANSI/AHA A135.5-1988</del> <u>ANSI A135.5-2004</u>

SECTION 27. NR 484.11(4) is amended to read:

NR 484.11(4) The following are documents from the ~~American Hardboard Association (AHA)~~

American National Standards Institute.

**Note:** Copies may be purchased for personal use from:

~~American Hardboard Association~~

~~1210 W Northwest Highway~~

~~Palatine IL 60067~~

Composite Panel Association

19465 Deerfield Avenue, Suite 306

Leesburg, VA 20176

Telephone: (703) 724-1128

Website: <http://www.pbmdf.com>

or from:

HIS Global Engineering Documents

15 Inverness Way East

Englewood, CO 80112

Telephone: (800) 854-7179

E-mail: [globalcustomerservice@ihs.com](mailto:globalcustomerservice@ihs.com)

Website: <http://global.ihs.com>

<b>Document Number</b>	<b>Title</b>	<b>Incorporated by Reference For</b>
(a) <del>ANSI/AHA A135.4-1982</del> <u>ANSI A135.4-2004</u>	Basic Hardboard	<del>ANSI/AHA A135.5-1988</del> <u>ANSI A135.5-2004</u> <u>NR 422.02(12s)</u>
(b) <del>ANSI/AHA A135.5-1988</del> <u>ANSI A135.5-2004</u>	Prefinished Hardboard Paneling	NR 422.02(13)

SECTION 28. EFFECTIVE DATE. This rule shall take effect on the first day of the month following publication in the Wisconsin administrative register as provided in s. 227.22 (2) (intro.), Stats.

SECTION 29. BOARD ADOPTION. This rule was approved and adopted by the State of Wisconsin Natural Resources Board on \_\_\_\_\_.

Dated at Madison, Wisconsin \_\_\_\_\_.

STATE OF WISCONSIN  
DEPARTMENT OF NATURAL RESOURCES

By \_\_\_\_\_  
Matthew J. Frank, Secretary

(SEAL)