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Chapter NR 422

CONTROL OF ORGANIC COMPOUND EMISSIONS FROM SURFACE COATING, PRINTING AND ASPHALT SURFACING OPERATIONS

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

NR 422.01 Applicability; purpose. (1) APPLICABILITY. This chapter applies to all surface coating and printing process air contaminant sources and to their owners and operators. This chapter also applies to the handling and use of cutback asphalts for application to surfaces traversed by motor vehicles, bicycles or pedestrians and to all persons responsible for such handling and use.

(2) PURPOSE. This chapter is adopted under ss. 285.11, 285.13 and 285.17, Stats., to categorize organic compound emissions from surface coating, printing and asphalt surfacing operations into separate organic compound air contaminant source categories and to establish emission limitations or other requirements for these categories of sources in order to protect air quality.

(3) For a source located in an area that was ever designated nonattainment for ozone that had VOC emissions exceeding the applicability emission thresholds and became subject to the requirements of this chapter, the requirements of this chapter remain applicable notwithstanding any subsequent decrease in VOC emissions to a level below the applicability emission thresholds.

(4) The department may exempt a source from the requirements of this chapter if the source has an approved federally enforceable permit or state implementation plan revision that permanently restricts maximum theoretical emissions to below the applicability emission thresholds listed under this chapter and meets all applicable federal VOC RACT exemption requirements.

Note: "Maximum theoretical emissions" referred to in this chapter is defined under s. NR 419.02 (11).

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NR 422.02 Definitions. Except when another definition is specifically made applicable, the definitions contained in chs. NR 400, 419, and 421 apply to the terms used in this chapter. In addition, except when another definition is specifically made applicable, in this chapter:

(1d) "Acrylonitrile-butadiene-styrene welding" or "ABS welding" means any process to weld acrylonitrile-butadiene-styrene pipe.

(1h) "Adhesion primer" means a coating that is applied to a polyolefin part to promote the adhesion of a subsequent coating and that is clearly identified as an adhesion primer or adhesion promoter on its accompanying material safety data sheet.

(1m) "Adhesion promoter" means a coating designed to facilitate the bonding of a primer or topcoat on surfaces such as trim moldings, door locks and door sills, where sanding is impractical, and on plastic parts and the edges of sanded areas.

(2) "Adhesive" means any substance that is used to bond one surface to another surface by attachment.

(3) "Adhesive primer" means a coating that is applied directly to a substrate in order to seal the substrate and to provide a bonding surface for an adhesive prior to the application of the adhesive.

(3g) "Aerosol adhesive" means an adhesive or adhesive primer packaged as an aerosol product in which the spray mechanism is permanently housed in a non-refillable can designed for handheld application without the need for ancillary hoses or spray equipment.

(3r) "Air assisted airless spray" means a spray coating method that combines compressed air with hydraulic pressure to atomize the coating material into finer droplets than is achieved with pure airless spray. Lower hydraulic pressure is used than with airless spray.

(4) "Air dried coating" means coatings which are dried by the use of air or forced warm air. Forced warm air includes processes whereby the coated object is heated above ambient temperature up to a maximum of 90°C (194°F) to decrease drying time.

(4g) "Airless spray" means a spray coating method in which the coating is atomized by forcing it through a small opening at high pressure and in which the coating liquid is not mixed with air before exiting from the nozzle.

(4r) "Antifoulant coating" means any coating applied to the underwater portion of a pleasure craft to prevent or reduce the attachment of biological organisms and that is registered with EPA

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as a pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act.

(5) "Anti-glare safety coating" means a low gloss coating formulated to eliminate glare for safety purposes on interior surfaces of a vehicle, as specified under the U.S. department of transportation standard for reflecting surfaces in 49 CFR 571.107, as in effect on October 1, 1994.

(6) "Application area" means the area where a coating is applied by spraying, dipping or flow coating techniques.

(7) "Asphalt" means a dark-brown to black cementitious material (solid, semisolid or liquid in consistency) in which the predominating constituents are bitumens which occur in nature as such or which are obtained as residue in refining petroleum.

(7c) "Automatic blanket and roller wash" means any cleaning solution used by the automatic blanket and roller wash cleaning systems associated with lithographic printing presses.

(7e) "Automobile refinishing coating component" means any portion of a coating, such as a reducer or thinner, hardener, additive, etc., recommended, by its manufacturer or importer, to distributors or end-users for automobile refinishing. The raw materials used to produce the components that are mixed by the end-user to prepare a coating for application are not considered automobile refinishing coating components.

(7m) "Automobile refinishing coating importer", "coating component importer" or "importer" means any company, group or individual that brings automobile refinishing coatings or coating components from a location outside the United States into the United States for sale or distribution in the United States.

(7s) "Automobile refinishing coating component manufacturer" or "manufacturer" means any company, group or individual that produces or packages automobile refinishing coatings or coating components for sale or distribution in the United States, including an entity which produces or packages such coating or coating components under a private label for another party.

(7v) "Automotive/transportation plastic parts" means the interior and exterior plastic components of automobiles, trucks, tractors, lawnmowers and mobile equipment intended for primary use on land.

(7y) "Baked coating" means any coating which is cured or dried in an oven where the temperature of the coated object exceeds 90°C (194°F), or any other coating which is not an air dried coating.

(8) "Basecoat" means one of the following:

(a) For the purpose of wood furniture coating, a coat of colored material, usually opaque, that is applied before other inks, coatings or opaque finishing materials and which usually has a topcoat subsequently applied for protection.

(b) For the purpose of plastic parts coating, a coating applied after the prime coat and prior to any other coatings.

(9) "Basecoat-clear coat system" means a topcoat system composed of a pigmented coating followed by a clear coat.

(10) "Baseline transfer efficiency" means the typical transfer efficiency, as defined by the department, for a specific operation in an industry.

(10m) "Black coating" means a coating that meets all of the following criteria:

(a) Maximum lightness: 23 units.

(b) Saturation: less than 2.8, where saturation equals the square root of $A^2 + B^2$.

Note: The criteria under this subsection are based on Cielab color space, 0/45 geometry. For spherical geometry, specular included, maximum lightness is 33 units.

(11) "Blade coating" means the application of a coating material to a substrate by means of drawing the substrate beneath a straight-edged blade that spreads the coating evenly over the full width of the substrate.

(12) "Blanket or roller wash" means any cleaning solvent or solution used to remove excess inks, oils and debris from lithographic or letterpress printing press equipment, including rollers, 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.

(12m) "Business machine plastic parts" means the plastic housings and other exterior plastic components of electronic office equipment and of medical and musical equipment, including computers, monitors, printers and keyboards, facsimile machines, copiers, microfiche readers, cellular and standard phones, and pencil sharpeners. This definition excludes internal electrical components of business machines.

(12o) "Camouflage coating" means a coating used, principally by the military, to conceal equipment from detection.

(12q) "Ceramic tile installation adhesive" means any adhesive intended by the manufacturer for use in the installation of ceramic tiles.

(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).

(13) "Class II hardboard paneling finish" means a finish that meets the specifications of ANSI A135.5-2004, incorporated by reference in s. NR 484.11 (4) (b).

(14) "Cleaning operation" means, for the purpose of wood furniture coating, any activity in which organic solvent is used to remove accumulated coating residue from equipment used in a finishing operation.

(14m) "Cleaning solution" means a liquid solvent or solution used to clean the operating surfaces of a printing press and its parts. "Cleaning solution" includes a blanket wash, a roller wash, a metering roller cleaner, a plate cleaner, an impression cylinder wash, a rubber rejuvenator, and any other cleaner used for cleaning a press or press parts, or to remove spilled ink or coating from areas around the press. "Cleaning solution" does not include janitorial supplies or any cleaner used on electronic components of a press; a pre-press cleaning operation, such as platemaking; a post-press cleaning operation, such as a binding, finishing, or mailroom activity; or cleaning performed in a parts washer or cold cleaner.

(15) "Clear coat" means a coating which lacks color and opacity or is transparent and uses the undercoat as a reflectant base or undertone color.

(15m) "Coating" means a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes, including paints, varnishes, sealants, adhesives, inks, maskants, and temporary protective coatings.

(16) "Coating applicator" means a device or devices used at a single location in a coating line to apply a surface coating of a particular material.

(17) "Coating line" means one or more apparatus or operations, which may include a coating applicator, flashoff area and oven, wherein a surface coating is applied, dried or cured.

(18) "Coil coating" means the coating of any flat metal sheet or strip that comes in rolls or coils.

(19) "Conductive ink" means an ink used in screen printing which contains material that permits electric current to flow through printed lines or patterns.

(19f) (a) "Contact adhesive" means an adhesive that is all of the following:

1. Designed for application to bond 2 surfaces together.

2. Allowed to dry before the 2 surfaces are placed in contact with each other.

3. Forms an immediate bond that is impossible, or difficult, to reposition after both adhesive-coated surfaces are placed in contact with each other.

4. Does not need sustained pressure or clamping of surfaces after the adhesive-coated surfaces have been brought together using sufficient momentary pressure to establish full contact between both surfaces.

(b) "Contact adhesive" does not include any of the following:

1. Rubber cements that are primarily intended for use on paper substrates.

2. Vulcanizing fluids that are designed and labeled for tire repair only.

(19m) "Container" means the individual receptacle that holds a coating or coating component for storage and distribution.

(19s) "Conventional air spray" means a spray coating method in which the coating is atomized by mixing it with compressed air and applied at an air pressure greater than 10 psig at the point of atomization.

Note: Airless and air assisted airless spray technologies are not conventional air spray because the coating is not atomized by mixing it with compressed air. Electrostatic spray technology is also not considered conventional air spray because an electrostatic charge is employed to attract the coating to the work piece.

(19v) "Cove base" means a flooring trim unit, generally made of vinyl or rubber, that has a concave radius on one edge and a convex radius on the opposite edge that is used in forming a junction between the bottom wall course and the floor or to form an inside corner.

(19x) "Cove base installation adhesive" means any adhesive intended by the manufacturer to be used for the installation of cove base or wall base on a wall or vertical surface at floor level.

(20) "Cutback asphalt" means any asphalt which has been liquefied by blending with petroleum solvents (diluents) other than residual oils. Upon exposure to atmospheric conditions the diluents evaporate, leaving the asphalt to perform its function. Asphalt which contains less than 5% by weight petroleum solvents, disregarding any residual oils added, is not included in this definition.

(20m) "Cut-in clearcoat" or "jambing clearcoat" means a fast-drying, ready-to-spray clearcoat applied to surfaces such as door jambs and trunk and hood edges to allow for quick closure.

(20q) "Cyanoacrylate adhesive" means any adhesive with a cyanoacrylate content of at least 95 percent by weight.

(20u) "Dip coating" means a method of applying coatings in which the part to be coated is submerged in a tank filled with the coating.

(20y) "Drum" means any cylindrical metal shipping container larger than 12 gallons capacity but no larger than 110 gallons capacity.

(21) "Elastomeric coating" means a coating that is specifically formulated for application over flexible parts such as filler panels and elastomeric bumpers.

(21d) "Electric dissipating coating" means a coating that rapidly dissipates a high voltage electric charge.

(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.

(21j) "Electric-insulating varnish" means a non-convertible-type coating applied to electric motors, components of electric motors, or power transformers, to provide electrical, mechanical, and environmental protection or resistance.

(21m) "Electromagnetic interference/radio frequency interference (EMI/RFI) shielding coating" means a coating used on business machine plastic housings to attenuate electromagnetic and radio frequency interference signals that would otherwise pass through the plastic housing.

(22) "Electrostatic application" means a coating method in which an electrical charge is applied to the object coated and the airborne particles of coating are attracted to the object due to the electrostatic potential created.

(22m) "Electrostatic prep coating" means a coating that is applied to a plastic part solely to provide conductivity in order to use electrostatic application methods for coatings.

Note: An electrostatic prep coating usually is clearly identified as an electrostatic prep coating on its accompanying material safety data sheet.

(23) "Emergency response vehicle" means any motor vehicle specifically designed to carry equipment and personnel involved in providing emergency medical or rescue services.

(25) "End sealing compound" means a synthetic rubber compound which is coated onto can ends and which functions as a gasket when the end is assembled on the can.

(25g) "EPDM roof membrane" means a prefabricated single sheet of elastomeric material composed of ethylene propylene diene monomer and that is field applied to a building roof using one layer or membrane material.

(25r) "Etching filler" means a coating that contains less than 23 percent solids by weight and at least 0.5 percent acid by weight and is used instead of applying a pretreatment coating followed by a primer.

(26) "Exterior base coating" means a coating applied to the exterior of a can to provide exterior protection to the metal and to provide background for the lithographic or printing operation.

(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.

(27) "Extreme performance coatings" means coatings designed for harsh exposure or exposure to one or more of the following: the weather all of the time, temperatures consistently above 95°C, detergents, abrasive and scouring agents, solvents, corrosive atmospheres or similar environmental conditions.

(28) "Fabric coating" means applying a coating, including a saturation coating, or printing on to a textile substrate with a blade, roll, rotogravure or dip coater, or other coating applicator, to impart properties that are not initially present, such as strength, stability, water or acid repellency, or appearance.

(29) "Field-reacted traffic marking material" means a liquid traffic marking material, such as epoxy or polyester, which consists of resin, pigments and a hardening agent, and which is mixed at the time of application and designed to harden quickly.

(30) "Final touch-up and repair" means, for the purpose of wood furniture coating, the localized application of finishing materials after the finishing operation to cover minor imperfections.

(31) "Finishing material" means, for the purpose of wood furniture coating, coatings used to finish wood furniture, including, but not limited to, basecoats, stains, washcoats, sealers and topcoats. The term "finishing material" does not include industrial adhesives.

(32) "Finishing operation" means, for the purpose of wood furniture coating, the application of finishing material to a substrate that is subsequently air dried, cured by radiation, or cured

in an oven and the use of organic solvent in associated cleaning and washoff operations.

(32m) "Finish primer surfacer" means a coating applied with a wet film thickness of less than 10 mils prior to the application of a topcoat for purposes of providing corrosion resistance, adhesion of subsequent coatings, a moisture barrier, or promotion of a uniform surface necessary for filling in surface imperfections.

(33) "Fire truck" means any motor vehicle specifically designed to be used in fighting fires and to carry equipment and personnel involved in fighting fires.

(34) "Flashoff area" means the space between the application area and the oven.

(34d) "Flexible coating" means a coating that is required to comply with engineering specifications for impact resistance, mandrel bend, or elongation, as those terms are defined by the original equipment manufacturer.

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

(34r) "Flexible packaging printing" means printing on any package or part of a package the shape of which can be readily changed such as bags, pouches, liners, and wraps utilizing paper, plastic, aluminum foil, metalized or coated paper or film, or any combination of these materials using a flexible packaging press.

(34v) "Flexible vinyl" means non-rigid polyvinyl chloride plastic with a 5 percent by weight plasticizer content.

(35) "Flexographic printing" means the application of words, designs or pictures to a substrate by means of a roll printing technique in which the pattern to be applied is raised above the printing roll and the image carrier is made of rubber or other elastomeric materials.

(36) "Flow coating" means a coating method in which an object is coated by causing a stream of coating to flow over the object and draining off any excess coating.

(36m) "Fog coat" means a coating that is applied to a plastic part for the purpose of color matching without masking a molded-in texture and that is not applied at a thickness of more than 0.5 mils of coating solids.

(37) "Fountain solution" means a mixture of water, volatile and nonvolatile chemicals and other additives which is applied to the image plate to maintain the hydrophilic properties of the nonimage areas of the printing plate surface.

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

(38) "Furniture metal coating" means the surface coating of any furniture made of metal or any metal part which will be assembled with other metal, wood, fabric, plastic or glass parts to form a furniture piece.

(38m) "Gloss reducer" means a coating that is applied to a plastic part solely to reduce the shine of the part and that is not applied at a thickness of more than 0.5 mils of coating solids.

(39) "Hardboard" means a panel manufactured primarily from interfelted ligno-cellulosic fibers which are consolidated under heat and pressure in a hot press.

(39m) "Hardener" means a coating component specifically designed to promote a faster cure of an enamel finish.

(40) "Hardwood plywood" means a plywood whose surface layer is a veneer of hardwood.

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

(41) "Heatset" means a lithographic web printing process where solvents from the printing ink are evaporated by heat from a dryer.

(41e) "High bake" means a coating that is designed to cure only at temperatures of more than 194°F.

(41m) "High build primer surfacer" means a coating applied with a wet film thickness of 10 mils or more prior to the application of a topcoat for any of the following purposes:

(a) Providing corrosion resistance.

(b) Providing adhesion of subsequent coatings.

(c) Providing a moisture barrier.

(d) Promoting a uniform surface necessary for filling in surface imperfections.

(41s) "High gloss coating" means a coating that achieves at least 85 percent reflectance on a 60° glossmeter when tested by ASTM D523-89, incorporated by reference under s. NR 484.10 (9).

(42) "High performance architectural coatings" means a coating which meets the requirements specified in American architectural manufacturers association publication number AAMA 2604-98, incorporated by reference in s. NR 484.11 (1).

(42d) "High temperature coating" means a coating that is certified to withstand a temperature of 1000°F for 24 hours.

(42h) "High-volume, low-pressure spray" means equipment used to apply coatings by means of a spray gun that operates between 0.1 and 10 psig air pressure.

Note: High-volume, low-pressure is also referred to as HVLP.

(42m) "Impact-resistant coating" means a coating designed to resist chipping caused by road debris.

(42s) (a) "Indoor floor covering installation adhesive" means any adhesive intended by the manufacturer for use in the installation of wood flooring, carpet, resilient tile, vinyl tile, vinyl backed carpet, resilient sheet and roll, or artificial grass.

(b) "Indoor floor covering installation adhesive" does not include an adhesive used to install ceramic tile and perimeter bonded sheet flooring with vinyl backing onto a non-porous substrate, such as flexible vinyl.

(43) "Ink transfer" means a decal, printed using screen printing onto a special release carrier, that will be transferred from the carrier to a substrate. Final transfer of the decal to the substrate may or may not occur at the screen printing facility.

(44) "Interior body spray" means a coating sprayed on the interior of the can body to provide a protective film between the product and the can.

(45) "Interior sheet base coating" means a coating applied by roller coater or spray to the interior side of sheets from which cans are formed to provide a protective lining between the can metal and product.

(45e) "Janitorial supplies" means cleaners, including detergent-based products, used for floor cleaning and other general cleaning purposes, except for those products used to clean spilled ink.

(45m) "Lacquer" means a thermoplastic coating which dries primarily by solvent evaporation and which is resoluble in its original solvent.

(45s) "Laminate" means a product made by bonding together 2 or more layers of material.

(46) "Large appliances" means doors, cases, lids, panels and interior support parts of residential and commercial washers, dryers, ranges, refrigerators, freezers, water heaters, dishwashers, trash compactors, air conditioners and other similar products. Not included are products of such weight that they are normally

lifted only with powered lifting equipment or products which are intended to be permanently fastened in place.

(47) "Leather coating" means the coating of any raw or processed leather material with a roll coater, spray system or other coating applicator to impart or enhance properties such as strength, stability, water or acid repellency, color or appearance.

(48) "Lithographic printing" means a planographic printing process where the image and nonimage areas are chemically differentiated; the image area is oil receptive and the nonimage area is typically water receptive.

(49) "Lithographic printing press" means a printing production assembly comprised of one or more inking and fountain solution dampening systems and includes any associated cleaning solutions, ovens, dryers, flashoff areas and chillers.

(49m) "Low-gloss coating" means a coating which exhibits a gloss reading of less than or equal to 25 on a 60-degree glossmeter, as measured according to ASTM D523-89, incorporated by reference in s. NR 484.10 (9).

(50) "Low-pressure spray method" means any coating method in which an object is coated with an air-atomizing spray gun that operates at no more than 69 kPa (10.0 psig) air pressure.

(51) "Low solvent coating or ink" means a coating or ink which contains less organic solvent than the conventional coatings used by the particular industry. Low solvent coatings or inks include waterborne, higher solids, electrodeposition and powder coatings or inks.

(52) "Magnet wire coating" means the process of applying a coating of electrically insulating varnish or enamel to aluminum or copper wire for use in electrical machinery.

(53) "Manufacturing plant" means a facility where parts are manufactured, finished or assembled for eventual inclusion into a finished product ready for sale to retailers. With respect to the manufacture of motor vehicles, customizers, body shops and other repainters are not included in this definition.

(53e) "Mask coating" means a strippable coating used as a mask during the coating of a part or surface.

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

(53j) "Metal to urethane/rubber molding or casting adhesive" means any adhesive intended by the manufacturer to bond metal to high density or elastomeric urethane or molded rubber materials, in heater molding or casting processes, to fabricate products such as rollers for computer printers or other paper handling equipment.

(53k) "Military specification coating" means a coating that has a formulation approved by a United States military agency for use on military equipment.

(53m) "Mixing instructions" means the coating or coating component manufacturer's or importer's specification of the volumetric quantities of coating.

(53s) "Mobile equipment" means any equipment which may be drawn or is capable of being driven on a roadway, other than motor vehicles, including truck or automobile trailers, farm machinery, construction equipment, street cleaners and golf carts.

(54) "Molded wood parts or products" means any composite shape molded, through heat, pressure and time, from a mixture of less than 30% by weight organic thermoset resin, and at least 10% by weight wood filler.

(54a) "Mold seal coating" means the initial coating applied to a new mold or a repaired mold to provide a smooth surface that, when coated with a mold release coating, prevents products from sticking to the mold.

(54b) "Motor vehicle adhesive" means an adhesive, including glass bonding adhesive, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied for the purpose of bonding 2 vehicle surfaces together without regard to the substrates involved.

(54c) "Motor vehicle bedliner" means a multi-component coating, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to a cargo bed after the application of topcoat to provide additional durability and chip resistance.

(54d) "Motor vehicle cavity wax" means a coating, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied into the cavities of a vehicle primarily for the purpose of enhancing corrosion protection.

(54e) "Motor vehicle deadener" means a coating, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to selected vehicle surfaces primarily for the purpose of reducing the sound of road noise in the passenger compartment.

(54f) (a) "Motor vehicle gasket/gasket sealing material" means a fluid, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to coat a gasket or replace and perform the same function as a gasket.

(b) "Motor vehicle gasket/gasket sealing material" includes room temperature vulcanization seal material.

Note: Room temperature vulcanization is also referred to as RTV.

(54g) (a) "Motor vehicle glass bonding primer" means a primer, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to a windshield or other glass, or to body openings, to prepare the glass or body opening for the application of glass bonding adhesives or the installation of adhesive bonded glass.

(b) "Motor vehicle glass bonding primer" includes a glass bonding or cleaning primer that cleans and primes a windshield or other glass, or body openings, prior to the application of adhesive or the installation of adhesive bonded glass.

(54h) "Motor vehicle lubricating wax/compound" means a protective lubricating material, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to vehicle hubs and hinges.

(54i) "Motor vehicle sealer" means a high viscosity material, used at a facility that is not an automobile or light-duty truck assembly coating facility, generally applied in a paint shop after the body has received an electrodeposition primer coating and before the application of subsequent coatings, such as primer-surfacer, that has a primary purpose of filling body joints completely so that there is no intrusion of water, gases, or corrosive materials into the passenger area of the body compartment.

Note: Motor vehicle sealers are also referred to as sealants, sealant primers, or caulks.

(54j) "Motor vehicle trunk interior coating" means a coating, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to the trunk interior to provide chip protection.

(54k) "Motor vehicle underbody coating" means a coating, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to the undercarriage or firewall to prevent corrosion or provide chip protection, or both.

(54L) "Motor vehicle weatherstrip adhesive" means an adhesive, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to weatherstripping materials

for the purpose of bonding the weatherstrip material to the surface of the vehicle.

(54o) "Multi-colored coating" means a coating that exhibits more than one color when applied and that is packaged in a single container and applied in a single coat.

(54p) "Multi-colored topcoat" means a topcoat that exhibits more than one color, is packaged in a single container, and camouflages surface defects on areas of heavy use, such as cargo beds and other surfaces of trucks and other utility vehicles.

(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.

(54y) "Multipurpose construction adhesive" means an adhesive intended by the manufacturer for use in the installation or repair of various construction materials, including drywall, subfloor, panel, fiberglass reinforced plastic, ceiling tile, and acoustical tile.

Note: Fiberglass reinforced plastic is also referred to as FRP.

(55) "Natural finish hardwood plywood panels" means panels whose original grain pattern is enhanced by essentially transparent finishes which may be supplemented by fillers and toners.

(56) "Non-heatset" means a lithographic printing process where the printing inks are set without the application of heat. Ultraviolet-cured and electron beam-cured inks are considered non-heatset.

(57) "Office partitions" means partitions fabricated from honeycomb laminate or wood laminate which is placed inside a steel base support frame with a final outside covering of vinyl, cloth or laminate.

(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.

(57s) "Optical coating" means a coating applied to an optical lens.

(58) "Organisol" means a thick coating containing resin, plasticizers and organic solvent used to coat flexible substances such as paper or fabrics.

(58m) "Outdoor floor covering installation adhesive" means an adhesive intended by the manufacturer for use in the installation of floor covering that is not in an enclosure and that is exposed to ambient weather conditions during normal use.

(59) "Oven" means, for the purpose of surface coating, a chamber within which heat is used to bake, cure, polymerize or dry a surface coating.

(60) "Overvarnish" means a coating applied directly over ink to reduce the coefficient of friction, to provide gloss and to protect the finish against abrasion and corrosion.

(61) "Packaging rotogravure printing" means rotogravure printing upon paper, paper board, metal foil, plastic film or other substrates, which in subsequent operations are formed into packaging products or labels for articles to be sold.

(61m) "Pad printing" means, for the purpose of plastic parts coating, a type of printing used on irregularly shaped substrates, in which the image is transferred from a metal or plastic photoengraved or intaglio plate called a cliche, to an intermediate silicon rubber pad and, ultimately, to the substrate. Ink is supplied to the engraved portions of the cliche after each impression.

(61s) "Pan-backing coating" means a coating applied to the surface of pots, pans, or other cooking implements that are exposed directly to a flame or other heating elements.

(62) "Paper coating" means application of the uniform coatings, including saturation coatings, put on paper and pressure sensitive tape in a web process. Related web coating processes on plastic films and on metal foil are included in this definition but processes such as printing where the coating is not uniform across the web are not included.

(63) "Penetrating prime coat" means an application of low-viscosity liquid asphalt to an absorbent surface to prepare it for an asphalt surface.

(63m) "Perimeter bonded sheet vinyl floor covering installation" means the installation of sheet flooring with vinyl backing onto a nonporous substrate using an adhesive designed to be applied only to a strip of up to 4 inches wide around the perimeter of the sheet flooring.

(64) "Pigmented coating" means an opaque coating which contains binders and colored pigments and which is formulated to hide a surface, either as an undercoat or topcoat.

(64g) "Plastic" means a synthetic material chemically formed by the polymerization of carbon-based substances that is usually compounded with modifiers, extenders, or reinforcers and is capable of being molded, extruded, cast into various shapes and films, or drawn into filaments.

(64m) "Plastic part" means a piece made from a substance that has been formed from resin through application of pressure or heat or both.

(64q) "Plastic solvent welding adhesive" means an adhesive intended by the manufacturer for use to dissolve the surface of plastic to form a bond between mating surfaces.

(64u) "Plastic solvent welding adhesive primer" means a primer intended by the manufacturer for use to prepare plastic substrates prior to bonding or welding.

(65) "Plastisol" means a composition of finely divided resin and plasticizer used to coat flexible substances such as paper or fabrics which is applied as a thick gel which solidifies when heated.

(65e) "Pleasure craft" is a vessel that is manufactured or operated primarily for recreational purposes, or leased, rented, or chartered to a person or business for recreational purposes.

(65m) "Pleasure craft coating" means a marine coating, except unsaturated polyester resin or fiberglass coatings, applied by brush, spray, roller, or other means to a pleasure craft.

(65s) (a) "Porous material" means a substance that has tiny openings, often microscopic, in which fluids may be absorbed or discharged, including paper and corrugated paperboard.

(b) "Porous material" does not include wood.

(66) "Precoat" means any coating which is applied to bare metal primarily to deactivate the metal surface for corrosion resistance to a subsequent water-base prime coat.

(66m) "Prefabricated architectural component coating" means a coating applied to metal parts and products that are to be used as part of an architectural structure.

(67) "Pretreatment coat" means a coating applied directly to metal substrates and which contains at least 0.50% acid, by weight, and is used to provide surface etching, corrosion resistance and enhanced adhesion of subsequent coatings.

(67m) "Pretreatment wash primer" means a primer that is applied directly to metal substrates and which contains at least 0.50% acid by weight, as measured according to ASTM D1613-02, incorporated by reference in s. NR 484.10 (25m), and is used to provide surface etching, corrosion resistance and enhanced adhesion of subsequent coatings.

(68) "Prime coat" means a coating applied directly to a substrate or on top of a pretreatment wash primer or other coating for purposes of filling pores in the substrate, providing corrosion resistance or enhancing adhesion or blister resistance of subsequent coatings.

(69) "Prime pigments" means pigments or solids which contribute to the overall coating color. Pigments whose main function is to act as a filler or provide corrosion resistance rather than providing color are not prime pigments.

(70) "Primer sealer" means any coating, applied subsequent to the prime coat or primer surfacer, and prior to the application of a topcoat, that improves the adhesion of the topcoat, provides corrosion resistance and prevents solvents from the topcoats from penetrating into the prime coat or primer surfacer coating.

(71) "Primer surfacer" means a coating which fills in irregularities, and is intentionally thick enough to permit sanding without cutting through to bare metal.

(72) "Printed interior panels" means panels whose grain or natural surface is obscured by fillers and basecoats upon which a simulated grain or decorative pattern is printed.

(73) "Publication rotogravure printing" means rotogravure printing upon paper which is subsequently formed into books, magazines, catalogues, brochures, directories, newspaper supplements, and other types of printed materials.

(74) "Quench area" means a chamber where the hot metal exiting the oven is cooled by either a spray of water or a blast of air followed by water cooling.

(74m) "Red coating" means a coating that meets all of the following criteria:

(a) Yellow limit: the hue of hostaperm scarlet.

(b) Blue limit: the hue of monastral red-violet.

(c) Lightness limit for metallics: 35 percent aluminum flake.

(d) Lightness limit for solids: 50 percent titanium dioxide white.

(e) Solid reds: hue angle of -11 to 38 degrees and maximum lightness of 23 to 45 units.

(f) Metallic reds: hue angle of -16 to 35 degrees and maximum lightness of 28 to 45 units.

Note: The criteria under this subsection are based on Cielab color space, 0/45 geometry. For spherical geometry, specular included, the upper limit is 49 units. The maximum lightness varies as the hue moves from violet to orange. This is a natural consequence of the strength of the colorants, and real colors show this effect.

(75) "Refinishing" means any coating of motor vehicles, their parts and components, including parts or components replaced in body collision repairs, for the purpose of protection or beautification and which is subsequent to the original coating applied at the plant where the equipment was manufactured.

(75g) "Reflective argent coating" means a silver-colored coating that will reflect light.

(75m) "Reinforced plastic composite" means a composite material consisting of plastic reinforced with fibers.

(75r) "Resist coating" means a coating that is applied to a plastic part before metallic plating to prevent deposits of metal on portions of the plastic part.

(76) "Restricted alcohol" means an alcohol which contains only one hydroxyl (-OH) group and less than 5 carbon atoms.

(77) "Roll coating" means the application of a coating material to a substrate by means of rollers.

(78) "Roll printing" means the application of words, designs or pictures to a substrate, usually by means of a series of hard rubber or steel rolls each with only partial coverage.

(79) "Rotogravure coating" means the application of a coating material to a substrate by means of a roll coating technique in which the pattern to be applied is etched on the coating roll. The coating material is transferred to the substrate from the recessed areas on the coating roll.

(80) "Rotogravure printing" means the application of words, designs or pictures to a substrate by means of a roll printing technique which involves an intaglio or recessed image areas in the form of cells.

(80f) "Rubber" means any natural or manmade rubber substrate, including styrene-butadiene rubber, polychloroprene, butyl rubber, nitrile rubber, chlorosulfonated polyethylene, and ethylene propylene diene terpolymer.

Note: Polychloroprene is also referred to as neoprene.

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

(81) "Saturation coating" means application of a coating which permeates the substrate to which it is applied.

(82) "Screen printing" means a process in which ink or coating is passed through a taut screen mesh or fabric, to which a refined form of stencil has been applied, onto a substrate. The stencil openings determine the form and dimensions of the imprint made on the substrate.

(83) "Screen printing unit" means a printing application station and its associated flashoff area, ovens or dryers, conveyors or other equipment operating as part of the screen printing process. Industrial cleaning operations, including screen reclamation, are considered to be part of the screen printing process.

(85) "Sealer" means, for the purpose of wood furniture coating, any coating applied to substrates to prevent subsequent coatings from being absorbed by the substrate, or to prevent harm to subsequent coatings by materials in the substrate.

(85m) "Sensitizer coating" means a coating that is applied to a plastic part before metallic plating to promote deposits of metal on portions of the plastic part.

(86) "Sheet-fed" means a lithographic printing process where individual sheets of substrate are fed to the press sequentially.

(86e) (a) "Sheet rubber lining installation" means the process of applying sheet rubber liners by hand to metal or plastic substrates to protect the underlying substrate from corrosion or abrasion.

(b) "Sheet rubber lining installation" includes laminating sheet rubber to fabric by hand.

(86m) "Shock-free coating" means a coating applied to electrical components to protect the user from electric shock that has characteristics of being of low capacitance and high resistance and is resistant to breaking down under high voltage.

(86s) "Silicone release coating" means a coating that contains silicone resin and is intended to prevent food from sticking to metal surfaces, such as baking pans.

(87) "Single coat" means a single film of coating applied directly to a metal substrate, omitting the primer application.

(87d) (a) "Single-ply roof membrane" means a prefabricated single sheet of rubber, normally ethylene propylene diene terpolymer, that is field applied to a building roof using one layer of membrane material.

(b) "Single-ply roof membrane" does not include a membrane prefabricated from ethylene propylene diene monomer.

(87h) "Single-ply roof membrane adhesive primer" means a primer labeled for use to clean and promote adhesion of single-ply roof membrane seams or splices prior to bonding.

(87L) (a) "Single-ply roof membrane installation and repair adhesive" means an adhesive labeled for use in the installation or repair of single-ply roof membrane.

(b) In this subsection:

1. "Installation" includes, as a minimum, attaching the edge of the membrane to the edge of the roof and applying flashings to vents, pipes, and ducts that protrude through the membrane.

2. "Repair" includes gluing the edges of torn membrane together, attaching a patch over a hole, and reapplying flashings to vents, pipes, or ducts installed through the membrane.

(87m) "Single-stage coating" means a topcoat consisting of only one coating.

(87s) "Soft coating" means any coating that provides a soft tactile feel and appearance similar to surfaces such as leather when applied to plastic parts.

(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.

(88) "Special purpose screen printing inks and coatings" means inks and coatings used in screen printing which are conductive inks, are used to print ink transfers, or are designed to resist or withstand any of the following:

(a) More than 2 years of outdoor exposure.

(b) Exposure to chemicals, solvents, acids, detergents, oil products or cosmetics.

(c) Temperatures in excess of 170° F.

(d) Vacuum forming.

(e) Embossing.

(f) Molding.

(89) "Specialty coating" means one of the following:

(a) For the purpose of automobile refinishing operations, coatings used only for discrete portions of the vehicle, such as bumpers or spot repairs, which are necessary due to unusual coating performance requirements. Specialty coatings include adhesion promoters, uniform finish blenders, elastomeric coatings, gloss flatteners, bright metal trim repair, jambing (cut-in) clear coats, impact resistant coatings, underbody coatings, weld-through primers and anti-glare safety coatings.

(b) For the purpose of plastic parts coating under s. NR 422.083, coatings used for unusual job performance requirements. These products include adhesion primers, soft coatings, reflective argent coatings, electrostatic prep coatings, headlamp lens coatings, pad printing coatings, stencil coatings, vacuum metallizing coatings, anti-glare safety coatings, resist coatings and sensitizer coatings.

(90) "Stain" means, for the purpose of wood furniture coating, any color coat having a solids content of no more than 8.0%, by weight.

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

(90r) "Sterilization indicating ink" means an ink that changes color to indicate that sterilization has occurred.

(91) "Stripe-kilometer" means one 10-centimeter-wide solid stripe of traffic marking material that is 1.0 kilometer long.

(92) "Stripe-mile" means one 4-inch-wide solid stripe of traffic marking material that is 1.0 mile long.

(93) "Strippable spray booth coating" means, for the purpose of wood furniture coating, a coating that is applied to a spray booth wall as a protective film to receive overspray during finishing operations and that is subsequently peeled off, thereby reducing or eliminating the need to use organic solvents to clean spray booth walls.

(93m) "Structural glazing" means a process that includes the application of adhesive to bond glass, ceramic, metal, stone, or composite panels to exterior building frames.

(94) "Surface coating" means the application of a coating to a product in a coating line.

(95) "Surface preparation products" means products used to remove wax, tar, grease and silicone from the surface to prepare the surface for refinishing.

(95m) "Texture coating" means a coating applied to a plastic part that provides an irregular finished surface such as one that is rough or grainy.

(95s) "Thin metal laminating adhesive" means an adhesive intended by the manufacturer for use in bonding multiple layers of metal to metal or metal to plastic in the production of electronic or magnetic components in which the thickness of the bond line is less than 0.25 millimeters.

(96) "Thin particleboard" means a manufactured board 0.64 centimeters (¼ inch) or less in thickness made of individual wood particles which have been coated with a binder and formed into flat sheets by pressure.

(96m) "Thinner" means any solvent used to reduce the viscosity or solids content of a coating.

(97) "Three or 4 stage coating system" means a topcoat system composed of a pigmented coating, one or 2 semi-transparent midcoats, and a clear coat.

(98) "Three-piece can side-seam spray" means a coating sprayed on the exterior and interior of a welded, cemented or soldered seam to protect the exposed metal.

(99) "Tileboard" means paneling that has a colored waterproof surface coating.

(100) "Tinted pigmented coating" means a pigmented coating which contains less than 99.5% by weight white prime pigment as a percentage of all prime pigments.

(100m) "Tire repair" means a process that includes expanding a hole, tear, fissure, or blemish in a tire casing by grinding or gouging, applying adhesive, and filling the hole or crevice with rubber.

(101) "Topcoat" means a coating or coating system in which one or more coats are applied over a prime coat or basecoat for purposes of appearance, identification or protection of the substrate.

(102) "Touch-up and repair coating" means a coating applied to repair minor surface damage and imperfections, after normal coating operations have been completed.

(103) "Traffic marking material" means any substance, either solid or liquid at time of application, used to provide lane delineation or other traffic guidance or information on paved surfaces. Markings provided by traffic marking material include, but are not limited to, centerlines, edgelines, lane lines, turn arrows, parking stall markings, crosswalks, curb markings, railroad markings and airport taxi and runway markings.

(104) "Transfer efficiency" means the portion of coating solids which adheres to the surface being coated during the application process, expressed as a percentage of the total volume of coating solids delivered to the applicator.

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(104m) "Translucent coating" means a coating that contains binders and pigment and is formulated to form a colored, but not opaque, film.

(105) "Two-piece can exterior end coating" means a coating applied by roller coating or spraying to the exterior end of a can to provide protection to the metal.

(105g) "Two-stage topcoat" means a topcoat consisting of a pigmented basecoat and a transparent clearcoat.

(105r) "Underbody coating" means a coating designed for protection and sound deadening that is typically applied to the wheel wells and underbody of an automobile.

(106) "Uniform finish blender" means a thinner or low solids clear solution which is used to blend overspray from a repaired area into the unrepaired color.

(106m) "Vacuum metallizing" means a process whereby metal is vaporized and deposited on a substrate in a vacuum chamber.

(106s) "Vacuum metalizing coating" means the undercoat applied to the substrate on which the metal is deposited or the overcoat applied directly to the metal film.

(107) "Vinyl coating" means printing on or applying a decorative or protective topcoat, other than vinyl plastisols or organisols, to vinyl or urethane coated fabric or vinyl or urethane sheets.

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

(108) "Washcoat" means, for the purpose of wood furniture coating, a transparent coating having a solids content, by weight, of 12.0% or less applied over initial stains to protect and control color and prepare the wood for sanding.

(109) "Washoff operation" means, for the purpose of wood furniture coating, the process of using an organic solvent to remove coating from a substrate.

(109m) "Water hold-out coating" means a coating applied to the interior cavity areas of doors, quarter panels and rocker panels for the purpose of corrosion resistance to prolonged water exposure.

(109s) "Waterproof resorcinol glue" means a 2-part resorcinol-resin-based adhesive designed for applications in which the bond line must be resistant to conditions of continuous immersion in fresh or salt water.

(110) "Web" means a substrate onto which inks or coatings are applied after the substrate is unwound from a continuous roll and prior to the substrate being rewound or cut.

(110m) "Weld-through primer" means a primer that is applied to an area before welding is performed and that provides corrosion resistance to the surface after welding has been performed.

(111) "White pigmented coating" means a pigmented coating which contains 99.5% or more by weight white prime pigment as a percentage of all prime pigments.

(112) "Wood furniture" means any wood product that is within one of the following standard industrial classification codes, as described in the Standard Industrial Classification Manual, 1987, incorporated by reference in s. NR 484.05 (1):

(a) 2434—wood kitchen cabinets.

(b) 2511—wood household furniture, except upholstered.

(c) 2512—wood household furniture, upholstered.

(d) 2517—wood television, radio, phonograph and sewing machine cabinets.

(e) 2519—household furniture, not elsewhere classified.

(f) 2521—wood office furniture.

(g) 2531—public building and related furniture.

(h) 2541—wood office and store fixtures, partitions, shelving and lockers.

(i) 2599—furniture and fixtures, not elsewhere classified.

History: Renum. from NR 154.01, Register, September, 1986, No. 369, eff. 10-1-86; cr. (24m), Register, January, 1987, No. 373, eff. 2-1-87; cr. (21m), Register, July, 1988, No. 391, eff. 8-1-88; cr. (12m), (16m) and (33m), am. (34) and (47), Register, August, 1989, No. 404, eff. 9-1-89; renum. (6) to be NR 400.02 (21m), am. (16), (32) (33m) and (50), cr. (28m), (33g) and (41m), (12s) renum. from NR 400.02 (36), Register, February, 1990, No. 410, eff. 3-1-90; am. (7), Register, May, 1992, No. 437, eff. 6-1-92; am. (50), Register, December, 1993, No. 456, eff. 1-1-94; cr. (11m), (21s), (41p), (41s), (41v) and (42m), am. (32), Register, June, 1994, No. 462, eff. 7-1-94; cr. (16e), (42q), (42s) and (47m), Register, July, 1994, No. 463, eff. 8-1-94; am. (7) and (34), cr. (12e), (18m), (24s), (27m), (33d), (34m), (46m) and (51), Register, August, 1994, No. 464, eff. 9-1-94; cr. (6), (18s), (21e), (24p), (24q), (28g), (37v), (41y) and (50v), Register, June, 1995, No. 474, eff. 7-1-95; am. (intro.) and (47), renum. (1) to be (1s), cr. (1), (1e), (1m), (1x), (3e), (3m), (7m),(12d), (16g), (16i), (16k), (28j), (33j), (34s), (34v), (37s), (41w), (42n), (42o), (42u), (43m), (44m), (47e), (49m), (50e), (50m) and (52), Register, August, 1995, No. 476, eff. 9-1-95; correction in (22) and (23) made under s. 13.93 (2m) (b) 1., Stats., Register, August, 1995, No. 475; renum. (1e) to (52) to be (2) to (112) and am. (13), (20) and (42), Register, December, 1995, No. 480, eff. 1-1-96; r. (24), am. (89), Register, December, 1996, No. 492, eff. 1-1-97; am. (42), Register, October, 1999, No. 526, eff. 11-1-99; am. (1), (68), (70), (89) and (102), cr. (7e), (7m), (7s), (19m), (20m), (39m), (42m), (45m), (49m), (53m), (54m), (67m), (87m), (96m), (105g), (105r), (109m) and (110m), Register, January, 2001, No. 541, eff. 2-1-01; CR 00-160: cr. (19s); CR 00-174: am. (5), (8), and (89), cr. (7v), (7y), (12m), (21m), (22m), (53e), (53s), (61m), (64m), (75g), (75r), (85m), (87s), (90m), (95m), and (106m), Register August 2001 No. 548, eff. 9-1-01; corrections in (49m) and (67m) made under s. 13.93 (2m) (b) 7., Stats., Register August 2001 No. 548; CR. 02-146: am. (67m) Register October 2003 No. 574, eff. 11-1-03; correction in (13), (49m) and (112), made under s. 13.93 (2m) (b) 7., Stats., Register October 2003 No. 574; CR 08-102: am. (12), (13), (77), (90m) and (102), cr. (12s), (21g), (26m), (34g), (34r), (37m), (40m), (53i), (54s), (57m), (80m), (87v), (87x) and (107m) Register July 2009 No. 643, eff. 8-1-09; CR 11-005: am. (12), (34g), (34r), (83), r. (84), cr. (90r) Register January 2012 No. 673, eff. 2-1-12; CR 18-067: cr. (7c), (14m), (45e) Register June 2019 No. 762, eff. 7-1-19; CR 20-088: am. (intro.), renum. (1) to (1m), cr. (1d), (1h), (3g), (3r), (4g), (4r), (10m), (12o), (12q), (15m), (19f), (19v), (19x), (20q), (20u), (20y), (21d), (21j), (25g), (25r), (32m), (34d), (34v), (36m), (38m), (41e), (41m), (41s), (42d), (42h), (42s), (45s), (53j), (53k), (54a), (54b), (54c), (54d), (54e), (54f), (54g), (54h), (54i), (54j), (54k), (54L), renum. (54m) to (54p), cr. (54o), (54y), (57s), (58m), (61s), (63m), (64g), (64q), (64u), (65e), (65m), (65s), (66m), (74m), (75m), (80f), (86e), (86m), (86s), (87d), (87h), (87L), (93m), (95s), (100m), (104m), (106s), (109s) Register May 2022 No. 797, eff. 6-1-22; correction in (54g) (a) made under s. 35.17, Stats., Register May 2022 No. 797.

NR 422.03 Exemptions. Sections NR 422.04 to 422.155 apply to any facility that contains one or more of the surface coating or printing process lines described in ss. NR 422.05 to 422.155, except as specified in this section. Exempt facilities are subject to the recordkeeping requirements of s. NR 439.04 (4). Exemptions include any of the following:

(1) Any surface coating process line which meets the specific applicability requirements of s. NR 422.07, 422.10, 422.11, 422.12, or 422.13, within a facility when actual emissions of VOCs from all surface coating process lines meeting the same applicability requirements within the facility are never greater than 6.8 kilograms (15 pounds) in any one day with all emission control equipment inoperative.

(3) Surface coating facilities as described under s. NR 422.07, 422.10, 422.11, 422.12, or 422.13 which are located outside the counties of Brown, Calumet, Dane, Dodge, Door, Fond du Lac, Jefferson, Kenosha, Kewaunee, Manitowoc, Milwaukee, Outagamie, Ozaukee, Racine, Rock, Sheboygan, Walworth, Washington, Waukesha, and Winnebago and which have total emissions of VOCs from the facility, with all emission control equipment inoperative, of less than 100 tons per year.

(5) Surface coating process sources used exclusively for chemical or physical analysis or determination of product quality and commercial acceptance where all of the following conditions are met:

(a) The operation of the source is not an integral part of the production process.

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

(c) The exemption is approved in writing by the department.

(7) Coatings and inks that are subject to an emission limitation under ss. NR 422.05 to 422.083, 422.085, 422.09, or 422.10 to 422.17, but that do not comply with the applicable emission limitation, if the aggregate use of these noncompliant coatings and inks at the facility does not exceed 55 gallons during any 12 consecutive months.

History: Renum. from NR 154.13 (4) (a) and am. Register, September, 1986, No. 369, eff. 10-1-86; am. (3) and cr. (6), Register, January, 1987, No. 373, eff. 2-1-87; am. (intro.), (2) and (3), Register, August, 1989, No. 404, eff. 9-1-89; am. (intro.), (1) to (4) and (6) (b), Register, February, 1990, No. 410, eff. 3-1-90; am. (intro.) and (2), Register, May, 1992, No. 437, eff. 6-1-92; am. (1) to (4), (6) (a) and (b), Register, December, 1993, No. 456, eff. 1-1-94; cr. (4m), Register, June, 1994, No. 462, eff. 7-1-94; am. (intro.), cr. (8) and (9), Register, August, 1994, No. 464, eff. 9-1-94; am. (1), (3), Register, August, 1995, No. 476, eff. 9-1-95; am. (intro.), (2), (3), (4), (4m) (b) and (c), cr. (7), Register, December, 1995, No. 480, eff. 1-1-96; r. and recr. (7), Register, October, 1999, No. 526, eff. 11-1-99; CR 11-005: am. (1), (3), r. (2), (4), (4m), (6), (8), (9) Register January 2012 No. 673, eff. 2-1-12; CR 20-088: am. (intro.), (7) Register May 2022 No. 797, eff. 6-1-22.

NR 422.04 Methods of compliance. (1) IN-LINE AVERAGING. Compliance with the emission limitations of this chapter may be achieved through a daily volume-weighted average of all coatings or inks applied by emission units in a process line subject to the same numerical emission limitation. Any owner or operator achieving compliance by means of this subsection shall comply with the reporting requirements of s. NR 439.03 (7) and the recordkeeping requirements of s. NR 439.04 (5) (g).

(a) No owner or operator of a coating line subject to an emission limitation contained in ss. NR 422.05 to 422.084, 422.09 to 422.12, 422.132, 422.135, 422.15, 422.151, or 422.155 and complying with the emission limitation by means of this subsection may cause, allow or permit the daily volume-weighted average VOC content to exceed the emission limitation to which the coatings are subject. For purposes of this paragraph, daily volume-weighted average VOC content shall be calculated by using the following equation:

$$VOC_A = \left[\sum_{i=1}^{n} C_i V_i\right] / V_T$$

where:

VOC_A is the volume-weighted average VOC content of 2 or more coatings applied on a coating line during any day in kilograms per liter (pounds per gallon) of coating, excluding water

i is the subscript denoting an individual coating

n is the number of different coatings subject to the same numerical emission limitation applied during any day on a coating line

C_i is the VOC content of each coating (i) as applied during any day on the coating line in kilograms per liter (pounds per gallon) of coating, excluding water

V_i is the volume of each coating (i), excluding water, as applied during any day on the coating line in liters (gallons)

V_T is the total volume of all n coatings subject to the same emission limitation, excluding water, applied during any day on the coating line in liters (gallons)

(b) No owner or operator of a printing line subject to an emission limitation contained in s. NR 422.14 (2) (a) or (b) and complying with the emission limitation by means of this subsection may cause, allow or permit the daily volume-weighted average VOC content to exceed the emission limitation to which the inks are subject:

1. When s. NR 422.14 (2) (a) applies, the daily volume-weighted average VOC content shall be calculated by using the following equation:

$$VOC_B = \frac{\sum_{i=1}^{n} C_i L_i V_{VFi}}{\sum_{i=1}^{n} L_i V_{VFi}}$$

where:

VOC_B is the volume-weighted average VOC content of 2 or more inks applied on a printing line during any day in percent VOC by volume of the volatile fraction

i is the subscript denoting an individual ink

n is the number of different inks subject to the same emission limitation applied during any day on a printing line

C_i is the VOC content in percent VOC by volume of the volatile fraction in each ink (i) as applied

L_i is the volume of each ink (i) as applied in liters (gallons)

V_{VFi} is the volume fraction volatile content in each ink (i) as applied

2. When s. NR 422.14 (2) (b) applies, the daily volume-weighted average VOC content shall be calculated by using the following equation:

$$VOC_C = \left[\sum_{i=1}^{n} C_i V_i\right] / V_T$$

where:

VOC_C is the volume-weighted average VOC content of 2 or more inks applied on a printing line during any day in percent VOC by volume, excluding water

i is the subscript denoting an individual ink

n is the number of different inks subject to the same emission limitation applied during any day on a printing line

C_i is the VOC content of each ink (i) applied during any day on the printing line in percent VOC by volume, excluding water

V_i is the volume of each ink (i), excluding water, applied during any day on the printing line in liters (gallons)

V_T is the total volume of all n inks subject to the same emission limitation, excluding water, applied during any day on the printing line in liters (gallons)

(c) An owner or operator of a coating or printing line subject to an emission limitation in this chapter not specified in par. (a) or (b) may comply by means of this subsection only by obtaining prior department approval through an order issued under s. 285.13 (2), Stats., or through a permit. Any approval granted 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.

(2) GENERAL METHODS. The surface coating or printing emission limitations shall be achieved by one of the following:

(a) The application of low solvent content coating or ink technology.

(b) A vapor recovery system which recovers the solvent for reuse.

(c) Incineration or catalytic oxidation, provided that 90% of the nonmethane VOCs (VOC measured as total combustible carbon) which enter the incinerator or oxidation unit are oxidized to non-organic compounds.

(d) An equivalent system or approach demonstrated to reliably control emissions to a level at or below the applicable emission limit and approved by the department. Any approval granted by the department under this paragraph shall be submitted to, and

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will not become effective for federal purposes until approved by, the administrator or designee as a source-specific revision to the department's state implementation plan for ozone.

(3) HIGH TRANSFER EFFICIENCY COATING APPLICATION. (a) Surface coating operations covered under ss. NR 422.09 to 422.11 and 422.15 have the added option of achieving compliance with the emission limitation through the use of an alternative control method or system involving a high transfer efficiency coating application system, either when used alone or in conjunction with low solvent content coating technology.

(b) Compliance under the option provided in this subsection must be approved by the department. This requires that all of the following conditions are met:

1. The design, operation and efficiency of the application system must be certified in writing by the owner or operator and submitted to the department for approval.

2. The solvent usage per coated part for application system must be less than or equal to the solvent usage per coated part at the applicable emission limitation using baseline transfer efficiency.

(c) Each alternative control method or system approval granted by the department under this subsection shall be submitted to, and will not become effective for federal purposes until approved by, the administrator or designee as a source-specific revision to the department's state implementation plan for ozone.

(4) CAPTURE SYSTEMS. The design, operation and efficiency of any capture system used in conjunction with sub. (2) (b), (c) or (d) shall be certified in writing by the owner or operator. The efficiency of the capture system is subject to approval by the department. For sources subject to an emission limitation under this chapter which is expressed in units of pounds VOC per gallon of coating or ink, excluding water, the efficiency of the capture system shall be great enough to insure that for any day either 95% overall control is achieved or the emissions from the controlled line are less than or equal to the amount determined using the following equation:

$$E = \sum_{i=1}^{n} (A_i B_i C_i / D_i)$$

where:

E is the total allowable daily emissions of VOCs in kilograms (pounds) from all coatings or inks subject to the same numerical emission limitation and applied on the controlled line

i is the subscript denoting an individual coating or ink

n is the number of different coatings or inks applied

A_i is the allowable emission rate for the coatings or inks pursuant to the requirements of this chapter in kilograms per liter (pounds per gallon) of coating or ink, excluding water, delivered to the applicator

B_i is the amount of coating material or ink in liters (gallons), delivered to the applicator during the actual production day

C_i is the volume fraction of solids in the coating or ink, delivered to the applicator during the actual production day

D_i is the theoretical volume fraction of solids in the coating or ink necessary to meet the allowable emission rate pursuant to the requirements of this chapter calculated from:

$$D_i = 1 - [A_i / P_i]$$

where:

P_i is the density of the VOC used in the coating or ink delivered to the applicator during the actual production day in kilograms per liter (pounds per gallon). If the coating or ink does not contain any VOCs, or if the actual VOC density cannot be demonstrated by the owner or operator, a value of 0.88 kilograms per liter (7.36 pounds per gallon) shall be used for P.

History: Renum. from NR 154.13 (4) (b) and am. Register, September, 1986, No. 369, eff. 10-1-86; renum. (1) to (3) to be (2) to (4) and am. (3) (a), (b) (intro.) and 1. and (4), cr. (1) and (3) (c), Register, February, 1990, No. 410, eff. 3-1-90; renum. (1) to be (1) (intro.) and am., cr. (1) (a) to (c), am. (2) (d) and (3) (c), r. and recr. (4), Register, December, 1993, No. 456, eff. 1-1-94; am. (1) (a) Register, August, 1994, No. 464, eff. 9-1-94; am. (4) Register, June, 1995, No. 474, eff. 7-1-95; am. (1) (a), (c), (2) (intro.), (d), and (3) (b) (intro.), (c), Register, December, 1996, No. 492, eff. 1-1-97; am. (4), Register, October, 1999, No. 526, eff. 11-1-99; CR 00-174: am. (1) (a), Register August 2001 No. 548, eff. 9-1-01; CR. 02-146: am. (2) (intro.) and (a) Register October 2003 No. 574, eff. 11-1-03; CR 20-088: am. (1) (a) Register May 2022 No. 797, eff. 6-1-22.

NR 422.05 Can coating. (1) APPLICABILITY. (a) Subsections (2) and (4) apply to coating applicators and ovens of sheet, can or end coating lines involved in sheet basecoat (exterior and interior) and overvarnish; 2-piece can exterior (basecoat and overvarnish); 2- and 3-piece can interior body spray; 2-piece can exterior end (spray or roll coat); 3-piece can side-seam spray and end sealing compound operations at a facility that is either of the following:

1. Located in the county of Brown, Calumet, Dane, Dodge, Door, Fond du Lac, Jefferson, Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Outagamie, Racine, Rock, Sheboygan, Walworth, Washington, Waukesha, or Winnebago and which has VOC emissions from all can coating lines at the facility, before consideration of controls, exceeding 6.8 kilograms (15 pounds) in any one day.

2. Located outside of the counties of Brown, Calumet, Dane, Dodge, Door, Fond du Lac, Jefferson, Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Outagamie, Racine, Rock, Sheboygan, Walworth, Washington, Waukesha, and Winnebago and which has total VOC emissions from the facility, before consideration of controls, equal to or exceeding 100 tpy.

(b) Except as provided in sub. (1m), subs. (3) and (4) apply to a facility with coating operations as described in par. (a) and which is 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.

(1m) EXEMPTIONS. The following exemptions are applicable to various provisions of this section:

(a) Subsection (3) does not apply to the stripping of cured coatings or cured inks.

(b) Subsection (3) (a) 4. in Table 1 does not apply to facilities using less than a total of 1.5 gallons per day of VOC-containing solvents and solvent solutions to clean sterilization indicating ink application equipment.

(c) Subsection (3) (a) does not apply to cleaning conducted in conjunction with performance testing on coatings or inks, research and development programs, and quality assurance testing. This exemption is limited to the use of up to a total of 110 gallons of solvents and solvent solutions per year on a 12 consecutive month rolling basis.

(d) Subsection (3) (a) and (e) 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.

(e) Subsection (3) (a), (d), (e), and (f) do not apply to digital printing.

(f) Subsection (3) (e) does not apply to cleaning with solvents or solvent solutions in spray bottles or containers described in sub. (3) (b) 2.

(g) Subsection (3) (e) does not apply to the cleaning of the nozzle tips of automated spray equipment systems, except for ro-

botic systems that are programmed to spray into a closed container.

(2) EMISSION LIMITATIONS. No owner or operator of a can coating line may cause, allow or permit the emission of any VOCs in excess of:

(a) 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, delivered to each coating applicator from sheet basecoat (exterior and interior) and overvarnish or 2-piece can exterior (basecoat and overvarnish) operations.

(b) 0.51 kilograms per liter of coating (4.2 pounds per gallon), excluding water, delivered to each coating applicator from 2- and 3-piece can interior body spray and 2-piece can exterior end (spray or roll coat) operations.

(c) 0.66 kilograms per liter of coating (5.5 pounds per gallon), excluding water, delivered to each coating applicator from 3-piece can side-seam spray operations.

(d) 0.44 kilograms per liter of coating (3.7 pounds per gallon), excluding water, delivered to each coating applicator from end sealing compound operations.

(3) INDUSTRIAL CLEANING OPERATIONS. Beginning on March 1, 2013, the owner or operator of a facility subject to this subsection shall meet the requirements of this subsection:

(a) *Solvent and solvent solution requirements.* Except as provided under par. (d), no owner or operator of a facility may cause, allow or permit the use of a solvent or solvent solution for industrial cleaning operations 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. For the purposes of this subsection, VOC content shall have the meaning given in s. NR 423.02 (11r).

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)
1. Product cleaning or surface preparation during manufacturing process	0.05 (0.42)
2. Repair cleaning or maintenance cleaning	0.05 (0.42)
3. Cleaning of coatings (excluding adhesives) application equipment	
a. General	0.05 (0.42)
b. Heptane-containing end sealant application equipment lines	0.70 (5.8)
4. Cleaning of ink application equipment	
a. General	0.05 (0.42)
b. Metal can identification ink application equipment	0.89 (7.4)

(b) *Cleaning devices and methods requirements.* Except as provided under par. (d), the owner or operator of a facility shall comply with the following requirements associated with the identified cleaning devices or methods when using solvents or solvent solutions:

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

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

3. 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.

4. A remote reservoir cleaner operated in compliance with all of the following requirements:

a. 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.

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

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

d. 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.

5. 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.

6. 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.

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

(d) *Control equipment.* In lieu of complying with the requirements in pars. (a) and (b), 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:

1. 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).

2. 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).

(e) *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 par. (d).

(f) *Alternative compliance option.* In lieu of complying with the requirements in par. (a), 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 that is less than or equal to the applicable VOC composite partial vapor pressure listed in Table 1A for the respective cleaning operation.

Table 1A
VOC Composite Partial Vapor
Pressure for Solvents and Solvent Solutions Used in Industrial Cleaning Operations

Cleaning Activity	VOC Composite Partial Vapor Pressure for Solvents and Solvent Solutions in mm of Hg at 20°C
1. Product cleaning or surface preparation during manufacturing process	8.0
2. Repair cleaning or maintenance cleaning	8.0
3. Cleaning of coatings (excluding adhesives) application equipment	
a. General	8.0
b. Heptane-containing end sealant application equipment lines	10.0
4. Cleaning of ink application equipment	8.0

(4) RECORDKEEPING. In addition to the applicable recordkeeping requirements in s. NR 439.04, the owner or operator of any can coating line 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 a department representative at any time during normal working hours. The information required is:

(a) For each operation that is exempt under sub. (1m) (d), the daily quantity in fluid ounces of VOC-containing aerosol product used for industrial cleaning operations.

(am) For each operation that is exempt under sub. (1m) (c), the name, identification, and monthly quantity in gallons of VOC-containing solvent or solvent solutions used for industrial cleaning operations. In addition, monthly information demonstrating the exempt solvent or solvent solution is being used exclusively for performance testing on coatings or inks, research and development programs, or quality assurance testing.

(b) For each operation that is exempt under sub. (1m) (b), the daily quantity in gallons of VOC-containing solvents or solvent solutions used to clean sterilization indicating ink application equipment.

(c) For each operation that is subject to sub. (3), the following information as appropriate:

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

2. The VOC content of each cleaning material, in pounds per gallon of material as employed, or the VOC composite partial vapor pressure of the solvents or solvent solutions used in industrial cleaning operations.

3. For any operation subject to sub. (3) (d), the results of any testing conducted as required under sub. (3) (d).

History: Renum. from NR 154.13 (4) (c) and am. Register, September, 1986, No. 369, eff. 10-1-86; am. (2) (intro.), (3) (a) 1. and 2., Register, February, 1990, No. 410, eff. 3-1-90; r. (3), Register, December, 1995, No. 480, eff. 1-1-96; CR 11-005: renum. (1) to be (1) (a) (intro.) and am., cr. (1) (a) 1., 2., (b), (1m), (3), (4) Register January 2012 No. 673, eff. 2-1-12; CR 20-088: am. (1m) (intro.) Register May 2022 No. 797, eff. 6-1-22.

NR 422.06 Coil coating. (1) APPLICABILITY. (a) Subsections (2) and (4) apply to the coating applicators, ovens and quench areas of coil coating lines involved in prime and topcoat or single coat operations at a facility that is either of the following:

1. Located in the county of Brown, Calumet, Dane, Dodge, Door, Fond du Lac, Jefferson, Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Outagamie, Racine, Rock, Sheboygan, Walworth, Washington, Waukesha, or Winnebago, and which has VOC emissions from all coil coating lines at the facility, before consideration of controls, exceeding 6.8 kilograms (15 pounds) in any one day.

2. Located outside of the counties of Brown, Calumet, Dane, Dodge, Door, Fond du Lac, Jefferson, Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Outagamie, Racine, Rock, Sheboygan, Walworth, Washington, Waukesha, and Winnebago, and which has total VOC emissions from the facility, before consideration of controls, equal to or exceeding 100 tpy.

(b) Except as provided in sub. (1m), subs. (3) and (4) apply to a facility with coating operations as described in par. (a) and which is 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.

(1m) EXEMPTIONS. The following exemptions are applicable to various provisions of this section:

(a) Subsection (3) does not apply to the stripping of cured coatings or cured inks.

(b) Subsection (3) does not apply to industrial adhesives or adhesive primers.

(c) Subsection (3) (a) does not apply to cleaning conducted in conjunction with performance laboratory tests on coatings or inks, research and development programs, and laboratory tests in quality assurance laboratories.

(d) Subsection (3) (a) and (e) 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.

(e) Subsection (3) (a), (d), (e), and (f) do not apply to digital printing.

(f) Subsection (3) (e) does not apply to cleaning with solvents or solvent solutions in spray bottles or containers described in sub. (3) (b) 2.

(g) Subsection (3) (e) 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.

(2) EMISSION LIMITATIONS. No owner or operator of a coil coating line may cause, allow or permit the emission of any VOCs in excess of 0.31 kilograms per liter of coating (2.6 pounds

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per gallon), excluding water, delivered to each coating applicator from prime and topcoat or single coat operations.

(3) INDUSTRIAL CLEANING OPERATIONS. Beginning on March 1, 2013, the owner or operator of a facility subject to this subsection shall meet the requirements of this subsection.

(a) *Solvent and solvent solution requirements.* Except as provided under par. (d), no owner or operator of a facility may cause, allow or permit the use of a solvent or solvent solution for industrial cleaning operations unless the VOC content of the solvent or solvent solution is less than or equal to 0.05 kilograms of VOC per liter (0.42 pounds per gallon). For the purposes of this subsection, VOC content shall be defined as in s. NR 423.02 (11r).

(b) *Cleaning devices and methods requirements.* Except as provided under par. (d), the owner or operator of a facility shall comply with the following requirements associated with the identified cleaning devices or methods when using solvents or solvent solutions:

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

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

3. 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.

4. A remote reservoir cleaner operated in compliance with all of the following requirements:

a. 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.

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

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

d. 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.

5. 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.

6. 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.

(c) *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.

(d) *Control equipment.* In lieu of complying with the requirements in pars. (a) and (b), 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:

1. 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).

2. 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).

(e) *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 par. (d).

(f) *Alternative compliance option.* In lieu of complying with the requirements in par. (a), 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.

(4) RECORDKEEPING. In addition to the applicable recordkeeping requirements in s. NR 439.04, the owner or operator of any coil coating line 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 a department representative at any time during normal working hours. The information required is:

(a) For each operation that is exempt under sub. (1m) (d), the daily quantity in fluid ounces of VOC-containing aerosol product used for industrial cleaning operations.

(b) For each operation that is subject to sub. (3), the following information as appropriate:

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

2. The VOC content of each cleaning material, in pounds per gallon of material, as employed or the VOC composite partial vapor pressure of the solvents or solvent solutions used in industrial cleaning operations.

3. For any operation subject to sub. (3) (d), the results of any testing conducted as required under sub. (3) (d).

History: Renum. from NR 154.13 (4) (d) and am. Register, September, 1986, No. 369, eff. 10-1-86; am. (2), Register, February, 1990, No. 410, eff. 3-1-90; CR 11-005: renum. (1) to be (1) (a) (intro.) and am., cr. (1) (a) 1., 2., (b), (1m), (3), (4) Register January 2012 No. 673, eff. 2-1-12; CR 20-088: am. (1m) (intro.) Register May 2022 No. 797, eff. 6-1-22.

NR 422.07 Paper coating — part 1. (1) APPLICABILITY. This section applies, subject to the provisions of s. NR 425.03, to the coating applicators, including but not limited to blade, air knife or roll coaters, and drying ovens of paper coating lines. This section does not apply to any piece of equipment on which a nonuniform coating is applied to a substrate, as in printing, or to sources exempted under s. NR 422.03.

(2) EMISSION LIMITATIONS. No owner or operator of a paper coating line may cause, allow or permit the emission of any VOCs in excess of 0.35 kilograms per liter of coating (2.9 pounds per gallon), excluding water, delivered to each coating applicator from a paper coating line.

History: Renum. from NR 154.13 (4) (e) and am. Register, September, 1986, No. 369, eff. 10-1-86; am. (2), Register, February, 1990, No. 410, eff. 3-1-90; CR 08-102: am. (title) Register July 2009 No. 643, eff. 8-1-09.

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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 November 1, 2009, 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 and storage vessels used for VOC-containing coatings and other materials except when depositing or removing these materials.

(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.

History: CR 08-102: cr. Register July 2009 No. 643, eff. 8-1-09; CR 11-005: am. (3) (b) Register January 2012 No. 673, eff. 2-1-12.

NR 422.08 Fabric and vinyl coating. (1) APPLICABILITY. (a) Subsections (2) and (4) apply to the coating applicators, including blade, roll, rotogravure or dip coaters, and drying ovens of fabric and vinyl coating lines at a facility that is either of the following:

1. Located in the county of Brown, Calumet, Dane, Dodge, Door, Fond du Lac, Jefferson, Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Outagamie, Racine, Rock, Sheboygan, Walworth, Washington, Waukesha, or Winnebago, and which has VOC emissions from all fabric and vinyl coating lines at the facility, before consideration of controls, exceeding 6.8 kilograms (15 pounds) in any one day.

2. Located outside of the counties of Brown, Calumet, Dane, Dodge, Door, Fond du Lac, Jefferson, Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Outagamie, Racine, Rock, Sheboygan, Walworth, Washington, Waukesha, and Winnebago, and which has total VOC emissions from the facility, before consideration of controls, equal to or exceeding 100 tpy.

(b) Except as provided in sub. (1m), subs. (3) and (4) apply to a facility with coating 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.

(1m) EXEMPTIONS. The following exemptions are applicable to various provisions of this section:

(a) Subsection (3) does not apply to the stripping of cured coatings or cured inks.

(b) Subsection (3) (a) does not apply to cleaning conducted in conjunction with performance laboratory testing on coatings or inks; research and development programs; and laboratory tests in quality assurance laboratories.

(c) Subsection (3) (a) and (e) 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 (3) (a), (d), (e), and (f) do not apply to digital printing.

(e) Subsection (3) (e) does not apply to cleaning with solvents or solvent solutions in spray bottles or containers described in sub. (3) (b) 2.

(f) Subsection (3) (e) 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.

(2) EMISSION LIMITATIONS. No owner or operator of a fabric coating line or a vinyl coating line may cause, allow or permit the emission of any VOCs in excess of:

(a) 0.35 kilograms per liter of coating (2.9 pounds per gallon), excluding water, delivered to each coating applicator from a fabric coating line.

(b) 0.45 kilograms per liter of coating (3.8 pounds per gallon), excluding water, delivered to each coating applicator from a vinyl coating line.

(3) INDUSTRIAL CLEANING OPERATIONS. Beginning on March 1, 2013, the owner or operator of a facility subject to this subsection shall meet the requirements of this subsection.

(a) *Solvent and solvent solution requirements.* Except as provided under par. (d), no owner or operator of a facility may cause, allow or permit the use of a solvent or solvent solution for industrial cleaning operations unless the VOC content of the solvent or solvent solution is less than or equal to 0.05 kilograms of VOC per liter (0.42 pounds per gallon). For the purposes of this subsection, VOC content shall be defined as in s. NR 423.02 (11r).

(b) *Cleaning devices and methods requirements.* Except as provided under par. (d), the owner or operator of a facility shall comply with the following requirements associated with the identified cleaning devices or methods when using solvents or solvent solutions:

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

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

3. 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

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closed during non-operation with the exception of maintenance and repair to the cleaning equipment itself.

4. A remote reservoir cleaner operated in compliance with all of the following requirements:

a. 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.

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

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

d. 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.

5. 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.

6. 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.

(c) *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.

(d) *Control equipment.* In lieu of complying with the requirements in pars. (a) and (b), 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:

1. 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).

2. 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).

(e) *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 par. (d).

(f) *Alternative compliance option.* In lieu of complying with the requirements in par. (a), 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.

(4) RECORDKEEPING. In addition to the applicable recordkeeping requirements in s. NR 439.04, the owner or operator of any fabric and vinyl coating line 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 a department representative at any time during normal working hours. The information required is:

(a) For each operation that is exempt under sub. (1m) (c), the daily quantity in fluid ounces of VOC-containing aerosol product used for industrial cleaning operations.

(b) For each operation that is subject to sub. (3), the following information as appropriate:

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

2. The VOC content of each cleaning material, in pounds per gallon of material, as employed or the VOC composite partial vapor pressure of the solvents or solvent solutions used in industrial cleaning operations.

3. For any operation subject to sub. (3) (d), the results of any testing conducted as required under sub. (3) (d).

History: Renum. from NR 154.13 (4) (f) and am. Register, September, 1986, No. 369, eff. 10-1-86; am. (2) (intro.), Register, February, 1990, No. 410, eff. 3-1-90; CR 11-005: renum. (1) to be (1) (a) (intro.) and am., cr. (1) (a) 1., 2., (b), (1m), (3), (4) Register January 2012 No. 673, eff. 2-1-12; CR 20-088: am. (1m) (intro.) Register May 2022 No. 797, eff. 6-1-22.

NR 422.083 Plastic parts coating — part 1. (1) APPLICABILITY. (ag) The requirements of this section do not apply to any facility with a plastic parts coating operation meeting the applicability requirements contained in s. NR 422.084 (1) beginning on June 1, 2022.

(ar) Except as provided under sub. (4), subs. (3) and (4) apply to plastic parts coating at facilities that are located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Washington, or Waukesha and that have maximum theoretical emissions of VOCs from the facility, excluding any maximum theoretical emissions of VOCs specifically subject to s. NR 419.05, 419.06, or 419.08; ch. NR 420 or 421; ss. NR 422.05 to 422.08 or 422.085 to 422.17; or ss. NR 423.03 to 423.05, or s. NR 424.04 or 424.05, of 25 tons per year or more.

(b) Except as provided under sub. (4), subs. (3) and (4) apply to plastic parts coating at facilities that are located in the county of Kewaunee, Manitowoc, or Sheboygan and that have maximum theoretical emissions of VOCs from the facility, excluding any maximum theoretical emissions of VOCs specifically subject to s. NR 419.05, 419.06, or 419.08; ch. NR 420 or 421; ss. NR 422.05 to 422.08 or 422.085 to 422.17; or ss. NR 423.03 to 423.05, 424.04, or 424.05, of 100 tons per year or more.

(bm) Subsection (3m) applies to the owner or operator of a plastic parts coating line located at a facility in the county of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, or Waukesha if VOC emissions from all plastic parts coating operations and related cleaning activities at the facility, before consideration of controls, equal or exceed 3 tons on a 12 consecutive month rolling basis.

(c) This section does not apply to the following:

1. Plastic parts coating regulated under s. NR 422.095, 422.11, 422.115, or 422.145.

2. Plastic parts coating regulated under s. NR 422.10, 422.105, 422.15, or 422.151 where plastic parts are attached to metal parts prior to the coating of the plastic and metal assembly.

(2) EXEMPTIONS. The application of touch-up coatings is exempt from the requirements of this section.

(3) EMISSION LIMITATIONS. After December 31, 2002, no owner or operator of a plastic parts coating operation may cause, allow or permit the emission of any VOCs in excess of the limitations specified in Table 1B. If more than one VOC content limi-

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tation in Table 1B applies to a coating, the lowest VOC content limitation shall be satisfied.

Table 1B
VOC Content Limitations for Coatings Used in Plastic Parts Coating
[kilogram/liter (pounds/gallons) of coating, excluding water, as applied]

Coating Application and Type	Maximum VOC Content
(a) Automotive/transportation	
1. Interiors	
a. Baked	
Prime coats	0.46 (3.8)
Other nonclear coatings	0.49 (4.1)
b. Air dried	
Prime coats	0.42 (3.5)
Other nonclear coatings	0.59 (4.9)
2. Exteriors	
a. Baked	
Nonelastomeric prime coats	0.54 (4.5)
Elastomeric prime coats	0.60 (5.0)
Clear coats	0.52 (4.3)
Other coatings	0.55 (4.6)
b. Air dried	
Prime coats	0.66 (5.5)
Clear coats	0.54 (4.5)
Other coatings, red and black	0.67 (5.6)
Other coatings	0.61 (5.1)
3. Specialty	
a. Adhesive primers	0.82 (6.8)
b. Air bag cover coatings	0.71 (5.9)
c. Anti-glare safety coatings	0.77 (6.4)
d. Electrostatic prep coatings	0.82 (6.8)
e. Head lamp lens coatings	0.89 (7.4)
f. Pad printing coatings	0.82 (6.8)
g. Reflective argent coatings	0.71 (5.9)
h. Resist coatings	0.82 (6.8)
i. Soft coatings	0.71 (5.9)
j. Stencil coatings	0.82 (6.8)
k. Texture basecoats	0.66 (5.5)
L. Texture topcoats	0.77 (6.4)
m. Vacuum metallizing basecoats	0.66 (5.5)
n. Vacuum metallizing topcoats	0.77 (6.4)
(b) Business machine	
1. Prime coats	0.35 (2.9)
2. Other nonclear coatings	0.35 (2.9)
3. Specialty	
a. Electromagnetic interference/radio frequency interference (EMI/RFI) shielding coatings	0.48 (4.0)
b. Resist coatings	0.71 (5.9)
c. Sensitizer coatings	0.85 (7.1)
d. Soft coatings	0.52 (4.3)
(c) Miscellaneous categories	
1. Air cleaner covers	0.72 (6.0)
2. Building exterior molding, trim, shutters and weather stripping	0.75 (6.2)
3. Building interior molding and trim	0.30 (2.5)
4. Cosmetic cases	
a. Opaque coatings	0.58 (4.8)
b. Other coatings	0.71 (5.9)
5. Personal hygiene razors	
a. Soft coatings	0.66 (5.5)
b. Other coatings	0.75 (6.2)
6. Signs	
a. Mask coatings	0.10 (0.8)
b. Opaque coatings	0.71 (5.9)
c. Other coatings	0.78 (6.5)
7. Smoke detector covers	0.75 (6.2)

(3m) CLEANING MATERIAL WORK PRACTICES. Beginning on March 1, 2013, the owner or operator of a facility subject to this section shall do all of the following:

(a) Store all VOC-containing cleaning materials and shop towels used for cleaning in closed containers.

(b) Ensure that storage containers used for VOC-containing materials are kept closed at all times except when depositing or removing material.

(c) Convey VOC-containing cleaning materials in closed containers or pipes.

(d) minimize spills of VOC-containing cleaning materials.

(e) minimize emissions of VOC during cleaning of coating application, storage, mixing, and conveying equipment by ensuring that cleaning is performed without atomizing any VOC-containing cleaning material and that the used material is captured and contained.

(4) RECORDKEEPING REQUIREMENTS. (a) To determine applicability under sub. (1) (ar) or (b), each owner or operator of a plastic parts coating 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 specifically subject to s. NR 419.05, 419.06, or 419.08; ch. NR 420 or 421; ss. NR 422.05 to 422.08 or 422.085 to 422.17; or ss. NR 423.03 to 423.05, 424.04, or 424.05.

(b) Any owner or operator subject to this section under the applicability criteria of sub. (1) (ar) or (b) shall maintain records as described in s. NR 439.04 (5).

(c) Records required under this subsection shall be kept for 5 years unless another time period is specified under s. NR 439.04 (2).

History: CR 00-174: cr. Register August 2001 No. 548, eff. 9-1-01; CR 02-097: am. (1) (a), (b), and (4) (a), Register June 2004 No. 582, eff. 7-1-04; CR 11-005: am. (1) (a), (b), (3), Table 1B title, cr. (1) (bm), (3m) Register January 2012 No. 673, eff. 2-1-12; CR 20-088: am. (title), renum. (1) (a) to (1) (ar) and am., cr. (1) (ag), am. (1) (b), (c) 1., 2., (4) (a) Register May 2022 No. 797, eff. 6-1-22; correction in (1) (b), (4) made under s. 35.17, Stats., Register May 2022 No. 797; correction in (4) (b) made under s. 13.92 (4) (b) 7., Stats., Register April 2023 No. 808.

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NR 422.084 Plastic parts coating — part 2. (1) APPLICABILITY. Beginning on June 1, 2022, this section applies to all plastic parts coating operations at a facility that meets all of the following criteria:

(a) The facility is located in any of the following areas:

1. An area that is classified as a moderate, serious, severe, or extreme ozone nonattainment area.

2. Any area that meets all the following criteria:

a. The area had been classified as a moderate, serious, severe, or extreme ozone nonattainment area for a National Ambient Air Quality Standard, as defined in s. NR 489.02 (21), for ozone promulgated in or after 2008.

b. The area was subsequently reclassified as a marginal ozone nonattainment area or redesignated to an attainment area for ozone.

(b) The facility has actual VOC emissions, before consideration of controls, from all miscellaneous metal parts and products coating operations, plastic parts coating operations, and related cleaning activities equal to or greater than 2.7 tons per year based on any consecutive 12-month period.

(2) DEFINITIONS. Notwithstanding the definitions contained in s. NR 422.02, the following definitions apply in this section:

(a) "Electromagnetic interference/radio frequency interference shielding coating" means a coating used on electrical or electronic equipment to provide shielding against electromagnetic interference, radio frequency interference, or static discharge.

(b) "Mask coating" means a thin film coating applied through a template to coat a small portion of a substrate.

(c) "Pretreatment wash primer" means a coating that contains no more than 12 percent solids, by weight, and at least 0.50 percent acid, by weight, as measured according to ASTM D1613-02, incorporated by reference under s. NR 484.10 (25m), and that is used to provide surface etching, corrosion resistance, and adhesion of subsequent coatings.

(d) "Stencil coating" means an ink or a pigmented coating that is rolled or brushed onto a template or stamp in order to add identifying letters, symbols, or numbers.

(e) "Texture coating" means a coating applied to a plastic part that, in its finished form, consists of discrete raised spots of the coating.

(3) EXEMPTIONS. (a) The following activities, materials, and coating lines are exempt from this section:

1. Aerospace coatings.

2. Shipbuilding and repair coatings.

3. Coatings for fiberglass boat manufacturing.

4. Aerosol coating operations.

5. Coatings that are applied to test panels and coupons as part of research and development, quality control, or performance testing activities at paint research or manufacturing facilities.

6. Coating operations regulated under s. NR 422.095, 422.11, or 422.115 for large appliance coatings.

7. Use of adhesives regulated under s. NR 422.127 or 422.128.

(b) Plastic part coating operations using any of the following types of coatings are exempt from the VOC content limitations specified under sub. (4):

1. Touch-up and repair coatings.

2. Stencil coatings applied on clear or transparent substrates.

3. Clear coats or translucent coatings, except for clear coats or translucent coatings applied to automotive and transportation parts.

4. Coatings applied at a paint manufacturing facility while conducting performance tests on the coatings.

5. Any individual coating category used in volumes less than 50 gallons in any one year, if substitute compliant coatings are not available, provided that the total usage of all such coatings does not exceed 200 gallons per year, per facility.

6. Reflective coatings applied to highway cones.

7. Mask coatings that are less than 0.5 millimeter thick when dried and the area coated is less than 25 square inches.

8. Electromagnetic interference/radio frequency interference shielding coatings.

9. Heparin-benzalkonium chloride containing coatings applied to medical devices, provided that the total usage of all such coatings does not exceed 100 gallons per year, per plastic parts coating operation.

(c) All of the following types of coatings for automotive, transportation, or business machines are exempt from the VOC content limitations specified under sub. (4):

1. Texture coatings for automotive or transportation parts.

2. Vacuum metalizing coatings.

3. Gloss reducers.

4. Texture topcoats for automotive or transportation parts.

5. Adhesion primers.

6. Electrostatic prep coatings.

7. Resist coatings.

8. Stencil coatings.

(d) All of the following types of coating operations are exempt from the coating application method requirements specified under sub. (5):

1. Airbrush operations using 5 gallons or less per year of coating.

2. The use of extreme high-gloss coatings for pleasure craft coating.

(4) EMISSION LIMITS. (a) Except as specified under par. (b), the owner or operator of a plastic parts coating operation located at an affected facility under this section shall use the low-VOC coatings that meet the VOC content limits in Table 1C for the affected plastic parts coating operations. If more than one VOC content limit applies to a specific coating, the most stringent VOC content limit shall be applied.

Table 1C
VOC Content Limitations for Coatings Used in Plastic Parts Coating – Low VOC Coatings

[kilogram/liter (pounds/gallons) of coating, excluding water and exempt compounds listed in s. NR 400.02 (162) (a), as applied]

Coating Application and Type	Maximum VOC Content
1. Plastic parts and products coatings – general (see Note)	
a. General one-component	0.28 (2.3)
b. General multi-component	0.42 (3.5)
c. Electric dissipating coatings and shock-free coatings	0.80 (6.7)
d. Extreme performance – 2 pack	0.42 (3.5)
e. Metallic	0.42 (3.5)
f. Military specification – 1 pack	0.34 (2.8)
g. Military specification – 2 pack	0.42 (3.5)
h. Mold-seal	0.76 (6.3)

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Coating Application and Type (Continued)	Maximum VOC Content
i. Multi-colored coatings	0.68 (5.7)
j. Optical coatings	0.80 (6.7)
k. Vacuum metalizing	0.80 (6.7)
2. Automotive and transportation	
a. High bake coatings – interior and exterior parts	
Flexible primer	0.54 (4.5)
Non-flexible primer	0.42 (3.5)
Base coat	0.52 (4.3)
Clear coat	0.48 (4.0)
Non-basecoat/clear coat	0.52 (4.3)
b. Low bake/air dried coatings – exterior parts	
Primer	0.58 (4.8)
Base coat	0.60 (5.0)
Clear coat	0.54 (4.5)
Non-basecoat/clear coat	0.60 (5.0)
c. Low bake/air dried coatings – interior parts	0.60 (5.0)
d. Touchup and repair coatings	0.62 (5.2)
3. Business machine coatings	
a. Primers	0.35 (2.9)
b. Topcoat	0.35 (2.9)
c. Texture coat	0.35 (2.9)
d. Fog coat	0.26 (2.2)
e. Touch and repair	0.35 (2.9)
4. Pleasure craft surface coating	
a. Extreme high-gloss topcoat	0.49 (4.1)
b. High gloss topcoat	0.42 (3.5)
c. Pretreatment wash primers	0.78 (6.5)
d. Finish primer surfacer	0.42 (3.5)
e. High build primer surfacer	0.34 (2.8)
f. Aluminum substrate antifoulant coating	0.56 (4.7)
g. Other substrate antifoulant coating	0.33 (2.8)
h. All other pleasure craft surface coatings	0.42 (3.5)
5. Motor vehicle materials	
a. Motor vehicle cavity wax	0.65 (5.4)
b. Motor vehicle sealer	0.65 (5.4)
c. Motor vehicle deadener	0.65 (5.4)
d. Motor vehicle gasket/gasket sealing material	0.20 (1.7)
e. Motor vehicle underbody coating	0.65 (5.4)
f. Motor vehicle trunk interior coating	0.65 (5.4)
g. Motor vehicle bed liner	0.20 (1.7)
h. Motor vehicle lubricating wax/compound	0.70 (5.8)

Note: The VOC content limits for the coating and application types under Table 1C rows 1. a. to k. apply to any coating that does not meet the definitions for the specific coatings listed under Table 1C rows 2. a. to 5. h.

(b) If the low-VOC coatings that meet the VOC content limits required under par. (a) are not used at an affected facility, the owner or operator shall use add-on control equipment that achieves a minimum overall emission reduction efficiency of 90 percent for VOC.

(5) APPLICATION METHODS. An owner or operator of an affected facility under this section, except for a facility that uses add-on control equipment as described under sub. (4) (b), shall use one or a combination of the following application methods for the affected coating operations:

(a) Electrostatic application.

(b) High-volume, low-pressure spray equipment.

(c) Flow coating.

(d) Roll coating.

(e) Dip coating, including electrodeposition.

(f) Airless spray.

(g) Air-assisted airless spray.

(h) Other coating application methods that are capable of achieving a transfer efficiency equivalent to or better than achieved by high-volume, low-pressure spraying and are approved by the department in writing.

(6) ADD-ON CONTROL EQUIPMENT REQUIREMENTS. An owner or operator that uses add-on control equipment as described under sub. (4) (b) shall comply with the applicable monitoring, testing, and recordkeeping requirements specified under ss. NR 439.04 (5) (e), 439.055, and 439.075.

(7) WORK PRACTICES FOR COATING-RELATED ACTIVITIES. The owner or operator of an affected facility under this section shall do all of the following for coating-related activities:

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

(b) Ensure that mixing and storage containers used for VOC-containing coatings, thinners, and coating-related waste materials are kept closed at all times, except when depositing or removing those materials.

(c) Minimize spills of VOC-containing coatings, thinners, and coating-related waste materials.

(d) Convey VOC-containing coatings, thinners, and coating-related waste materials from one location to another in closed containers or pipes.

(8) CLEANING MATERIAL WORK PRACTICES. The owner or operator of an affected facility under this section shall do all of the following for cleaning materials:

(a) Store all VOC-containing cleaning materials and used shop towels in closed containers.

(b) Ensure that storage containers used for VOC-containing materials are kept closed at all times except when depositing or removing those materials.

(c) Convey VOC-containing cleaning materials from one location to another in closed containers or pipes.

(d) Minimize spills of VOC-containing cleaning materials.

(e) Minimize emissions of VOCs during cleaning of coating application, storage, mixing, and conveying equipment by ensuring that cleaning is performed without atomizing any VOC-containing cleaning material and that the used material is captured and contained.

(9) RECORDKEEPING REQUIREMENTS. (a) An owner or operator subject to the VOC content limitations under sub. (4) (a) shall maintain records as described under s. NR 439.04 (5) (a).

(b) Records required under this subsection shall be kept for the time period specified under s. NR 439.04 (2).

(10) COMPLIANCE SCHEDULE AND CERTIFICATION. (a) *Compliance schedule.* The owner or operator of a facility with plastic parts coating operations shall comply with the applicable requirements of this section upon the facility becoming subject to this section as provided under sub. (1), except for any of the following:

1. The owner or operator of a facility with plastic parts coating operations subject to this section that commenced construc-

tion before June 1, 2022, shall comply with applicable requirements of this section by November 28, 2022. Any facility that was subject to s. NR 422.083 before June 1, 2022, shall continue to comply with the requirements in s. NR 422.083 until the date when the facility is in compliance with the applicable requirements of this section or until November 28, 2022, whichever is sooner.

2. The owner or operator of a facility with plastic parts coating operations that becomes subject to this section due to either the designation or the reclassification of a nonattainment area that occurs after June 1, 2022, shall comply with applicable requirements of this section 180 days after the effective date of the nonattainment designation or reclassification, as indicated by the relevant Federal Register publication.

(b) *Certification.* No later than 60 days after the compliance deadline specified under par. (a), the owner or operator of a facility with plastic parts coating operations subject to this section shall submit to the department written certification that all affected plastic parts coating operations are in compliance with the applicable requirements of this section. The owner or operator of a facility subject to s. NR 422.083 before June 1, 2022, that is required to have an operation permit under ch. NR 407 shall submit to the department a permit application or a permit revision or renewal application that meets the requirements of s. NR 407.05 to meet this certification requirement, except that no application shall be required for a source operating under a general operation permit or a registration operation permit issued under s. NR 407.10 or 407.105.

History: CR 20-088: cr. Register May 2022 No. 797, eff. 6-1-22; correction in (10) (a) 1. made under s. 13.92 (4) (b) 14., Stats., Register May 2022 No. 797.

NR 422.085 Leather coating. (1) APPLICABILITY. Effective February 1, 1987, this section applies to coating applications at leather coating facilities which are either of the following:

(a) Located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Washington, or Waukesha, and which have maximum theoretical emissions of VOC from the facility greater than or equal to 25 tons per year.

(b) Located in the county of Door, Kewaunee, Manitowoc, Sheboygan, or Walworth, and which have maximum theoretical emissions of VOC from the facility greater than or equal to 100 tons per year.

(2) EMISSION LIMITATIONS. No owner or operator of a leather coating facility may cause, allow or permit the emission of any VOCs from coating applications in excess of 18.6 kilograms per 100 square meters (38.0 pounds per 1000 square feet) of coated product calculated on a daily average basis.

(3) COMPLIANCE REQUIREMENTS AND SCHEDULES. The owner or operator of a leather coating facility shall comply with the requirements of sub. (4) and s. NR 425.03 (1), (8), and (9).

(4) REPORTING AND RECORDKEEPING. (a) To determine compliance with the leather coating VOC emission limit in this section, the facility shall maintain daily coating usage and leather production records in a format approved by the department. Reporting, recordkeeping and access to these records shall be in accordance with ss. NR 439.03 to 439.05.

(b) The daily VOC emission rate shall be determined by the following equation:

$$c = a/b$$

where:

c is the daily average VOC emission rate

a is the total amount of VOCs emitted during the day

b is the prorated surface area of leather coated during the day, where:

$$b = \sum_{i=1}^{n} d_i e_i$$

d_i is the total area of the ith batch of hides coated during the day

e_i is the ratio of actual VOC emissions resulting from coating any portion of the ith batch of hides during the day to the total predicted VOC emissions resulting from all coating of the entire ith batch

(c) The facility shall measure the surface area of each piece of leather coated with a mechanism initially calibrated for minimum accuracy to the Turner Korrect Machine or Sawyer Measurement systems. The average surface area per coated piece of leather may be used for a batch of leather provided that the average is based on a minimum of 500 pieces. Otherwise, the facility average surface area per coated leather piece shall be used. In no case may the total area allocated to production over all days from a piece of leather exceed the average area for that leather.

History: Cr. Register, January, 1987, No. 373, eff. 2-1-87; am. (2) and (3), cr. (4), Register, February, 1990, No. 410, eff. 3-1-90; CR 11-005: renum. (1) to be (1) (intro.) and am., cr. (1) (a), (b) Register January 2012 No. 673, eff. 2-1-12.

NR 422.09 Automobile and light-duty truck manufacturing. (1) APPLICABILITY. (a) This section applies to the application areas, flashoff areas, and ovens of automobile and light-duty truck manufacturing plants involved in prime, topcoat, and final repair coating of metallic front end and main body parts at any facility located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, or Waukesha if VOC emissions from the prime, topcoat, and final repair coating and related cleaning activities at the facility, before consideration of controls, equal or exceed 3 tons per year on a 12 consecutive month rolling basis.

(b) Subsections (2) to (5) apply to the coating operations described in par. (a) at any automobile and light-duty truck manufacturing facility located in the county of Brown, Calumet, Dane, Dodge, Door, Fond du Lac, Jefferson, Kewaunee, Manitowoc, Outagamie, Rock, Walworth, and Winnebago if VOC emissions from all coating operations described in par. (a) at the facility, before consideration of controls, equal or exceed 6.8 kilograms (15 pounds) in any one day.

(c) Subsections (2) to (5) apply to coating operations as described in par. (a) at any automobile and light-duty truck manufacturing facility not subject to par. (a) or (b) if total VOC emissions from the facility, before consideration of controls, equal or exceed 100 tpy.

(d) Subsections (2) to (5) do not apply to the coating of wheels, trunk interiors, steering columns, or nonmetallic parts; sealers; nonpriming anti-rust coatings; or processes, coatings, or inks described in s. NR 422.03 (5) and (7).

(2) EMISSION LIMITATIONS—ENAMELS. No owner or operator of an automobile surface coating line which, prior to January 1, 1979, used an enamel coating system, may cause, allow or permit the emission of any VOCs in excess of:

(a) After December 31, 1983, 0.14 kilograms per liter of coating (1.2 pounds per gallon), excluding water, from an electrodeposition prime coat or equivalent coating line.

(b) After December 31, 1982, 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, from a spray primer-surfacer coating line.

(d) After December 31, 1985, 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, from a topcoat coating line.

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(e) After December 31, 1982, 0.58 kilograms per liter of coating (4.8 pounds per gallon), excluding water, from any final repair coating line.

(3) EMISSION LIMITATIONS—LACQUERS. No owner or operator of an automobile surface coating line which, prior to January 1, 1979, used a lacquer coating system, may cause, allow or permit the emission of any VOCs in excess of:

(b) After December 31, 1982, 0.14 kilograms per liter of coating (1.2 pounds per gallon), excluding water, from an electrodeposition prime coat coating line.

(d) After December 31, 1986, 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, from a spray primer-surfacer coating line.

(g) After December 31, 1986, 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, from a topcoat coating line.

(i) After December 31, 1986, 0.58 kilograms per liter of coating (4.8 pounds per gallon), excluding water, from any final repair coating line.

(4) EMISSION LIMITATIONS—TRUCKS. No owner or operator of a light-duty truck surface coating line may cause, allow or permit the emission of any VOCs in excess of:

(b) After December 31, 1982, 0.14 kilograms per liter of coating (1.2 pounds per gallon), excluding water, from an electrodeposition prime coat coating line.

(d) After December 31, 1987, 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, from a spray primer-surfacer coating line.

(f) After December 31, 1987, 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, from a topcoat coating line.

(g) After December 31, 1982, 0.58 kilograms per liter of coating (4.8 pounds per gallon), excluding water, from any final repair coating line.

(5) EMISSION RATE AVERAGING. Each emission limit in this section may be interpreted as a weighted daily average, if specified in an approved compliance plan. The emission limits are referenced to waterborne coatings conventionally applied. Any coating line which achieves an equivalent emission rate per unit area coated shall be deemed in compliance.

(6) WORK PRACTICES. Beginning on March 1, 2013, the owner or operator of a facility subject to this section shall do all of the following:

(a) Minimize VOC emissions from cleaning of storage, mixing and conveying equipment.

(b) Develop and implement a work practice plan to minimize VOC emissions from cleaning and purging of equipment associated with all coating operations. The plan shall specify practices and procedures for the following operations, at a minimum:

1. Vehicle body wiping.
2. Coating line purging.
3. Flushing of coating systems.
4. Cleaning of spray booth grates.
5. Cleaning of spray booth walls.
6. Cleaning of spray booth equipment.
7. Cleaning of external spray booth areas.

History: Renum. from NR 154.13 (4) (g) and am. Register, September, 1986, No. 369, eff. 10-1-86; am. (2) (intro.), (3) (intro.), (4) (intro.) and (5), Register, February, 1990, No. 410, eff. 3-1-90; r. (2) (c), (3) (a), (c), (e), (f) and (h), (4) (a), (c) and (e), Register, December, 1995, No. 480, eff. 1-1-96; CR 11-005: renum. (1) to be (1) (a) and am., cr. (1) (b) to (d), (6) Register January 2012 No. 673, eff. 2-1-12.

NR 422.095 Automobile refinishing operations. (1) APPLICABILITY. (a) Subsections (3) to (5) apply to automobile refinishing operations performed in the following types of facilities in the counties of Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, and Waukesha: auto body and repair shops; production paint shops; new and used motor vehicle dealer repair and paint shops; fleet operator repair and paint shops; and any facility which coats vehicles and is classified under standard industrial classification code 7532, as described in the Standard Industrial Classification Manual, 1987, incorporated by reference in s. NR 484.05 (1), including dock repair of imported vehicles and dealer repair of vehicles damaged in transit.

(b) Subsections (7) and (8) apply to the owner or operator of a facility specified in par. (a) which is located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, or Waukesha if VOC emissions from all industrial cleaning operations associated with automobile refinishing operations at the facility, before consideration of controls, equal or exceed 3 tons on a 12 consecutive month rolling basis.

(2) EXEMPTIONS. (a) Automobile refinishing operations at facilities which use less than 20 gallons per year of coatings are exempt from the equipment requirements in sub. (5).

(b) The application of touch-up coatings is exempt from this section.

(c) Subsection (7) does not apply to the stripping of cured coatings or cured inks.

(d) Subsection (7) does not apply to industrial adhesives or adhesive primers.

(e) Subsection (7) (a) does not apply to cleaning conducted in conjunction with performance laboratory tests on coatings or inks; research and development programs; and laboratory tests in quality assurance laboratories.

(f) Subsection (7) (a) and (e) 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.

(g) Subsection (7) (a), (d), (e), and (f) do not apply to digital printing.

(h) Subsection (7) (e) does not apply to cleaning with solvents or solvent solutions in spray bottles or containers described in sub. (7) (b) 2.

(i) Subsection (7) (e) 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.

(3) NOTIFICATION. (a) The owner or operator of an automobile refinishing operation in existence on September 1, 1995, and subject to this section, shall submit a notification to the department, in writing, within 60 days of September 1, 1995, consisting of the following information:

1. Name, address and phone number of facility where refinishing operations are taking place.

2. Name and phone number of the responsible party at the facility.

(b) The owner or operator of an automobile refinishing operation which becomes subject to this section shall submit a written notification to the department containing the information specified in par. (a) within 30 days after becoming subject to this section.

Note: Notifications submitted under this subsection should be submitted to:
Wisconsin Department of Natural Resources
Bureau of Air Management
PO Box 7921
Madison WI 53707-7921
Attn: Small Business Section

(4) EMISSION LIMITATIONS—COATING. (a) No owner or operator of an automobile refinishing operation may refinish or al-

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low the refinishing of any motor vehicles or their body parts and components using any coating or coating system with a VOC content in excess of that specified in Table 2. All coatings and coating components shall be used according to manufacturer's specifications and mixing instructions.

(b) The most restrictive VOC limitation in Table 2 applies with either of the following:

1. Different combinations or mixing ratios of coatings and coating components are used which constitute a different coating system than any of the systems listed in Table 2.

2. The same combination and mixing ratio of coating components is used for more than one category in Table 2.

(c) Automobile refinishing coatings and coating components manufactured prior to January 11, 1999 are exempt from the emission limitations in Table 2.

Table 2
VOC Content Limitations For Coatings and Coating Components Used in Automobile Refinishing Operations
[Kilograms/liter (pounds/gallon) of coating, excluding water, as applied]

Type of Coating	Maximum VOC Content
Pretreatment wash primer	0.78 (6.5)
Primers/primer surfacers	0.58 (4.8)
Primer sealers	0.55 (4.6)
Single/2-stage topcoats	0.60 (5.0)
Three or more stage topcoat system	0.63 (5.2)
Specialty coatings	0.84 (7.0)
Multi-colored topcoats	0.68 (5.7)

(d) The maximum VOC content for any category of coating in Table 2 shall be calculated according to the following formula:

$$VOC = \frac{(W_v - W_w - W_{ec})}{(V - V_w - V_{ec})}$$

where:

VOC content is the pounds of VOC per gallon of coating

W_v is the mass of total volatiles, in pounds

W_w is the mass of water, in pounds

W_{ec} is the mass of exempt compounds, in pounds

V is the volume of coating, in gallons

V_w is the volume of water, in gallons

V_{ec} is the volume of exempt compounds, in gallons

(e) The VOC content for a multi-stage topcoat shall be calculated according to the following formula:

$$VOC_{multi} = [VOC_{bc} + \sum_{i=1}^{M} VOC_{mci} + 2(VOC_{cc})]/(M + 3)$$

where:

VOC_{multi} is the VOC content of a multi-stage topcoat, in pounds of VOC per gallon of coating

VOC_{bc} is the VOC content of the basecoat, as determined in par. (d)

VOC_{mci} is the VOC content of midcoat i, as determined in par. (d)

VOC_{cc} is the VOC content of the clearcoat, as determined in par. (d)

M is the number of midcoats.

(5) APPLICATION EQUIPMENT. No owner or operator of an automobile refinishing operation may refinish or allow the refinishing of any motor vehicles or their body parts and components unless one of the following types of application equipment is used in accordance with the manufacturer's recommendations:

(a) Electrostatic application equipment.

(b) Low-pressure spray method application equipment.

(6m) SPECIALTY COATINGS. No owner or operator of an automobile refinishing operation may apply or allow the application of a specialty coating for any reason other than the manufacturer's intended purposes.

(7) INDUSTRIAL CLEANING OPERATIONS. Beginning on March 1, 2013, the owner or operator of a facility subject to this subsection shall meet the requirements of this subsection.

(a) *Solvent and solvent solution requirements.* Except as provided under par. (d), no owner or operator of a facility may cause, allow or permit the use of a solvent or solvent solution for industrial cleaning operations unless the VOC content of the solvent or solvent solution is less than or equal to 0.05 kilograms of VOC per liter (0.42 pounds per gallon). For the purposes of this subsection, VOC content shall be defined as in s. NR 423.02 (11r).

(b) *Cleaning devices and methods requirements.* Except as provided under par. (d), the owner or operator of a facility shall comply with the following requirements associated with the identified cleaning devices or methods when using solvents or solvent solutions:

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

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

3. 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.

4. A remote reservoir cleaner operated in compliance with all of the following requirements:

a. 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.

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

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

d. 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.

5. 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.

6. 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.

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(c) *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. Waste paint, spent solvent and sludge from spray gun cleaners or in-house distillation units shall be stored in closed containers until properly disposed. Proper disposal includes releasing wastes to a reclaiming or hazardous waste management facility licensed under ch. NR 670, or recycling with an in-house distillation unit.

(d) *Control equipment.* In lieu of complying with the requirements in pars. (a) and (b), 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:

1. 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).

2. 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).

(e) *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 par. (d).

(f) *Alternative compliance option.* In lieu of complying with the requirements in par. (a), 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.

(8) RECORDKEEPING. In addition to the applicable recordkeeping requirements in s. NR 439.04, the owner or operator of any automobile refinishing operation 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 a department representative at any time during normal working hours. The information required is:

(a) For each operation that is exempt under sub. (2) (f), the daily quantity in fluid ounces of VOC-containing aerosol product used for industrial cleaning operations.

(b) For each operation that is subject to sub. (7), the following information as appropriate:

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

2. The VOC content of each cleaning material, in pounds per gallon of material, as employed or the VOC composite partial vapor pressure of the solvents or solvent solutions used in industrial cleaning operations.

3. For any operation subject to sub. (7) (d), the results of any testing conducted as required under sub. (7) (d).

History: Cr. Register, August, 1995, No. 476, eff. 9-1-95; am. (1), (2) (a), (3) (a) (intro.), (b), (5) (intro.), (6) (intro.) and (7), r. (2) (c), (6) (a), (b) and (8), r. and recr. (4), renum. (6) (c) to (f) to be (6) (a) to (d) and am. (6) (d), Register, January, 2001, No. 541, eff. 2-1-01; CR 00-174: am. (4) (a) to (d), renum. Table 1 to be Table 2, Register August 2001 No. 548, eff. 9-1-01; correction in (6) (b) made under s. 13.92 (4) (b) 7., Stats., Register July 2009 No. 643; CR 11-005: renum. (1) to be (1) (a) and am., r. (6), cr. (1) (b), (2) (c) to (i), (7), (8), am. (2) (a) Register January 2012 No. 673, eff. 2-1-12, correction in numbering made to (6m) renum. from (7) made under s. 13.92 (4) (b) 7., Register January 2012 No. 673.

NR 422.10 Furniture metal coating — part 1. (1) APPLICABILITY. This section applies, subject to the provisions of s. NR 425.03, to the application areas, flashoff areas and ovens of furniture metal coating lines involved in prime and topcoat or single coating operations. This section does not apply to sources exempted under s. NR 422.03.

(2) EMISSION LIMITATIONS. No owner or operator of a furniture metal coating line may cause, allow or permit the emission of any VOCs in excess of 0.36 kilograms per liter of coating (3.0 pounds per gallon), excluding water, delivered to each coating applicator from prime and topcoat or single coat operations.

History: Renum. from NR 154.13 (4) (h) and am. Register, September, 1986, No. 369, eff. 10-1-86; am. (2), Register, February, 1990, No. 410, eff. 3-1-90; CR 08-102: am. (title) Register July 2009 No. 643, eff. 8-1-09.

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 BOC 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.

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(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 November 1, 2009, 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 and storage vessels used for VOC-containing coatings and other materials except when depositing or removing these materials.

(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.

History: CR 08-102: cr. Register July 2009 No. 643, eff. 8-1-09; CR 11-005: am. (5) (b) Register January 2012 No. 673, eff. 2-1-12.

NR 422.11 Surface coating of large appliances — part 1. (1) APPLICABILITY. This section applies, subject to the provisions of s. NR 425.03, to application areas, flashoff areas and ovens of large appliance coating lines involved in single, prime or topcoat coating operations. This section does not apply to:

(a) Sources exempted under s. NR 422.03.

(b) The use of quick-drying lacquers for repair of scratches and nicks that occur during assembly, provided that the volume of coating does not exceed 0.95 liters (1 quart) in any one 8-hour period for any appliance coating line.

(2) EMISSION LIMITATIONS. No owner or operator of a large appliance coating line may cause, allow or permit the emission of any VOCs in excess of 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water, delivered to each coating applicator from single, prime or topcoat coating operations.

History: Renum. from NR 154.13 (4) (i) and am. Register, September, 1986, No. 369, eff. 10-1-86; am. (2), Register, February, 1990, No. 410, eff. 3-1-90; CR 08-102: am. (title) Register July 2009 No. 643, eff. 8-1-09.

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 BOC 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 November 1, 2009, 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 and storage vessels used for VOC-containing coatings and other materials except when depositing or removing these materials.

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(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.

History: CR 08-102: cr. Register July 2009 No. 643, eff. 8-1-09; CR 11-005: am. (5) (b) Register January 2012 No. 673, eff. 2-1-12.

NR 422.12 Magnet wire coating. (1) APPLICABILITY. This section applies, subject to the provisions of s. NR 425.03, to the ovens of magnet wire coating operations. This section does not apply to sources exempted under s. NR 422.03.

(2) EMISSION LIMITATION. No owner or operator of a magnet wire coating oven may cause, allow or permit the emission of any VOCs in excess of 0.20 kilograms per liter of coating (1.7 pounds per gallon), excluding water, delivered to each coating applicator from magnet wire coating operations.

History: Renum. from NR 154.13 (4) (j) and am. Register, September, 1986, No. 369, eff. 10-1-86; am. (2), Register, February, 1990, No. 410, eff. 3-1-90.

NR 422.125 Wood furniture coating. (1) APPLICABILITY. (a) This section applies to the wood furniture finishing operations of any wood furniture manufacturing facility which is located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, or Waukesha, and whose maximum theoretical emissions of VOCs from all wood furniture finishing operations at the facility, including any related cleaning activities, is greater than or equal to 25 tons per year.

(b) This section applies, except for sub. (4m), to any wood furniture manufacturing facility which is located in the county of Kewaunee or Manitowoc, and whose maximum theoretical emissions of VOCs from all wood furniture finishing operations at the facility is greater than or equal to 25 tons per year.

(2) EMISSION LIMITATIONS. After September 1, 1996, no owner or operator of a wood furniture finishing operation may cause, allow or permit the emission of any VOCs in excess of the following limitations:

(a) *General limits.* Except as provided in par. (b), either of the following:

1. 0.8 kilograms per kilogram of solids (0.8 pounds per pound), as applied, for topcoats only.

Note: There is no restriction on the VOC content of the sealers used by those electing to comply under subd. 1.

2. 1.9 kilograms per kilogram of solids (1.9 pounds per pound), as applied, for sealers and 1.8 kilograms per kilogram of solids (1.8 pounds per pound), as applied, for topcoats.

(b) *Acid-cured alkyd amino coatings.* When the owner or operator is using acid-cured alkyd amino vinyl sealers or acid-cured alkyd amino conversion varnish topcoats, any of the following:

1. Where the sealer is an acid-cured alkyd amino vinyl sealer and the topcoat is an acid-cured alkyd amino conversion varnish topcoat, 2.3 kilograms per kilogram of solids (2.3 pounds per pound), as applied, for sealers and 2.0 kilograms per kilogram of solids (2.0 pounds per pound of solids), as applied, for topcoats.

2. Where the sealer is not an acid-cured alkyd amino vinyl sealer and the topcoat is an acid-cured alkyd amino conversion varnish topcoat, 1.9 kilograms per kilogram of solids (1.9 pounds per pound), as applied, for sealers and 2.0 kilograms per kilogram of solids (2.0 pounds per pound), as applied, for topcoats.

3. Where the sealer is an acid-cured alkyd amino vinyl sealer and the topcoat is not an acid-cured alkyd amino conversion varnish topcoat, 2.3 kilograms per kilogram of solids (2.3 pounds per pound), as applied, for sealers and 1.8 kilograms per kilogram of solids (1.8 pounds per pound), as applied, for topcoats.

(c) *Strippable spray booth coatings.* 0.8 kilograms per kilogram of solids (0.8 pounds per pound) for strippable spray booth coatings, as applied.

(3) COMPLIANCE METHODS. (a) *Emission averaging.* In addition to using provisions of s. NR 422.04 or 425.05 to demonstrate compliance, an owner or operator may demonstrate compliance with the emission limitations in sub. (2) (a) and (b) by showing that total daily actual emissions calculated using Equation 2 are less than or equal to total daily allowable emissions calculated using Equation 1.

$$E_{ALL} = 0.9\left[\sum_{i=1}^{n} A_{TCi}S_{TCi} + \sum_{i=1}^{n} A_{SEi}S_{SEi} + \sum_{i=1}^{n} A_{WCi}S_{WCi} + \sum_{i=1}^{n} A_{BCi}S_{BCi} + \sum_{i=1}^{n} A_{STi}S_{STi}\right] \quad \text{(Equation 1)}$$

where:

E_{ALL} is the total daily allowable VOC emissions from all coatings involved in the average in kilograms (pounds)

i is a subscript denoting an individual coating

n is the number of different wood furniture coatings in an individual coating category applied during the actual production day and which are involved in the average

A_{TCi} is the lowest of the applicable emission limitation under sub. (2) (a) or (b), or other limitation imposed by permit, order or approval, or the actual emission rate, as of the date of the notification required under sub. (5), in kilograms VOC per kilogram solids (pounds VOC per pound solids), for topcoat i as delivered to the applicator

S_{TCi} is the total amount of solids in topcoat i, in kilograms (pounds), delivered to the applicator during the actual production day

A_{SEi} is the lowest of the applicable emission limitation under sub. (2) (a) or (b), or other limitation imposed by permit, order or approval, or the actual emission rate, as of the date of the notification required under sub. (5), in kilograms VOC per kilogram solids (pounds VOC per pound solids), for sealer i as delivered to the applicator

S_{SEi} is the total amount of solids in sealer i, in kilograms (pounds), delivered to the applicator during the actual production day

A_{WCi} is the lowest of 9.0, or other limitation imposed by permit, order or approval, or the actual emission rate, as of the date of the notification required under sub. (5), in kilograms VOC per kilogram solids (pounds VOC per pound solids), for washcoat i as delivered to the applicator

S_{WCi} is the total amount of solids in washcoat i, in kilograms (pounds), delivered to the applicator during the actual production day

A_{BCi} is the lowest of 1.2, or other limitation imposed by permit, order or approval, or the actual emission rate, as of the date of the notification required under sub. (5), in kilograms VOC per kilogram solids (pounds VOC per pound solids), for basecoat i as delivered to the applicator

S_{BCi} is the total amount of solids in basecoat i, in kilograms (pounds), delivered to the applicator during the actual production day

A_{STi} is the lowest of 0.791, or other limitation imposed by permit, order or approval, or the actual emission rate, as of the date of the notification required under sub. (5), in kilograms VOC per liter (pounds VOC per gallon), for stain i as delivered to the applicator

S_{STi} is the total amount of stain i, in liters (gallons), delivered to the applicator during the actual production day

$$E_{ACT} = \left[\sum_{i=1}^{n} A_{TCi}S_{TCi} + \sum_{i=1}^{n} A_{SEi}S_{SEi} + \sum_{i=1}^{n} A_{WCi}S_{WCi} + \sum_{i=1}^{n} A_{BCi}S_{BCi} + \sum_{i=1}^{n} A_{STi}S_{STi}\right] \quad \text{(Equation 2)}$$

where:

E_{ACT} is the total daily actual VOC emissions from all coatings involved in the average in kilograms (pounds)

i is a subscript denoting an individual coating

n is the number of different wood furniture coatings in an individual coating category applied during the actual production day and which are involved in the average

A_{TCi} is the actual VOC content of topcoat i, in kilograms VOC per kilogram solids (pounds VOC per pound solids), as delivered to the applicator during the actual production day

S_{TCi} is the total amount of solids in topcoat i, in kilograms (pounds), delivered to the applicator during the actual production day

A_{SEi} is the actual VOC content of sealer i, in kilograms VOC per kilogram solids (pounds VOC per pound solids), as delivered to the applicator during the actual production day

S_{SEi} is the total amount of solids in sealer i, in kilograms (pounds), delivered to the applicator during the actual production day

A_{WCi} is the actual VOC content of washcoat i, in kilograms VOC per kilogram solids (pounds VOC per pound solids), as delivered to the applicator during the actual production day

S_{WCi} is the total amount of solids in washcoat i, in kilograms (pounds), delivered to the applicator during the actual production day

A_{BCi} is the actual VOC content of basecoat i, in kilograms VOC per kilogram solids (pounds VOC per pound solids), as delivered to the applicator during the actual production day

S_{BCi} is the total amount of solids in basecoat i, in kilograms (pounds), delivered to the applicator during the actual production day

A_{STi} is the actual VOC content of stain i, in kilograms VOC per liter (pounds VOC per gallon), as delivered to the applicator during the actual production day

S_{STi} is the total amount of stain i, in liters (gallons), delivered to the applicator during the actual production day

(b) *Capture systems.* Notwithstanding s. NR 422.04 (4), an owner or operator demonstrating compliance with the emission limitations in sub. (2) as allowed under s. NR 422.04 (2) (c) shall do all of the following:

1. Determine the overall control efficiency needed to demonstrate compliance daily using Equation 3.

$$R = \left(\left(C\text{–}E\right)/C\right)(100) \quad \text{(Equation 3)}$$

where:

R is the overall efficiency of the control system needed to demonstrate compliance on a daily basis, expressed as a percentage

C is the highest VOC content of all coatings subject to this paragraph on any given day in kilograms per kilogram of coating solids (pounds per pound of coating solids), as applied

E is the emission limitation applicable to the coating in kilograms per kilogram of coating solids (pounds per pound of coating solids), as applied

2. Document that the value of C in Equation 3 is obtained from the VOC and solids content of the as applied finishing material.

3. Comply with the requirements, and determine the actual overall efficiency of the control device, using the procedures of ss. NR 439.055, 439.06, 439.07 and 439.075.

4. Demonstrate compliance when R as determined under subd. 1. is greater than or equal to the overall efficiency of the control device determined under subd. 3.

(4) APPLICATION TECHNOLOGY. After September 1, 1996, an owner or operator of a wood furniture manufacturing facility may use conventional air spray to apply finishing materials only under any of the following conditions:

(a) When applying finishing materials that have an as applied VOC content no greater than 1.0 kilogram per kilogram of solids (1.0 pound per pound of solids).

(b) When applying final touch-up and repair finishing materials.

(c) When using a control device to meet the applicable requirements of this section.

(4m) CLEANING MATERIAL WORK PRACTICES. Beginning on March 1, 2013, the owner or operator of a facility subject to this subsection shall do all of the following:

(a) Use cleaning materials containing no more than 8.0% by weight VOC for cleaning spray booth components other than conveyors, continuous coaters and their enclosures, or metal or plastic filters.

(b) Store VOC-containing cleaning materials in closed containers.

(c) Collect all VOC-containing cleaning material used to clean spray guns and spray gun lines in a container and keep the container covered except when adding or removing material.

(d) Control emissions of VOC-containing cleaning material from washoff operations by doing both of the following:

1. Equipping the tank used for washoff operations with a cover and keeping the cover closed whenever the tank is not being used.

2. Minimizing dripping by tilting or rotating the part to drain as much cleaning material as possible into the tank.

(e) Use strippable spray booth materials containing no more than 0.8 pound of VOC per pound of solids, as applied.

(5) INITIAL COMPLIANCE CERTIFICATION AND NOTIFICATION REQUIREMENTS. (a) *Emission limitations.* Any owner or operator subject to this section shall submit a written notification to the department within 60 days after the compliance deadline in sub. (2), or upon changing the method of operation when such a change would result in a change in the emission limitations applicable under sub. (2). The notification shall contain:

1. The name and location of the facility.

2. The name or identification number of all finishing operations subject to this section and the applicable emission limitations.

3. Certification that all wood furniture finishing operations are in compliance with the applicable emission limitations.

(b) *Emission averaging.* Any owner or operator of a wood furniture manufacturing facility achieving compliance with the emission limitations of sub. (2) by means of the emission averaging method allowed under sub. (3) (a) shall notify the department by 60 days prior to the compliance deadline in sub. (2), upon startup of a new finishing operation, or upon changing the method of compliance to sub. (3) (a). The notification shall contain:

1. The name and location of the facility.

2. The name or identification number of each coating which will participate in the average and the coating line or lines on which it will be applied.

3. A description of the method by which the owner or operator will measure or calculate the kilograms (pounds) of solids or liters (gallons) of finishing material applied each day.

4. An example of the format in which the records required under sub. (6) will be kept.

(6) RECORDKEEPING REQUIREMENTS. In addition to the applicable requirements in s. NR 439.04, any owner or operator subject to this section shall collect and record the following information for each coating line or finishing operation:

(a) A unique name or identification number for each affected finishing material and strippable spray booth coating.

(b) The VOC content of each affected finishing material, as applied, and each strippable spray booth coating, as applied, in units of kilograms VOC per kilogram of solids (pounds VOC per pound of solids).

(c) If compliance is being achieved under the provisions of sub. (3) (a), the total daily actual and allowable VOC emissions as calculated using the equations in sub. (3) (a) and all information used in the calculations.

(d) Notwithstanding s. NR 439.04 (5) (e), if compliance is being achieved with the emission limitations in sub. (2) by the use of a control device, all of the following:

1. The overall efficiency of the control system needed to demonstrate compliance as determined under sub. (3) (b) on a daily basis.

2. The actual overall efficiency of the control system as determined under sub. (3) (b).

3. On a daily basis, the compliance status of all finishing operations achieving compliance under sub. (3) (b).

4. Control device monitoring data.

5. A log of operating times for the capture system, control device, monitoring devices and the associated coating line or operation.

6. The maintenance log for the capture system, control device and monitoring equipment detailing all routine and non- routine maintenance performed and including dates and duration of any outages.

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

History: Cr. Register, August, 1995, No. 476, eff. 9-1-95; am. (4) (intro.), Register, October, 1999, No. 526, eff. 11-1-99; CR 00-160: am. (4) (intro.), Register August 2001 No. 548, eff. 9-1-01; CR 11-005: renum. (1) to be (1) (a) and am., cr. (1) (b), (4m) Register January 2012 No. 673, eff. 2-1-12.

NR 422.127 Use of adhesives — part 1. (1) APPLICABILITY. This section applies to the use of adhesives or adhesive primers on wood furniture, office partitions, or wood entry or passage doors process lines in any facility that is involved in the manufacturing of wood furniture, office partitions, or wood entry or passage doors. This section does not apply to any of the following:

(a) Furniture metal coating lines subject to s. NR 422.10 or 422.105.

(b) Miscellaneous metal parts and products coating lines subject to s. NR 422.15 or 422.151.

(c) Beginning on June 1, 2022, the use of adhesives or adhesive primers at any facility meeting the applicability requirements contained in s. NR 422.128 (1).

(2) EXEMPTIONS. (am) The emission limitations in sub. (3) do not apply to any of the following:

1. A facility which is located outside the counties of Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha.

2. A facility which has total emissions of VOCs from the use of adhesives and adhesive primers of less than 50 pounds per month when averaged over any 12 consecutive months.

3. An emissions unit which never applies more than one pint of adhesives in a day.

(bm) The cleaning material work practice requirements in sub. (3m) do not apply to any of the following:

1. A facility which is located outside the counties of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, and Waukesha.

2. A facility which is located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, or Waukesha and which has VOC emissions from all industrial cleaning operations associated with use of adhesives or adhesive primers and related cleaning activities at the facility, before consideration of controls, less than 3 tons on a 12 consecutive month rolling basis.

(3) EMISSION LIMITATIONS. (a) After June 30, 1996, no owner or operator of a facility which is subject to this subsection may cause, allow or permit the use of any adhesive or adhesive primer unless it meets one of the following conditions:

1. The adhesive or adhesive primer has a solids content greater than or equal to 23% by weight, as applied.

2. The adhesive or adhesive primer does not result in the emission of any VOCs in excess of 0.54 kilogram per liter (4.5 pounds per gallon) of adhesive or adhesive primer, excluding water, delivered to an applicator that applies adhesive or adhesive primer.

(b) Subject to natural resources board approval, after May 1, 1999, no owner or operator of a facility which is subject to this subsection may cause, allow or permit the emission of any VOCs in excess of 0.54 kilogram per liter (4.5 pounds per gallon) of adhesive or adhesive primer, excluding water, delivered to an applicator that applies adhesive or adhesive primer.

(3m) CLEANING MATERIAL WORK PRACTICES. Beginning on March 1, 2013, the owner or operator of a facility subject to this subsection shall do all of the following:

(a) Store all VOC-containing cleaning materials and shop towels used for cleaning in closed containers.

(b) Ensure that storage containers used for VOC-containing materials are kept closed at all times except when depositing or removing material.

(c) Convey VOC-containing cleaning materials in closed containers or pipes.

(d) Minimize spills of VOC-containing cleaning materials.

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

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ing that cleaning is performed without atomizing any VOC-containing cleaning material and that the used material is captured and contained.

(4) RECORDKEEPING REQUIREMENTS. (a) The owner or operator of any facility that is exempt under sub. (2) (am) 2. shall collect and record the following information to support the exemption:

1. A unique name or identification number for each adhesive and adhesive primer used.

2. The VOC content of each adhesive and adhesive primer, as applied, in units of pounds per gallon, excluding water.

3. The volume of each adhesive and adhesive primer used per month, as applied, in units of gallons, excluding water.

4. The total VOC emissions from adhesives and adhesive primers used in units of pounds per month.

(b) The owner or operator of any facility that claims an exemption under sub. (2) (am) 3. shall collect and record the volume of adhesives applied per day for each emissions unit for which an exemption is claimed.

(c) In addition to the applicable requirements in s. NR 439.04, the owner or operator of any facility subject to sub. (3) shall collect and record the following information, as applicable:

1. A unique name or identification number for each adhesive and adhesive primer used.

2. The VOC content of each adhesive and adhesive primer, as applied, in units of kilograms per liter (pounds per gallon), excluding water.

3. The percent solids by weight in each adhesive or adhesive primer, as applied.

(d) Records required under this subsection shall be maintained for a period of 5 years.

History: Cr. Register, August, 1995, No. 476, eff. 9-1-95; CR 11-005: renum. (2) (intro.), (a), (b), (c) to be (2) (am) (intro.), 1., 2., 3., cr. (2) (bm), (3m), am. (4) (a) (intro.), (b) Register January 2012 No. 673, eff. 2-1-12; CR 20-088: am. (title), (1) (intro.), (a), (b), cr. (1) (c) Register May 2022 No. 797, eff. 6-1-22.

NR 422.128 Use of adhesives — part 2. (1) APPLICABILITY. Beginning on June 1, 2022, this section applies to adhesives or adhesive primers application processes at a facility that meets all of the following criteria:

(a) The facility is located in any of the following areas:

1. An area that is classified as a moderate, serious, severe, or extreme ozone nonattainment area.

2. Any area that meets all the following criteria:

a. The area had been classified as a moderate, serious, severe, or extreme ozone nonattainment area for a National Ambient Air Quality Standard, as defined in s. NR 489.02 (21), for ozone promulgated in or after 2008.

b. The area was subsequently reclassified as a marginal ozone nonattainment area or redesignated to an attainment area for ozone.

(b) The facility has actual VOC emissions from the use of adhesives and adhesive primers, before consideration of controls, equal to or greater than 2.7 tons per year based on any consecutive 12-month period.

(2) EXEMPTIONS. (a) Any adhesive or adhesive primer application process subject to s. NR 421.04, 422.06, 422.075, 422.08, 422.105, 422.115, 422.131, 422.141, 422.143, or 422.144 is exempt from the requirements of this section.

(b) All of the following types of adhesives and adhesive primers application processes are exempt from the VOC emission limitations specified under sub. (3):

1. Adhesives or adhesive primers being tested or evaluated in any research and development, quality assurance, or analytical laboratory.

2. Adhesives or adhesive primers used in the assembly, repair, or manufacture of aerospace or undersea-based weapon systems.

3. Adhesives or adhesive primers used in medical equipment manufacturing operations.

4. Cyanoacrylate adhesive application processes.

5. Aerosol adhesive application processes.

6. Processes using polyester bonding putties to assemble fiberglass parts at fiberglass boat manufacturing facilities and at other reinforced plastic composite manufacturing facilities.

7. Processes using adhesives and adhesive primers that are supplied to the manufacturer in containers with a net volume of 16 ounces or less or a net weight of one pound or less.

(3) EMISSION LIMITS. (a) Except as specified under par. (b), the owner or operator of an affected adhesive or adhesive primer application process located at an affected facility under this section shall use the low-VOC adhesives or adhesive primers that meet the VOC content limits in Table 2C for the affected adhesive or adhesive primer application processes. For general adhesive application processes using an adhesive to bond dissimilar substrates, the highest VOC emission limitation applies.

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Table 2C
VOC Content Limitations for Adhesives and Adhesive Primers

[gram/liter (pounds/gallons) of adhesive or adhesive primer, excluding water and exempt compounds listed in s. NR 400.02 (162) (a), as applied]

Type of Adhesive Application Process	Maximum VOC Content
1. General adhesive application processes (see Note)	
a. Reinforced plastic composite	200 (1.7)
b. Flexible vinyl	250 (2.1)
c. Metal	30 (0.3)
d. Porous material (except wood)	120 (1.0)
e. Rubber	250 (2.1)
f. Wood	30 (0.3)
g. Other substrates	250 (2.1)
2. Specialty adhesive application processes	
a. Ceramic tile installation	130 (1.1)
b. Contact adhesive	250 (2.1)
c. Cove base installation	150 (1.3)
d. Floor covering installation (indoor)	150 (1.3)
e. Floor covering installation (outdoor)	250 (2.1)
f. Floor covering installation (perimeter bonded sheet vinyl)	660 (5.5)
g. Metal to urethane/rubber molding or casting	850 (7.1)
h. Motor vehicle adhesive	250 (2.1)
i. Motor vehicle weatherstrip adhesive	750 (6.3)
j. Multipurpose construction	200 (1.7)
k. Plastic solvent welding (ABS)	400 (3.3)
L. Plastic solvent welding (except ABS)	500 (4.2)
m. Sheet rubber lining installation	850 (7.1)
n. Single-ply roof membrane installation/repair (except EPDM)	250 (2.1)
o. Structural glazing	100 (0.8)
p. Thin metal laminating	780 (6.5)
q. Tire repair	100 (0.8)
r. Waterproof resorcinol glue	170 (1.4)
3. Adhesive primer application processes	
a. Motor vehicle glass bonding primer	900 (7.5)
b. Plastic solvent welding adhesive primer	650 (5.4)
c. Single-ply roof membrane adhesive primer	250 (2.1)
d. Other adhesive primer	250 (2.1)

Note: The VOC content limits for the adhesive and application types under Table 2C rows 1. a. to g. apply to any adhesive or adhesive primer that does not meet the definitions for the specific coatings listed under Table 2C rows 2. a. to 3. d.

(b) If the low-VOC adhesives or adhesive primers that meet the VOC content limits required under par. (a) are not used at an affected facility, the owner or operator shall use add-on control equipment that achieves a minimum overall emission reduction efficiency of 85 percent for VOC.

(4) APPLICATION METHODS. An owner or operator of an affected facility under this section shall use one or a combination of the following application methods:

(a) Electrostatic application.

(b) High-volume, low-pressure spray equipment.

(c) Flow coating.

(d) Roll coating or hand application, including non-spray application methods similar to hand or mechanically powered caulking gun, brush, or direct hand application.

(e) Dip coating, including electrodeposition.

(f) Airless spray.

(g) Air-assisted airless spray.

(h) Other adhesive application methods that are capable of achieving a transfer efficiency equivalent to or better than that achieved by high-volume, low-pressure spraying and are approved by the department in writing.

(5) ADD-ON CONTROL EQUIPMENT REQUIREMENTS. An owner or operator that uses add-on control equipment as described under sub. (3) (b) shall comply with the applicable monitoring, testing, and recordkeeping requirements specified under ss. NR 439.04 (5) (e), 439.055, and 439.075.

(6) WORK PRACTICES FOR ADHESIVE APPLICATION PROCESSES. The owner or operator of an affected facility under this section shall do all of the following for adhesive or adhesive primer application processes:

(a) Store all VOC-containing adhesives, adhesive primers, and process-related waste materials in closed containers.

(b) Ensure that mixing and storage containers used for VOC-containing adhesives, adhesive primers, and process-related waste materials are kept closed at all times, except when depositing or removing those materials.

(c) Minimize spills of VOC-containing adhesives, adhesive primers, and process-related waste materials.

(d) Convey VOC-containing adhesives, adhesive primers, and process-related waste materials from one location to another in closed containers or pipes.

(7) CLEANING MATERIAL WORK PRACTICES. The owner or operator of an affected facility under this section shall do all of the following for cleaning materials:

(a) Store all VOC-containing cleaning materials and used shop towels in closed containers.

(b) Ensure that storage containers used for VOC-containing materials are kept closed at all times, except when depositing or removing those materials.

(c) Convey VOC-containing cleaning materials from one location to another in closed containers or pipes.

(d) Minimize spills of VOC-containing cleaning materials.

(e) Minimize emissions of VOCs during cleaning of coating application, storage, mixing, and conveying equipment by ensuring that cleaning is performed without atomizing any VOC-containing cleaning material and that the used material is captured and contained.

(8) RECORDKEEPING REQUIREMENTS. (a) An owner or operator subject to the VOC content limitations under sub. (3) (a) shall maintain records as described under s. NR 439.04 (5) (a).

(b) Records required under this subsection shall be kept for the time period specified under s. NR 439.04 (2).

(9) COMPLIANCE SCHEDULE AND CERTIFICATION. (a) *Compliance schedule.* The owner or operator of a facility shall com-

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ply with the applicable requirements of this section upon the facility becoming subject to this section as provided under sub. (1), except for any of the following:

1. The owner or operator of a facility subject to this section that commenced construction before June 1, 2022, shall comply with applicable requirements of this section by November 28, 2022. Any facility that was subject to s. NR 422.127 before June 1, 2022, shall continue to comply with the requirements in s. NR 422.127 until the date when the facility is in compliance with the applicable requirements of this section or until November 28, 2022, whichever is sooner.

2. The owner or operator of a facility that becomes subject to this section due to either the designation or the reclassification of a nonattainment area that occurs after June 1, 2022, shall comply with applicable requirements of this section within 180 days after the effective date of the nonattainment designation or reclassification, as indicated by the relevant Federal Register publication.

(b) *Certification.* No later than 60 days after the compliance deadline specified under par. (a), the owner or operator of a facility subject to this section shall submit to the department written certification that all affected adhesive or adhesive primer application processes are in compliance with the applicable requirements of this section. The owner or operator of a facility subject to s. NR 422.127 before June 1, 2022, that is required to have an operation permit under ch. NR 407 shall submit to the department a permit application or a permit revision or renewal application that meets the requirements of s. NR 407.05 to meet this certification requirement, except that no application shall be required for a source operating under a general operation permit or a registration operation permit issued under s. NR 407.10 or 407.105.

History: CR 20-088: cr. Register May 2022 No. 797, eff. 6-1-22; correction in (9) (a) 1. made under s. 13.92 (4) (b) 14., Stats., Register May 2022 No. 797.

NR 422.13 Flat wood panel coating — part 1. (1) APPLICABILITY. This section applies, subject to the provisions of s. NR 425.03, to the coating lines of flat wood panel facilities involved in the surface coating of printed interior panels made of hardwood plywood and thin particleboard, natural finish hardwood plywood panels, or hardboard paneling with class II finishes. This section does not apply to the manufacture of exterior siding, tileboard, or particleboard used as a furniture component; or to sources exempted under s. NR 422.03.

(2) EMISSION LIMITATIONS. No owner or operator of a flat wood panel coating line may cause, allow or permit the emission of any VOCs from a coating application system in excess of:

(a) 2.9 kilograms per 100 square meters of coated finished product (6.0 pounds per 1,000 square feet) from printed interior panels, regardless of the number of coats applied.

(b) 5.8 kilograms per 100 square meters of coated finished product (12.0 pounds per 1,000 square feet) from natural finish hardwood plywood panels, regardless of the number of coats applied.

(c) 4.8 kilograms per 100 square meters of coated finished product (10.0 pounds per 1,000 square feet) from class II finishes on hardboard panels, regardless of the number of coats applied.

History: Renum. from NR 154.13 (4) (k), Register, September, 1986, No. 369, eff. 10-1-86; am. (2) (intro.), Register, February, 1990, No. 410, eff. 3-1-90; CR 08-102: am. (title) Register July 2009 No. 643, eff. 8-1-09.

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 November 1, 2009, 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.

History: CR 08-102: cr. Register July 2009 No. 643, eff. 8-1-09.

NR 422.132 Wood door coating. (1) APPLICABILITY. (am) Except as provided in par. (bm), this section applies to the wood entry or passage door coating lines of any wood entry or passage door coating facility that is either of the following:

1. Located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Washington, or Waukesha and which has maximum theoretical emissions of VOC from all wood entry or passage door coating at the facility greater than or equal to 25 tons per year.

2. Located in the county of Kewaunee, Manitowoc, or Sheboygan and which has maximum theoretical emissions of VOC from all wood entry or passage door coating at the facility greater than or equal to 100 tons per year.

(bm) This section does not apply to either of the following:

1. Flat wood panel coating lines subject to s. NR 422.13.

2. Adhesives and adhesive primers subject to s. NR 422.127.

(2) EMISSION LIMITATIONS AND APPLICATION REQUIREMENTS. (a) No owner or operator of an automated wood entry or passage door coating line may cause, allow or permit the emission of any VOCs in excess of:

1. 0.77 kilograms per liter (6.9 pounds per gallon) of coating, excluding water, delivered to an applicator that applies any coating on or after May 31, 1995, but before May 1, 1997.

2. 0.64 kilograms per liter (5.7 pounds per gallon) of coating, excluding water, delivered to an applicator that applies any coating on or after May 1, 1997.

(b) An owner or operator of a wood entry or passage door coating facility shall only apply coatings using electrostatic application, flow coating, dip coating, a low-pressure spray method, paint brush, hand roller or roll coater. All applications equipment

shall be in proper operating condition and used in accordance with proper operating procedures.

(3) RECORDKEEPING REQUIREMENTS. Any facility subject to this section shall comply with the requirements applicable under s. NR 439.04 (5).

History: Cr. Register, August, 1994, No. 464, eff. 9-1-94; r. and recr. (1) (c), Register, August, 1995, No. 476, eff. 9-1-95; CR 11-005: renum. (1) (intro.) to be (1) (am) (intro.) and am., r. (1) (a), cr. (1) (am) 1., 2., (bm) (intro.), renum. (1) (b), (c) to be (1) (bm) 1., 2. Register January 2012 No. 673, eff. 2-1-12.

NR 422.135 Molded wood parts or products. (1) APPLICABILITY. (am) Except as provided in par. (b), this section applies to molded wood parts or products coating lines of any molded wood parts or products coating facility that is either of the following:

1. Located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Washington, or Waukesha and which has maximum theoretical emissions of VOC from all wood entry or passage door coating at the facility greater than or equal to 25 tons per year.

2. Located in the county of Kewaunee, Manitowoc, or Sheboygan and which has maximum theoretical emissions of VOC from all wood entry or passage door coating at the facility greater than or equal to 100 tons per year.

(b) This section does not apply to the use of topcoats which are applied as a stripe not more than 1/2 inch in width to croquet balls and whose use in aggregate never exceeds 500 gallons in a year, as applied.

(2) EMISSION LIMITATIONS. (a) No owner or operator of a molded wood parts or products coating facility which uses flow coating to apply topcoats may cause, allow or permit the emission of any VOCs in excess of the limitations specified in Table 3.

(b) No owner or operator of a molded wood parts or products coating facility which applies a topcoat using any application method other than flow coating may cause, allow or permit the emission of any VOCs in excess of the limitations specified in Table 4.

Table 3
Emission Limitations For Facilities Using Flow Coating To Apply Topcoats
[kilograms per liter (pounds per gallon) of coating, excluding water, delivered to a coating applicator]

Coating	Between May 30, 1995 and May 1, 1997	On and After May 1, 1997
White pigmented prime coating	0.30 (2.5)	0.30 (2.5)
Tinted pigmented prime coating	0.33 (2.75)	0.33 (2.75)
Topcoat	0.64 (5.3)	0.42 (3.5)

Table 4
Emission Limitations For Facilities Using Application Methods Other Than Flow Coating To Apply Topcoats
[kilograms per liter (pounds per gallon) of coating, excluding water, delivered to a coating applicator]

Coating	Between May 30, 1995 and November 15, 1996	On and After November 15, 1996
Prime coat	0.71 (5.9)	0.30 (2.5)
Topcoat	0.42 (3.5)	0.42 (3.5)

(3) RECORDKEEPING REQUIREMENTS. Any facility subject to this section shall comply with the requirements applicable under s. NR 439.04 (5).

History: Cr. Register, August, 1994, No. 464, eff. 9-1-94; CR 00-174: am. (2) (a) and (b), renum. Tables 2 and 3 to be Tables 3 and 4, Register August 2001 No. 548, eff. 9-1-01; CR 11-005: renum. (1) (intro.) to be (1) (am) (intro.) and am., r. (1) (a), cr. (1) (am) 1., 2., am. (1) (b) Register January 2012 No. 673, eff. 2-1-12.

NR 422.14 Graphic arts. (1) APPLICABILITY. (a) Subsections (2), (3), and (5) apply to the printing lines of all packaging rotogravure, publication rotogravure, and flexographic printing facilities that are either of the following:

1. Located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Washington, or Waukesha and which have maximum theoretical emissions of VOC from the facility greater than or equal to 25 tons per year.

2. Located outside of the counties of Kenosha, Milwaukee, Ozaukee, Racine, Washington, and Waukesha and which have maximum theoretical emissions of VOC from the facility greater than or equal to 100 ton per year.

(b) Except as provided in sub. (1m), subs. (4) and (5) apply to the owner or operator of any rotogravure printing press, except flexible packaging rotogravure, or any flexographic printing press, except flexible packaging flexographic, at a facility 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.

(1m) EXEMPTIONS. The following exemptions are applicable to various provisions of this section:

(a) Subsection (4) does not apply to the stripping of cured coatings or cured inks.

(b) Subsection (4) (a) does not apply to cleaning conducted in conjunction with performance laboratory testing on coatings or inks; research and development programs; and laboratory tests in quality assurance laboratories.

(c) Subsection (4) (a) and (e) 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 (4) (a), (d), (e), and (f) do not apply to digital printing.

(e) Subsection (4) (e) does not apply to cleaning with solvents or solvent solutions in spray bottles or containers described in sub. (4) (b) 2.

(f) Subsection (4) (e) 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.

(2) EMISSION LIMITATIONS. No owner or operator of a packaging rotogravure, publication rotogravure or flexographic printing line may operate, or cause, allow or permit the operation of the line unless one of the following requirements is met:

(a) The volatile fraction of ink, as it is applied to the substrate, contains 25% by volume or less of VOC and 75% by volume or more of water.

(b) The ink, as it is applied to the substrate, less water, contains 60% by volume or more nonvolatile material.

(c) The owner or operator installs and operates one of the following:

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

2. An incineration or catalytic oxidation system, provided that 90% by weight of the VOCs, VOC measured as total combustible carbon, which enter the incinerator or oxidation unit are oxidized to nonorganic compounds.

3. An alternative VOC emission reduction system demonstrated to have at least a 90% reduction efficiency, as measured across the control system, and approved by the department. Any approval granted by the department under this subdivision shall be submitted to, and will not become effective for federal purposes until approved by, the administrator or designee as a source-specific revision to the department's state implementation plan for ozone.

(3) CONTROL SYSTEM. The overall emission reduction efficiency of any capture system and control device used in conjunction with sub. (2) (c) shall be at least:

(a) 75% where a publication rotogravure process is employed.

(b) 65% where a packaging rotogravure process is employed.

(c) 60% where a flexographic printing process is employed.

(4) INDUSTRIAL CLEANING OPERATIONS. Beginning on March 1, 2013, the owner or operator of a facility subject to this subsection shall meet the requirements of this subsection:

(a) *Solvent and solvent solution requirements.* Except as provided under par. (d), no owner or operator of a facility may cause, allow or permit the use of a solvent or solvent solution for industrial cleaning operations unless the VOC content of the solvent or solvent solution is less than or equal to the applicable VOC content listed in Table 4 for the respective cleaning operation. For the purposes of this subsection, VOC content shall be defined as in s. NR 423.02 (11r).

Table 4
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)
1.	Product cleaning or surface preparation during manufacturing process	0.05 (0.42)
2.	Repair cleaning or maintenance cleaning	0.05 (0.42)
3.	Cleaning of ink application equipment	
	a. Flexographic except flexible packaging and except ultraviolet	0.05 (0.42)
	b. Non-flexible packaging rotogravure except ultraviolet	0.05 (0.42)
	c. Publication rotogravure except ultraviolet	0.10 (0.83)
	d. Ultraviolet	0.65 (5.4)

(b) *Cleaning devices and methods requirements.* Except as provided under par. (d), the owner or operator of a facility shall comply with the following requirements associated with the identified cleaning devices or methods when using solvents or solvent solutions:

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

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

3. 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.

4. A remote reservoir cleaner operated in compliance with all of the following requirements:

a. 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.

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

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

d. 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.

5. 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.

6. 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.

(c) *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.

(d) *Control equipment.* In lieu of complying with the requirements in pars. (a) and (b), 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:

1. 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).

2. 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,

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with no dilution, as determined in accordance with s. NR 439.06 (3) (a).

(e) *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 par. (d).

(f) *Alternative compliance option.* In lieu of complying with the requirements in par. (a), 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.

(5) RECORDKEEPING. In addition to the applicable recordkeeping requirements in s. NR 439.04, the owner or operator of any packaging rotogravure, publication rotogravure or flexographic printing facility 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 a department representative at any time during normal working hours. The information required is:

(a) For each operation that is exempt under sub. (1m) (c), the daily quantity in fluid ounces of VOC-containing aerosol product used for industrial cleaning operations.

(b) For each operation that is subject to sub. (4), the following information as appropriate:

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

2. The VOC content of each cleaning material, in pounds per gallon of material, as employed or the VOC composite partial vapor pressure of the solvents or solvent solutions used in industrial cleaning operations.

3. For any operation subject to sub. (4) (d), the results of any testing conducted as required under sub. (4) (d).

History: Renum. from NR 154.13 (2) (l) and am. Register, September, 1986, No. 369, eff. 10-1-86; am. (2) (intro.), Register, February, 1990, No. 410, eff. 3-1-90; am. (2) (a), (c) 2. and 3., (3) (intro.), (b) and (c), Register, December, 1993, No. 456, eff. 1-1-94; am. (2) (c) (intro.), 3., Register, December, 1995, No. 480, eff. 1-1-96; am. (2) (intro.), (a) and (b), Register, October, 1999, No. 526, eff. 11-1-99; CR 11-005: renum. (1) to be (1) (a) (intro.) and am., cr. (1) (a) 1., 2., (b), (1m), (4), (5) Register January 2012 No. 673, eff. 2-1-12; CR 20-088: am. (1m) (intro.) Register May 2022 No. 797, eff. 6-1-22.

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 August 1, 2009. 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 August 1, 2009. 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 August 1, 2009. 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 August 1, 2009. 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 November 1, 2009, 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.

History: CR 08-102: cr. Register July 2009 No. 643, eff. 8-1-09.

NR 422.142 Lithographic printing — part 1. (1) APPLICABILITY. (a) This section applies to all lithographic printing presses at any facility that is located in Kewaunee or Manitowoc county, was constructed before July 1, 2019, and has maximum theoretical emissions of VOCs from all lithographic printing presses at the facility greater than or equal to 755.7 kilograms (1666 pounds) in any month.

(b) To determine VOC emissions under par. (a), the VOC content of a lithographic ink shall be multiplied by 0.8 for a heatset ink, or multiplied by 0.05 for a non-heatset ink, to account for VOC retention on the substrate.

(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:

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(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, as defined in s. NR 422.02 (7c), where the VOC composite partial vapor pressure of the automatic blanket or roller wash is less than 10 mm of Hg at 20°C (68°F).

(2) EMISSION LIMITATIONS. (a) *Dryer exhaust.* Any person who owns or operates a heatset web lithographic printing press shall maintain the dryer pressure lower than the press room pressure at all points inside the dryer, and shall:

1. Reduce VOC emissions from the press dryer exhaust by 90% by weight of total organics, minus methane and ethane, or maintain a maximum dryer exhaust outlet concentration of 20 ppmv, as carbon.

2. If the dryer exhaust is controlled by a catalytic incinerator installed or modified before January 1, 1982, reduce VOC emissions from the press dryer exhaust by 85% by weight of total organics, minus methane and ethane.

(b) *Fountain solutions.* 1. 'Heatset web presses.' Any person who owns or operates a heatset web lithographic printing press shall, when printing on a substrate other than metal, metal-foil or plastic, 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.' Any person who owns or operates a non-heatset web lithographic printing press shall, when printing on a substrate other than metal, metal-foil or plastic, use a fountain solution which has a VOC content as applied of no more than 5.0% by weight and which contains no restricted alcohol.

3. 'Sheet-fed presses.' Any person who owns or operates a sheet-fed lithographic printing press shall, when printing on a substrate other than metal, metal-foil or plastic, 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.

4. 'Metal, metal-foil or plastic substrates.' Any person who owns or operates any lithographic printing press shall, when printing on a metal, metal-foil or plastic substrate, use a fountain solution which has a VOC content as applied of no more than one of the following:

a. 13.5% by weight if the fountain solution contains any restricted alcohol and is refrigerated to 60°F or less.

b. Not more than that allowed under subd. 1. a. or c., 2., or 3. a., as appropriate for the type of press operated.

(c) *Cleaning solutions.* 1. Except as provided in subd. 2., any person who owns or operates any lithographic printing press shall use a cleaning solution which, as applied, has any of the following:

a. A VOC content of no greater than 70% by weight.

b. A VOC composite partial vapor pressure of less than or equal to 10 mm of Hg at 20°C (68°F).

2. The owner or operator of a facility may use a cleaning solution that does not meet the emission limitations of subd. 1., provided the amount used at the facility under this subdivision over any 12 consecutive months does not exceed any of the following:

a. If the facility does not print on a plastic substrate, 55 gallons.

b. If the facility does print on a plastic substrate, 165 gallons.

(3) MONITORING REQUIREMENTS. (a) 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. (2) (b) 1. b., 3. b., or 4. a.

(b) The owner or operator of any lithographic printing press subject to the VOC control device requirements of sub. (2) (a) shall comply with the monitoring requirements in s. NR 422.143 (5) (b).

(4) 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 all of the following:

(a) For a heatset web lithographic printing press using a control device, all of the following:

1. Temperature monitoring data for the control device in accordance with sub. (3) (b) for each day of operation.

2. A log or record of any time when the control device or control device monitoring equipment is offline while the associated printing line is in operation.

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

4. Annual inspection results for catalytic oxidizers.

(b) For fountain solutions monitored under sub. (3), 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 chemical name of each restricted alcohol.

(d) For each cleaning solution prepared, the percent by weight VOC content or the VOC composite partial vapor pressure as applied.

(e) For each month of operation, the volume of all cleaning solutions used that do not meet the emission limitations of sub. (2) (c) 1., as allowed under sub. (2) (c) 2.

(5) 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. (2) (a) by performing compliance emission tests on each control device. The initial emission tests shall be performed by the compliance deadline in sub. (6) (a). 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. Method 25A may not be used if the outlet VOC concentration is greater than 100 ppmv, as carbon. When determining the VOC concentration, the probe must 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 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 that demonstrates compliance with sub. (2) (a) every 24 months. Each biennial test shall be performed within 90 days of the anniversary date of the initial emission test or an alternate date approved by the department. The testing exceptions listed in s. NR 439.075 (4) may apply to this test schedule.

2. Any facility with allowable VOC emissions from lithographic printing presses of less than 100 tons per year shall perform an initial emission test that demonstrates compliance with sub. (2) (a).

(c) The VOC content of the as-applied fountain solutions and cleaning solutions shall be determined in accordance with s. NR 422.143 (7) (c).

(d) The VOC composite partial vapor pressure of each cleaning solution shall be determined in accordance with s. NR 422.143 (7) (d).

(6) COMPLIANCE SCHEDULE AND CERTIFICATION REQUIREMENTS. (a) *Compliance schedule.* The owner or operator of a lithographic printing press installed on or before July 1, 1996 shall achieve compliance with the applicable emission limitations of sub. (2) by July 1, 1996. Any person who installs a lithographic printing press after July 1, 1996 shall comply with the applicable emission limitations upon startup of the press.

(b) *Certification.* 1. The owner or operator of a lithographic printing press which is installed on or before July 1, 1996 shall submit to the department no later than September 1, 1996 written certification that the press is in compliance with the applicable requirements of subs. (2) and (3) and shall provide a demonstration of compliance in accordance with subs. (4) and (5). 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. (2) (a), is acceptable as a demonstration of compliance in accordance with sub. (5).

2. The owner or operator of a heatset web lithographic printing press which is installed after July 1, 1996 shall perform a compliance emission test within 180 days after installation 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. (2) and (3) and a demonstration of compliance in accordance with subs. (4) and (5).

3. The owner or operator of any lithographic printing press, other than a heatset web press, which is installed after July 1, 1996 shall submit to the department no later than 180 days after installation written certification that the press is in compliance with the applicable requirements of subs. (2) and (3) and a demonstration of compliance in accordance with subs. (4) and (5).

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

History: Cr. Register, June, 1995, No. 474, eff. 7-1-95; am. (2) (c) 1. intro., Register, December, 1996, No. 492, eff. 1-1-97; am. (5) (d), Register, October, 1999, No. 526, eff. 11-1-99; correction in (5) (a) and (d) made under s. 13.93 (2m) (b) 7., Stats., Register October 2003 No. 574; CR 08-102: am. (title), cr. (1m) Register July 2009 No. 643, eff. 8-1-09; CR 11-005: am. (5) (d) Register January 2012 No. 673, eff. 2-1-12; CR 18-067: am. (1) (a), (1m) (f), (2) (c) (title), 1., 2. (intro.), (3) renum. to (3) (a), am. (3) (title), cr. (3) (b), am. (4) (intro.), (a), cr. (4) (a) 4., am. (4) (d), (e), (5) (b) 1., 2., (c), (d) Register June 2019 No. 762, eff. 7-1-19; correction in (3) (b) made under s. 35.17, Stats., Register June 2019 No. 762.

NR 422.143 Lithographic printing — part 2. (1) APPLICABILITY. (a) This section applies to the owner or operator of a printing facility that operates a lithographic printing press and meets all of the following criteria:

1. The facility has 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 to or greater than 3 tons on a 12-consecutive month rolling basis.

2. The facility meets any of the following criteria:

a. The facility is located in Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, or Waukesha County.

b. The facility is constructed or modified on or after July 1, 2019, and is located in Kewaunee or Manitowoc county.

c. The facility is located in any area designated as a moderate, serious, severe, or extreme ozone nonattainment area.

d. The facility is located in any area formerly designated as a moderate, serious, severe, or extreme ozone nonattainment area that has subsequently been redesignated to attainment, except for any facility subject to s. NR 422.142.

(am) When determining the VOC emissions for applicability under this subsection, the VOC emissions shall include the emissions from the use of inks, fountain solutions, and cleaning solutions, as defined in s. NR 422.02 (14m).

(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, as defined in s. NR 422.02 (7c), where the VOC

composite partial vapor pressure of the automatic blanket or roller wash is less than 10 mm of Hg at 20°C (68°F).

(2) EXEMPTIONS. All of the following exemptions apply to lithographic printing operations affected by this section:

(a) Up to 110 gallons of cleaning solutions, on a 12-consecutive month rolling basis, that 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 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 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) *Cleaning solutions.* Except as provided in sub. (2) (a), no owner or operator of a lithographic printing press may cause, allow, or permit the use of a cleaning solution unless the cleaning solution has a VOC content less than 70% 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 November 1, 2009, 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) MONITORING REQUIREMENTS. (a) 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.

(b) The owner or operator of any lithographic printing press subject to the VOC control device requirements of sub. (3) (a) shall comply with all of the following monitoring requirements:

1. Install and operate continuous temperature monitoring and recording equipment that measures and records any of the following temperature of the control device at least once every 15 minutes:

a. The combustion chamber or minimum operating temperature for thermal oxidizers.

b. The catalytic bed inlet temperature for catalytic oxidizers.

2. Meet the instrument requirements in s. NR 439.055 (3) (a) and (4) for the temperature monitoring devices.

3. Maintain the 3-hour average temperature at or above any of the following levels when the associated printing press is in operation:

a. 50°F below the minimum operating temperature specified by the manufacturer for regenerative thermal oxidizers.

b. 50°F below the average temperature measured during the most recent emission test that demonstrated compliance for all other type of oxidizers.

4. For catalytic oxidizers, inspect the catalyst bed material annually for general catalyst condition and any signs of potential catalyst depletion. The owner or operator shall also collect a representative sample of the catalyst from the catalytic oxidizer, in accordance with manufacturer's recommendations, and have it tested to evaluate the catalyst's capability to continue to function at or above the required control efficiency. An evaluation of the catalyst bed material shall be conducted whenever the results of the inspection indicate signs of potential catalyst depletion or poor catalyst condition based on manufacturer's recommendations, but not less than once per year.

5. Perform maintenance for the control devices in accordance with manufacturer's recommendations.

(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 all of the following:

(a) For a heatset web lithographic printing press using a control device, all of the following:

1. Temperature monitoring data for the control device in accordance with sub. (5) (b) 1. for each day of operation.

2. A log or record of any time when the control device or control device monitoring equipment is offline while the associated printing line is in operation.

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

4. Annual inspection results for catalytic oxidizers.

(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 cleaning solution prepared, the percent by weight VOC content or the VOC composite partial vapor pressure for the cleaning solution prepared.

(e) For each month of operation, the volume of all cleaning solutions used that do 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) (am). 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 that 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 or an alternate date approved by the department. The testing exceptions listed in s. NR 439.075 (4) may apply to this test schedule.

2. Any facility with allowable VOC emissions from lithographic printing presses of less than 100 tons per year shall perform an initial emission test that demonstrates compliance with sub. (3) (a).

(c) The VOC content of the as-applied fountain solutions and cleaning solutions shall be determined by any of the following methods:

1. The method referred to in s. NR 439.06 (3) (j).

2. If diluted prior to use, a calculation shall be performed for VOC content that combines the method referred in s. NR 439.06 (3) (j) for the concentrated materials used to prepare the as-applied fountain solution or cleaning solution, and the proportions in which they are mixed to make the as-applied fountain solution or cleaning solution.

(d) The VOC composite partial vapor pressure of each cleaning solution shall be determined by any of the following methods:

1. If diluted prior to use, calculate the VOC composite vapor pressure of the as-applied solvent by using the formula for "VOC composite vapor pressure" as follows:

a. Determine the identity and quantity of each compound in a blended organic solvent.

b. Determine the vapor pressure of each pure VOC component.

c. Calculate the VOC composite partial pressure of the solvent by using the formula for "VOC composite partial pressure." For the purpose of this calculation, the blended solvent shall be assumed to be an ideal solution where "Raoult's Law" applies. The partial vapor pressures of each compound at 68°F shall be used in the formula. The VOC composite partial pressure shall be calculated as follows:

$$PP_c = \sum_{i=1}^{n} \frac{(W_i)(VP_i) / MW_i}{\frac{W_w}{MW_w} + \frac{W_e}{MW_e} + \sum_{i=1}^{n} \frac{W_i}{MW_i}}$$

where:

Wi is the weight of the "i"th VOC compound, in grams.

Ww is the weight of water, in grams.

We is the weight of exempt compound, in grams.

MWi is the molecular weight of the "i"th VOC compound, in grams per gram-mole.

MWw is the molecular weight of water, in grams per gram-mole.

MWe is the molecular weight of the "e"th exempt compound, in grams per gram-mole.

PPc is the VOC composite vapor pressure at 68°F, in mm Hg.

VPi is the vapor pressure of the "i"th VOC compound at 68°F, in mm Hg.

2. If not diluted prior to use, the owner or operator shall use formulation information provided by the supplier, such as a safety data sheet (SDS) or equivalent information from the supplier, as long as it is based on results determined in accordance with the procedure in subd. 1.

(8) COMPLIANCE SCHEDULE AND CERTIFICATION REQUIREMENTS. (am) The owner or operator of a heatset web lithographic printing press that is installed after July 1, 2019, 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 sub. (3) and a demonstration of compliance in accordance with subs. (6), (7), and (8).

(bm) The owner or operator of any lithographic printing press, other than a heatset web press, that is installed after July 1, 2019, 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 sub. (3) and a demonstration of compliance in accordance with subs. (6), (7), and (8).

(c) Facilities subject to this section and located in an area described under sub. (1) (a) 2. c., shall comply with the applicable requirements of this section by the following deadlines:

1. Facilities that were initially constructed in an area described in sub. (1) (a) 2. c., prior to the effective date of its designation as moderate, serious, severe, or extreme ozone nonattainment, shall comply with applicable requirements within 180 days of the effective date of designation.

Published under s. 35.93, Wis. Stats., by the Legislative Reference Bureau.

2. Facilities that were initially constructed in an area described in sub. (1) (a) 2. c., after the area has been designated as moderate, serious, severe, or extreme ozone nonattainment, shall comply with applicable requirements upon startup.

History: CR 08-102: cr. Register July 2009 No. 643, eff. 8-1-09; CR 11-005: renum. (3) (c) to be (3) (c) (intro.) and am., cr. (3) (c) 1., 2., am. (6) (d) Register January 2012 No. 673, eff. 2-1-12; CR 18-067: am. (1) (a), cr. (1) (a) 1., 2., (am), am. (1m) (f), (2) (intro.), (a), (3) (c) (intro.) and 2. cons. and renum. to (3) (c) and am., (5) (a) renum. to (5), am. (5) (title), cr. (5) (b), am. (6) (intro.), (a), cr. (6) (a) 4., am. (6) (d), (e), (7) (a), (b) 1., 2., (7) (c) (renum.) to (7) (c) (intro.) and am., cr. (7) (c) 1., 2., (d), (8) (b) 1. renum. to (8) (am) and am., (8) (b) 2. renum. to (8) (bm) and am., cr. (8) (c) Register June 2019 No. 762, eff. 7-1-19; correction in numbering of (1) (a) made under s. 13.92 (4) (b) 1., and corrections in (1) (a) (intro.), 1., (am), (7) (d) 1. c., 2. made under s. 35.17, Stats., Register June 2019 No. 762; correction in (1) (am) made under s. 13.92 (4) (b) 7., Stats., Register June 2019.

NR 422.144 Letterpress printing. (1) APPLICABILITY. (a) This section applies to the owner or operator of a printing facility that operates a letterpress printing press in the county of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, or Waukesha if actual VOC emissions from all letterpress printing presses, including related letterpress 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 letterpress printing press, pre-press and post-press cleaning operations and the use of janitorial supplies used to clean around a letterpress 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) To determine VOC emissions under par. (a), the VOC content of a letterpress ink shall be multiplied by 0.8 for a heatset ink, or multiplied by 0.05 for a non-heatset ink, to account for VOC retention on the substrate.

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

(a) A 20% VOC retention factor for heatset petroleum oil 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 petroleum oil 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 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).

(3) EXEMPTIONS. The following exemptions apply to letterpress 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 printing of books on a heatset letterpress press is exempt from the requirements of sub. (4) (a).

(c) Heatset letterpress presses with a maximum web width of up to 22 inches are exempt from the requirements of sub. (4) (a).

(4) EMISSION LIMITATIONS. (a) *Dryer exhaust.* 1. Beginning on March 1, 2013, no owner or operator of a heatset web letterpress printing press may operate, or cause, allow or permit the operation of a letterpress 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 February 1, 2012, the owner or operator shall reduce VOC emissions from the letterpress press dryer exhaust by 90% by weight as carbon, minus methane and ethane, or maintain a maximum dryer exhaust outlet VOC concentration of 120 ppmv, as carbon, minus methane and ethane.

b. If the emission control device was first installed after February 1, 2012, the owner or operator shall reduce VOC emissions from the letterpress press dryer exhaust by 95% by weight as carbon, minus methane and ethane, or maintain a maximum dryer exhaust outlet VOC concentration of 120 ppmv, as carbon, minus methane and ethane.

2. The first installation date for a control device for purposes of subd. 1. is the date the device was first ever installed. The first installation date does not change if the device is later moved to a new location.

3. 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) *Blanket or roller wash.* Except as provided in sub. (3) (a), on and after May 1, 2012, no owner or operator of a letterpress printing press may use, or cause, allow or permit the use of a blanket or roller wash with a VOC composite vapor pressure of greater than or equal to 10 mm of Hg at 68°F or greater than or equal to 70% by weight.

(5) WORK PRACTICES. (a) Beginning on February 1, 2012, the owner or operator of a letterpress press subject to this subsection shall store all solvents, solvent solutions and any shop towels or other applicator moistened with solvents or solvent solutions that are used in cleaning operations related to letterpress printing in covered non-absorbent, non-leaking containers, except when filling or emptying the container.

(6) RECORDKEEPING REQUIREMENTS. In addition to the applicable recordkeeping requirements in s. NR 439.04, the owner or operator of any letterpress 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 a department representative at any time during normal working hours. The information required is:

(a) For a heatset web letterpress 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 each blanket or roller wash batch, monthly records of the percent by weight VOC content or the composite partial vapor pressure, as applied, and the date and time the batch was prepared.

(c) 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. (4) (b).

(7) COMPLIANCE TESTING. (a) The owner or operator of a heatset web letterpress printing press shall demonstrate compliance with the appropriate destruction efficiency or emission rate in sub. (4) (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 25 or 25A in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (19) and (20), shall be used to determine the VOC concentration at the sampling points, including the exhaust stream entering and existing the control device. When determining the VOC concentration, the probe shall be heated during testing to at least the exhaust gas stream temperature. In cases where the anticipated outlet VOC concentration of the control device is less than 50 ppmv as carbon, Method 25A shall be used.

(b) The owner or operator of a heatset web letterpress 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 letterpress printing presses of 100 tons or more per year shall perform an emission test which demonstrates compliance with sub. (4) (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 letterpress printing presses of less than 100 tons per year shall perform an emission test which demonstrates compliance with sub. (4) (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 letterpress inks and blanket or roller wash shall be determined by Method 24 of 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13).

(8) COMPLIANCE SCHEDULE AND CERTIFICATION REQUIREMENTS. (a) *Existing sources.* 1. The owner or operator of a letterpress printing press shall comply with the applicable emission limitations for the dryer exhaust in sub. (4) (a) by February 1, 2013.

2. The owner or operator of a heatset web letterpress printing press shall submit to the department, no later than July 1, 2012, written certification that the press is in compliance with the applicable requirements of subs. (4) and (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. (4) (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 letterpress printing press which is installed after May 1, 2012 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. (4) and (5) and a demonstration of compliance in accordance with subs. (6) and (7).

2. The owner or operator of any letterpress printing press, other than a heatset web press, which is installed after May 1, 2012 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. (4) and (5) and a demonstration of compliance in accordance with subs. (6) and (7).

History: CR 11-005: cr. Register January 2012 No. 673, eff. 2-1-12.

NR 422.145 Screen printing. (1) APPLICABILITY. (a) Subsections (2), (3), and (4) apply to all screen printing units at screen printing facilities that are either of the following:

1. Located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Washington, or Waukesha and which have maximum theoretical emissions of VOCs from all screen printing units at the facility equal to or greater than 25 tons per year.

2. Located in the county of Kewaunee, Manitowoc, or Sheboygan and which have maximum theoretical emissions of VOCs from all screen printing units at the facility equal to or greater than 100 tons per year.

(b) Except as provided in sub. (1m), subs. (2m), and (4) apply to the owner or operator of a screen printing facility 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 basis.

(1m) EXEMPTIONS. The following exemptions are applicable to various provisions of this section:

(a) Subsection (2m) does not apply to the stripping of cured coatings or cured inks.

(b) Subsection (2m) (a) does not apply to cleaning conducted in conjunction with performance laboratory testing on coatings or inks; research and development programs; and laboratory tests in quality assurance laboratories.

(c) Subsection (2m) (a) and (e) 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 (2m) (a), (d), (e), and (f) do not apply to digital printing.

(e) Subsection (2m) (e) does not apply to cleaning with solvents or solvent solutions in spray bottles or containers described in sub. (2m) (b) 2.

(f) Subsection (2m) (e) 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.

(2) EMISSION LIMITATIONS. (a) *General.* No owner or operator of a screen printing unit may cause, allow or permit the emission of any VOCs in excess of 0.40 kilograms per liter (3.3 pounds per gallon) of ink or coating, excluding water, delivered to an applicator, except as provided in pars. (b) and (c).

(b) *Special purpose inks and coatings.* No owner or operator of a screen printing unit using a special purpose ink or coating may cause, allow or permit the emission of any VOCs in excess of

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0.80 kilograms per liter (6.7 pounds per gallon) of special purpose ink or coating, excluding water, delivered to an applicator.

(c) *Roll coating.* No owner or operator of a screen printing unit may cause, allow or permit the emission of any VOCs in excess of 0.80 kilograms per liter (6.7 pounds per gallon), excluding water, delivered to a roll coating applicator associated with screen printing.

(2m) INDUSTRIAL CLEANING OPERATIONS. (a) *Solvent and solvent solution requirements.* Except as provided under par. (d), no owner or operator of a facility may cause, allow or permit the use of a solvent or solvent solution for industrial cleaning operations unless the VOC content of the solvent or solvent solution is less than or equal to the applicable VOC content listed in Table 5 for the respective cleaning operation. For the purposes of this subsection, VOC content shall be defined as in s. NR 423.02 (11r).

Table 5
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)
1. Product cleaning or surface preparation during manufacturing process	0.05 (0.42)
2. Repair cleaning or maintenance cleaning	0.50 (4.2)
3. Cleaning of ink application equipment	0.50 (4.2)

(b) *Cleaning devices and methods requirements.* Except as provided under par. (d), the owner or operator of a facility shall comply with the following requirements associated with the identified cleaning devices or methods when using solvents or solvent solutions:

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

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

3. 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.

4. A remote reservoir cleaner operated in compliance with all of the following requirements:

a. 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.

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

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

d. 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.

5. 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.

6. 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.

(c) *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.

(d) *Control equipment.* In lieu of complying with the requirements in pars. (a) and (b), 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:

1. 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).

2. 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).

(e) *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 par. (d).

(f) *Alternative compliance option.* In lieu of complying with the requirements in par. (a), 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.

(3) COMPLIANCE DEADLINE. The owner or operator of a screen printing unit subject to this section on which construction or modification commenced before July 1, 1994 shall achieve final compliance with the emission limitations of sub. (2) not later than May 31, 1995. Any source which is subject to this section and on which construction or modification commenced on or after July 1, 1994 shall meet the emission limitations of sub. (2) upon startup.

(4) RECORDKEEPING. In addition to the applicable recordkeeping requirements in s. NR 439.04, the owner or operator of any screen printing facility shall collect and record the applicable

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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 a department representative at any time during normal working hours. The information required is:

(a) For each operation that is exempt under sub. (1m) (c), the daily quantity in fluid ounces of VOC-containing aerosol product used for industrial cleaning operations.

(b) For each operation that is subject to sub. (2m), the following information as appropriate:

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

2. The VOC content of each cleaning material, in pounds per gallon of material, as employed or the VOC composite partial vapor pressure of the solvents or solvent solutions used in industrial cleaning operations.

3. For any operation subject to sub. (2m) (d), the results of any testing conducted as required under sub. (2m) (d).

History: Cr. Register, June, 1994, No. 462, eff. 7-1-94; CR 11-005: renum. (1) to be (1) (a) (intro.) and am., cr. (1) (a) 1., 2., (b), (1m), (2m), r. (2) (d), r. and recr. (4) Register January 2012 No. 673, eff. 2-1-12; correction made in (1) (a) (intro.), (b) made under s. 13.92 (4) (b) 7. Register January 2012 No. 673; CR 20-088: am. (1m) (intro.) Register May 2022 No. 797, eff. 6-1-22.

NR 422.15 Miscellaneous metal parts and products — part 1. (1) APPLICABILITY. (ag) The requirements of this section do not apply to any facility with miscellaneous metal parts and products coating operations meeting the applicability requirements contained in s. NR 422.151 (1) beginning on June 1, 2022.

(am) Except as provided in par. (cm), subs. (2) to (8) apply to all coating line application areas, conveyors, flashoff areas, drying areas, forced air driers, and ovens of any industry categorized under the 2-digit major groups of 33 to 39 as described in the Standard Industrial Classification Manual, 1987, incorporated by reference in s. NR 484.05 (1), which are involved in the surface coating of miscellaneous metal parts and products in the following counties and at the respective emission thresholds:

1. Any facility located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, or Waukesha and which has VOC emissions, before consideration of controls, from all miscellaneous metal parts and products coating lines are greater than 6.8 kilograms (15 pounds) in any one day.

2. Any facility located in the county of Brown, Calumet, Dane, Dodge, Door, Fond du Lac, Jefferson, Kewaunee, Manitowoc, Outagamie, Rock, Walworth, or Winnebago that has VOC emissions, before consideration of controls, from all miscellaneous metal parts and products coating lines, greater than or equal to 10 tons per year.

3. Any facility located outside the counties of Brown, Calumet, Dane, Dodge, Door, Fond du Lac, Jefferson, Kenosha, Kewaunee, Manitowoc, Milwaukee, Outagamie, Ozaukee, Racine, Rock, Sheboygan, Walworth, Washington, Waukesha, and Winnebago and which has total emissions of VOC from the facility, before consideration of controls, of greater than or equal to 100 tons per year.

(bm) Subsection (9) applies to any facility with coating operations as described in par. (am) which is located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, or Waukesha if VOC emissions from all coating operations, including related cleaning activities, before consideration of controls, equal or exceed 3 tons per year on a 12 consecutive month rolling basis.

(cm) The following activities, materials, and coating lines are exempt from this section:

1. Coating of airplane exteriors.

2. Coating of marine vessels.

3. Automobile refinishing.

4. Customized topcoating of automobiles and trucks if production is less than 35 vehicles per day.

5. Adhesives and materials used to prepare a surface for adhesives at facilities located outside the counties of Door, Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Walworth, Washington, and Waukesha.

6. Sealants or fillers whose purpose is to seal or fill seams, joints, holes and minor imperfections of surfaces, and which are applied at facilities located outside the counties of Door, Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Walworth, Washington, and Waukesha.

7. Coating lines covered under ss. NR 422.05 to 422.12.

8. Coating operations subject to s. NR 422.155.

Note: This section does not apply to the silk screening of metal parts and products. These operations are regulated under s. NR 422.145.

(2) EMISSION LIMITATIONS — CURED COATINGS. No owner or operator of a miscellaneous metal parts or products coating line using a baked or specially cured coating technology may cause, allow or permit the emission of any VOCs in excess of:

(a) 0.52 kilograms per liter (4.3 pounds per gallon) of coating, excluding water, delivered to a coating applicator that applies clear coatings.

(b) 0.42 kilograms per liter (3.5 pounds per gallon) of coating, excluding water, delivered to a coating applicator that applies extreme performance coatings.

(c) 0.36 kilograms per liter (3.0 pounds per gallon) of coating, excluding water, delivered to a coating applicator for all other coatings.

(3) EMISSION LIMITATIONS — AIR DRIED COATINGS. No owner or operator of a miscellaneous metal parts or products coating line using an air dried coating technology may cause, allow or permit the emission of any VOCs in excess of:

(b) After December 31, 1985, 0.52 kilograms per liter (4.3 pounds per gallon) of coating, excluding water, delivered to a coating applicator that applies clear coatings.

(c) After December 31, 1985, 0.42 kilograms per liter (3.5 pounds per gallon) of coating, excluding water, delivered to a coating applicator for all other coatings.

(4) EMISSION LIMITATIONS — PRETREATMENT COATS. This subsection applies to miscellaneous metal parts and products coating lines which are located outside the counties of Door, Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Walworth, Washington, and Waukesha. No owner or operator of a miscellaneous metal parts or products coating line may cause, allow or permit the emission of any VOCs in excess of 0.78 kilograms per liter (6.50 pounds per gallon) of coating, excluding water, delivered to a coating applicator that applies pretreatment coats. Coatings subject to this subsection may not participate in an internal offset under s. NR 425.05 or generate emission reduction credits in an emission reduction option.

(5) EMISSION LIMITATIONS AND REQUIREMENTS — HIGH PERFORMANCE ARCHITECTURAL COATINGS. This subsection applies to miscellaneous metal parts and products coating lines which were involved in the application of high performance architectural coatings, prior to July 1, 1983, and are located outside the counties of Brown, Calumet, Dane, Dodge, Door, Fond du Lac, Jefferson, Kenosha, Kewaunee, Manitowoc, Milwaukee, Outagamie, Ozaukee, Racine, Rock, Sheboygan, Walworth, Washington, Waukesha, and Winnebago.

(a) No owner or operator of a miscellaneous metal parts or products coating line which applies a high performance architec-

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tural coating may cause, allow or permit the emission of any VOCs from the coating in excess of:

1. 0.65 kilograms per liter (5.4 pounds per gallon) of coating, excluding water, delivered to a coating applicator that applies prime coatings.

2. 0.70 kilograms per liter (5.8 pounds per gallon) of coating, excluding water, delivered to a coating applicator for all other coatings.

(b) The owner or operator of a miscellaneous metal parts and products coating line may demonstrate compliance with the emission limits of this subsection by demonstrating, on a daily basis, that the combined emission rate from all high performance architectural coatings is less than or equal to the allowable emission rate as determined by the equation in s. NR 425.05 (2) (b) 2.

(6) CHANGE IN TECHNOLOGY. Miscellaneous metal parts or products coating lines which, prior to January 1, 1980, used a baked or specially cured coating technology shall meet the emission limitations of sub. (2) notwithstanding the coating technology presently in use.

(7) MULTIPLE LIMITATIONS. If more than one emission limitation in sub. (2) applies to a specific coating, then the least stringent emission limitation shall be applied.

(8) SOLVENT WASHINGS. All VOC emissions from solvent washings shall be considered in the emission limitations in subs. (2) and (3), unless the used wash solvent is directed into containers that prevent evaporation into the atmosphere.

(9) WORK PRACTICES. Beginning on March 1, 2013, the owner or operator of a facility subject to this subsection shall do all of the following:

(a) Store all VOC-containing cleaning materials and shop towels used for cleaning in closed containers.

(b) Ensure that storage containers used for VOC-containing materials are kept closed at all times except when depositing or removing material.

(c) Convey VOC-containing cleaning materials in closed containers or pipes.

(d) Minimize spills of VOC-containing cleaning materials.

(e) Minimize emissions of VOC during cleaning of coating application, storage, mixing, and conveying equipment by ensuring that cleaning is performed without atomizing any VOC-containing cleaning material and that the used material is captured and contained.

(10) COMPLIANCE SCHEDULE AND CERTIFICATION. (a) *Compliance schedule.* The owner or operator of a miscellaneous metal parts and products facility described under sub. (1) (am) and located in Kewaunee, Manitowoc, or Walworth county that commenced construction before June 1, 2022, shall comply with the applicable requirements of this section by November 28, 2022.

(b) *Certification.* No later than 60 days after the compliance deadline specified under par. (a), the owner or operator of a miscellaneous metal parts and products facility described in par. (a) shall submit to the department written certification that all affected miscellaneous metal parts and products coating operations are in compliance with the applicable requirements of this section. Any such facility that is required to have an operation permit under ch. NR 407 shall submit to the department a permit application or a permit revision or renewal application that meets the application requirements under s. NR 407.05 to meet this certification requirement, except that no application shall be required for a source operating under a general operation permit or a registration operation permit issued under s. NR 407.10 or 407.105.

History: Renum. from NR 154.13 (4) (m) and am. Register, September, 1986, No. 369, eff. 10-1-86; renum. (4) to (6) to be (5) to (7), cr. (4), Register, July, 1988, No. 391, eff. 8-1-88; am. (1) (h) and (i), cr. (1) (j), Register, April, 1989, No. 400 eff. 5-1-89; am. (1) (i) and (j), cr. (1) (k), Register, August, 1989, No. 404, eff. 9-1-89; am. (1) (b), (2) (intro.) and (3) (intro.), r. (1) (f), renum. (4) to (7) to be (5) to (8) and am. (5) (b), cr. (4), Register, February, 1990, No. 410, eff. 3-1-90; am. (1) (intro.), (e), (g) and (j), (4), (5) (intro.) and (b), Register, December, 1993, No. 456, eff. 1-1-94; am. (1) (intro.), Register, August, 1995, No. 476, eff. 9-1-95; r. (3) (a), Register, December, 1996, No. 492, eff. 1-1-97; r. (1) (j), Register, October, 1999, No. 526, eff. 11-1-99; CR 11-005: renum. (1) (intro.) to be (1) (am) (intro.) and am., cr. (1) (a) 1., 2., 3., (bm), (cm) (intro.), (9), renum. (1) (a) to (e), (g), (h), (k) to be (1) (cm) 1. to 8., r. (1) (i) Register January 2012 No. 673, eff. 2-1-12; CR 20-088: am. (title), cr. (1) (ag), am. (1) (am) 2., cr. (10) Register May 2022 No. 797, eff. 6-1-22; correction in (10) (a) made under s. 13.92 (4) (b) 14., Stats., Register May 2022 No. 797.

NR 422.151 Miscellaneous metal parts and products — part 2. (1) APPLICABILITY. Beginning on June 1, 2022, this section applies to all coating line application areas, conveyors, flashoff areas, drying areas, forced-air driers, and ovens of any industry categorized under the 2-digit major groups of 33 to 39 as described in the Standard Industrial Classification Manual, 1987, incorporated by reference under s. NR 484.05 (1), that are involved in the surface coating of miscellaneous metal parts and products at a facility that meets all of the following criteria:

(a) The facility is located in any of the following areas:

1. An area that is classified as a moderate, serious, severe, or extreme ozone nonattainment area.

2. Any area that meets all the following criteria:

a. The area had been classified as a moderate, serious, severe, or extreme ozone nonattainment area for a National Ambient Air Quality Standard, as defined in s. NR 489.02 (21), for ozone promulgated in or after 2008.

b. The area was subsequently reclassified as a marginal ozone nonattainment area or redesignated to an attainment area for ozone.

(b) The facility has actual VOC emissions, before consideration of controls, from all miscellaneous metal parts and products coating operations, plastic parts coating operations, and related cleaning activities equal to or greater than 2.7 tons per year based on any consecutive 12-month period.

(2) DEFINITIONS. Notwithstanding the definitions contained in s. NR 422.02, the following definitions apply in this section:

(a) 1. "Extreme performance coating" means a coating used on a metal or plastic surface where the coated surface is, in its intended use, subject to any of the following:

a. Chronic exposure to corrosive, caustic or acidic agents, chemicals, chemical fumes, or chemical mixtures or solutions.

b. Repeated exposure to temperatures in excess of 250°F.

c. Repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial grade solvents, cleansers, or scouring agents.

2. "Extreme performance coating" includes coatings applied to locomotives, railroad cars, farm machinery, and heavy-duty trucks.

(b) "Pretreatment coat" means a coating that contains no more than 12 percent solids by weight, and at least 0.50 percent acid, by weight, as measured according to ASTM D1613-02, incorporated by reference under s. NR 484.10 (25m), that is used to provide surface etching, and that is applied to provide corrosion resistance, adhesion, and ease of stripping.

(c) "Pretreatment wash primer" means a coating that contains no more than 12 percent solids, by weight, and at least 0.50 percent acid, by weight, as measured according to ASTM D1613-02, incorporated by reference under s. NR 484.10 (25m), and that is

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used to provide surface etching, corrosion resistance, and adhesion of subsequent coatings.

(d) "Stencil coating" means an ink or a pigmented coating that is rolled or brushed onto a template or stamp in order to add identifying letters, symbols, or numbers.

(e) "Texture coating" means a coating applied to a plastic part that, in its finished form, consists of discrete raised spots of the coating.

(3) EXEMPTIONS. (a) The following activities, materials, and coating lines are exempt from this section:

1. Aerospace coatings.
2. Shipbuilding and repair coatings.
3. Coatings for fiberglass boat manufacturing.
4. Aerosol coating operations.
5. Coatings that are applied to test panels and coupons as part of research and development, quality control, or performance testing activities at paint research or manufacturing facilities.
6. Coating lines covered under ss. NR 422.05 to 422.12.
7. Use of adhesives regulated under s. NR 422.127 or 422.128.

(b) Metal coating operations using the following types of coatings are exempt from the VOC content limitations specified under sub. (4) and the application methods specified under sub. (5):

1. Stencil coatings.
2. Safety-indicating coatings.
3. Solid-film lubricants.
4. Electric-insulating and thermal-conducting coatings.
5. Magnetic data storage disk coatings.
6. Plastic extruded onto metal parts to form a coating.

(c) Metal coating operations using the following types of coatings are exempt from the application methods specified under sub. (5):

1. Touch-up coatings.
2. Repair coatings.
3. Texture coatings.

(4) EMISSION LIMITS. (a) Except as specified under par. (b), the owner or operator of a metal parts coating operation located at an affected facility under this section shall use the low-VOC coatings that meet the VOC content limits in Table 6 for the affected metal coating operations. If more than one VOC content limit applies to a specific coating, the most stringent VOC content limit shall be applied.

Table 6
VOC Content Limitations for Coatings Used in Metal Parts and Products Coating – Low-VOC Coatings
[kilogram/liter (pounds/gallons) of coating, excluding water and exempt compounds listed in s. NR 400.02 (162) (a), as applied]

Coating Application and Type	Maximum VOC Content
1. Air dried (see Note)	
a. General one-component	0.34 (2.8)
b. General multi-component	0.34 (2.8)
c. Camouflage	0.42 (3.5)
d. Electric-insulating varnish	0.42 (3.5)
e. Etching filler	0.42 (3.5)
f. Extreme high-gloss	0.42 (3.5)
g. Extreme performance	0.42 (3.5)
h. Heat-resistant	0.42 (3.5)
i. High performance architectural	0.74 (6.2)
j. High temperature	0.42 (3.5)
k. Metallic	0.42 (3.5)
L. Military specification	0.34 (2.8)
m. Mold-seal	0.42 (3.5)
n. Pan-backing	0.42 (3.5)
o. Prefabricated architectural multi-component	0.42 (3.5)
p. Prefabricated architectural one-component	0.42 (3.5)
q. Pretreatment coatings	0.42 (3.5)
r. Repair and touch up	0.42 (3.5)
s. Silicone release	0.42 (3.5)
t. Solar-absorbent	0.42 (3.5)
u. Vacuum metalizing	0.42 (3.5)
v. Drum coating, new, exterior	0.34 (2.8)
w. Drum coating, new, interior	0.42 (3.5)
x. Drum coating, reconditioned, exterior	0.42 (3.5)
y. Drum coating, reconditioned, interior	0.50 (4.2)
2. Baked (see Note)	
a. General one-component	0.28 (2.3)
b. General multi-component	0.28 (2.3)
c. Camouflage	0.42 (3.5)
d. Electric-insulating varnish	0.42 (3.5)
e. Etching filler	0.42 (3.5)
f. Extreme high-gloss	0.36 (3.0)
g. Extreme performance	0.36 (3.0)
h. Heat-resistant	0.36 (3.0)
i. High performance architectural	0.74 (6.2)
j. High temperature	0.42 (3.5)
k. Metallic	0.42 (3.5)
L. Military specification	0.28 (2.3)
m. Mold-seal	0.42 (3.5)
n. Pan-backing	0.42 (3.5)
o. Prefabricated architectural multi-component	0.28 (2.3)
p. Prefabricated architectural one-component	0.28 (2.3)
q. Pretreatment coatings	0.42 (3.5)
r. Repair and touch up	0.36 (3.0)
s. Silicone release	0.42 (3.5)
t. Solar-absorbent	0.36 (3.0)
u. Vacuum metalizing	0.42 (3.5)
v. Drum coating, new, exterior	0.34 (2.8)
w. Drum coating, new, interior	0.42 (3.5)
x. Drum coating, reconditioned, exterior	0.42 (3.5)
y. Drum coating, reconditioned, interior	0.50 (4.2)
3. Pleasure craft surface coating	
a. Extreme high-gloss topcoat	0.49 (4.1)
b. High gloss topcoat	0.42 (3.5)
c. Pretreatment wash primers	0.78 (6.5)
d. Finish primer surfacer	0.42 (3.5)
e. High build primer surfacer	0.34 (2.8)
f. Aluminum substrate antifoulant coating	0.56 (4.7)
g. Other substrate antifoulant coating	0.33 (2.8)
h. All other pleasure craft surface coatings	0.42 (3.5)

Coating Application and Type (Continued)	Maximum VOC Content
4. Motor vehicle materials	
a. Motor vehicle cavity wax	0.65 (5.4)
b. Motor vehicle sealer	0.65 (5.4)
c. Motor vehicle deadener	0.65 (5.4)
d. Motor vehicle gasket/gasket sealing material	0.20 (1.7)
e. Motor vehicle underbody coating	0.65 (5.4)
f. Motor vehicle trunk interior coating	0.65 (5.4)
g. Motor vehicle bedliner	0.20 (1.7)
h. Motor vehicle lubricating wax/ compound	0.70 (5.8)

Note: The VOC content limits for the coating and application types under Table 6 rows 1. a. to 2. y. apply to any coating that does not meet the definitions for the specific coatings listed under Table 6 rows 3. a. to 4. h.

(b) If the low-VOC coatings that meet the VOC content limits required under par. (a) are not used at an affected facility, the owner or operator shall use add-on control equipment that achieves a minimum overall emission reduction efficiency of 90 percent for VOC.

(5) APPLICATION METHODS. An owner or operator of an affected facility under this section, except for a facility that uses add-on control equipment as described under sub. (4) (b), shall use one or a combination of the following application methods for the affected coating operations:

(a) Electrostatic application.

(b) High-volume, low-pressure spray equipment.

(c) Flow coating.

(d) Roll coating.

(e) Dip coating, including electrodeposition.

(f) Airless spray.

(g) Air-assisted airless spray.

(h) Other coating application methods that are capable of achieving a transfer efficiency equivalent or better than achieved by high-volume, low-pressure spraying and are approved by the department.

(6) ADD-ON CONTROL EQUIPMENT REQUIREMENTS. An owner or operator that uses add-on control equipment as described under sub. (4) (b) shall comply with the applicable monitoring, testing, and recordkeeping requirements under ss. NR 439.04 (5) (e), 439.055, and 439.075.

(7) WORK PRACTICES FOR COATING-RELATED ACTIVITIES. The owner or operator of an affected facility under this section shall do all of the following for coating-related activities:

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

(b) Ensure that mixing and storage containers used for VOC-containing coatings, thinners, and coating-related waste materials are kept closed at all times, except when depositing or removing those materials.

(c) Minimize spills of VOC-containing coatings, thinners, and coating-related waste materials.

(d) Convey VOC-containing coatings, thinners, and coating-related waste materials from one location to another in closed containers or pipes.

(8) CLEANING MATERIAL WORK PRACTICES. The owner or operator of an affected facility under this section shall do all of the following for cleaning materials:

(a) Store all VOC-containing cleaning materials and used shop towels in closed containers.

(b) Ensure that storage containers used for VOC-containing materials are kept closed at all times, except when depositing or removing those materials.

(c) Convey VOC-containing cleaning materials from one location to another in closed containers or pipes.

(d) Minimize spills of VOC-containing cleaning materials.

(e) Minimize emissions of VOCs during cleaning of coating application, storage, mixing, and conveying equipment by ensuring that cleaning is performed without atomizing any VOC-containing cleaning material and that the used material is captured and contained.

(9) RECORDKEEPING REQUIREMENTS. (a) An owner or operator subject to the VOC content limitations under sub. (4) (a) shall maintain records as described under s. NR 439.04 (5) (a).

(b) Records required under this subsection shall be kept for the time period specified under s. NR 439.04 (2).

(10) COMPLIANCE SCHEDULE AND CERTIFICATION. (a) *Compliance schedule.* The owner or operator of a miscellaneous metal parts and products facility shall comply with the applicable requirements of this section upon the facility becoming subject to this section as provided under sub. (1), except for any of the following:

1. The owner or operator of a miscellaneous metal parts and products facility subject to this section that commenced construction before June 1, 2022, shall comply with applicable requirements of this section by November 28, 2022. Any facility that was subject to s. NR 422.15 before June 1, 2022, shall continue to comply with the requirements in s. NR 422.15 until the date when the facility is in compliance with the applicable requirements of this section or until November 28, 2022, whichever is sooner.

2. The owner or operator of a miscellaneous metal parts and products facility that becomes subject to this section due to either the designation or the reclassification of a nonattainment area that occurs after June 1, 2022, shall comply with applicable requirements of this section 180 days after the effective date of the nonattainment designation or reclassification, as indicated by the relevant Federal Register publication.

(b) *Certification.* No later than 60 days after the compliance deadline specified under par. (a), the owner or operator of a miscellaneous metal parts and products facility subject to this section shall submit to the department written certification that all affected miscellaneous metal parts and products coating operations are in compliance with the applicable requirements of this section. The owner or operator of a facility subject to s. NR 422.15 before June 1, 2022, that is required to have an operation permit under ch. NR 407 shall submit to the department a permit application or a permit revision or renewal application that meets the requirements of s. NR 407.05 to meet this certification requirement, except that no application shall be required for a source operating under a general operation permit or a registration operation permit issued under s. NR 407.10 or 407.105.

History: CR 20-088: cr. Register May 2022 No. 797, eff. 6-1-22; correction in (5) (intro.) made under s. 13.92 (4) (b) 7., Stats., and correction in (10) (a) 1. made under s. 13.92 (4) (b) 14., Stats., Register May 2022 No. 797.

NR 422.155 Fire truck and emergency response vehicle manufacturing. (1) APPLICABILITY. (a) Subsections (2) to (4) apply to coating operations of fire truck and emergency response vehicle manufacturing, where meeting applicable emission limits in s. NR 422.15 is not technologically or economically feasible and where total facility production of fire trucks and emergency response vehicles is less than 35 vehicles per day, in the following counties and at the respective emission thresholds:

Published under s. 35.93, Wis. Stats., by the Legislative Reference Bureau.

1. Any facility located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, or Waukesha and which has VOC emissions, before consideration of controls, from all coating operations of fire truck and emergency response vehicle manufacturing are greater than 6.8 kilograms (15 pounds) in any one day.

2. Any facility located in the county of Brown, Calumet, Dane, Dodge, Door, Fond du Lac, Jefferson, Outagamie, Rock, or Winnebago and which has VOC emissions, before consideration of controls, from all coating operations of fire truck and emergency response vehicle manufacturing, is greater than or equal to 10 tons per year.

3. Any facility located outside the counties of Brown, Calumet, Dane, Dodge, Door, Fond du Lac, Jefferson, Kenosha, Kewaunee, Manitowoc, Milwaukee, Outagamie, Ozaukee, Racine, Rock, Sheboygan, Walworth, Washington, Waukesha, and Winnebago and which have total emissions of VOC from the facility, before consideration of controls, of greater than or equal to 100 tons per year.

(b) Subsection (5) applies to any facility with coating operations as described in par. (a) which is located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, or Waukesha if VOC emissions from all fire truck and emergency response vehicle manufacturing coating operations, including related cleaning activities, before consideration of controls, equal or exceed 3 tons per year on a 12 consecutive month rolling basis.

(2) EMISSION LIMITATIONS. No owner or operator of a fire truck or emergency response vehicle coating operation may cause, allow or permit the emission of any VOCs in excess of:

(a) 0.80 kilograms per liter (6.68 pounds per gallon) of coating, excluding water, delivered to a coating applicator that applies pretreatment coats.

(b) 0.53 kilograms per liter (4.44 pounds per gallon) of coating, excluding water, delivered to a coating applicator that applies prime coats.

(c) 0.72 kilograms per liter (6.00 pounds per gallon) of coating, excluding water, delivered to a coating applicator that applies topcoats.

(d) 0.42 kilograms per liter (3.50 pounds per gallon) of coating, excluding water, delivered to a coating applicator that applies clear coats.

(3) SOLVENT WASHINGS. All VOC emissions from solvent washings shall be considered in the emission limitations in sub. (2), unless the used wash solvent is directed into containers that prevent evaporation into the atmosphere.

(4) INTERNAL OFFSETS. Coating operations subject to this section may not be involved in an internal offset under s. NR 425.05.

(5) WORK PRACTICES. Beginning on March 1, 2013, the owner or operator of a facility subject to this subsection shall do all of the following:

(a) Store all VOC-containing cleaning materials and shop towels used for cleaning in closed containers.

(b) Ensure that storage containers used for VOC-containing materials are kept closed at all times except when depositing or removing material.

(c) Convey VOC-containing cleaning materials in closed containers or pipes.

(d) Minimize spills of VOC-containing cleaning materials.

(e) Minimize emissions of VOC during cleaning of coating application, storage, mixing, and conveying equipment by ensuring that cleaning is performed without atomizing any VOC-containing cleaning material and that the used material is captured and contained.

History: Cr. Register, August, 1989, No. 404, eff. 9-1-89; am. (2) (a) to (d) and (4), Register, February, 1990, No. 410, eff. 3-1-90; CR 11-005: renum. (1) to be (1) (a) (intro.) and am., cr. (1) (a) 1., 2., 3., (b), (5) Register January 2012 No. 673, eff. 2-1-12.

NR 422.16 Use of asphalt surfacing materials.

(1) APPLICABILITY. This section applies to the mixing, storage, use, and application of cutback asphalts in Wisconsin. This section does not apply to cutback asphalts intended for uses other than application to surfaces traversed by motor vehicles, bicycles, or pedestrians.

(2) RESTRICTED MATERIALS. The following restrictions apply to the mixing, open storage, use or application of cutback asphalts during the ozone season:

(a) The use of rapid curing cutback asphalts containing gasoline or naphtha as the diluent is prohibited.

(b) The use of cutback asphalts not prohibited under par. (a) is prohibited except for:

1. Application of a single coat of liquid asphalt to an aggregate base to control dust.

2. Use as a penetrating prime coat during the first and last months of the ozone season.

History: Renum. from NR 154.13 (5) (a) and am. Register, September, 1986, No. 369, eff. 10-1-86; am. (2) (a) and (b), r. (2) (c), Register, February, 1990, No. 410, eff. 3-1-90.

NR 422.17 Application of traffic marking materials.

(1) APPLICABILITY. This section applies after April 30, 1996, to the application of traffic marking material on any paved surface during the ozone season in Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, and Waukesha counties.

(2) RESTRICTED MATERIALS. During the ozone season, no person may cause, allow or permit the application of traffic marking material which exceeds the following limits:

(a) Except as provided in par. (b), for traffic marking material that is measurable as a liquid at the time of application, a VOC content of 91 grams per liter of coating or 0.76 pounds per gallon of coating, excluding water.

(b) For field-reacted traffic marking material, or for traffic marking material that is not measurable as a liquid at the time of application, a VOC emission rate of 3.6 kilograms per stripe-kilometer or 12.2 pounds per stripe-mile.

(3) RECORDKEEPING. (a) In addition to the applicable reporting and recordkeeping requirements of ss. NR 439.03 and 439.04, any person who applies traffic marking material and is subject to this section shall retain records sufficient to document the following:

1. Types and amounts of traffic marking materials purchased annually.

2. The VOC content or emission rate of each type of traffic marking material applied, either in grams per liter or pounds per gallon or kilograms per stripe-kilometer or pounds per stripe-mile.

3. Monthly quantities of each type of traffic marking material applied.

4. The counties in which each marking material was applied.

(b) The documentation required in par. (a) shall be kept for a period of 3 years after the traffic marking material is applied.

History: Cr. Register, July, 1994, No. 463, eff. 8-1-94.

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