

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

DIVISION OF AIR AND WASTE MANAGEMENT

Statutory Authority: 7 Delaware Code, Chapter 60, (7 Del.C. Ch. 60)

PROPOSED

1141 Limiting Emissions of Volatile Organic Compounds from Consumer and Commercial Products

~~Regulation No. 41~~ **1141 Limiting Emissions of Volatile Organic Compounds from Consumer and Commercial Products**

03/11/2002

1.0 Architectural and Industrial Maintenance Coatings

1.1 Applicability

- 1.1.1 Except as provided in 1.1.2 and 1.1.3 of this regulation, ~~Section 1.0 of this regulation~~ applies to any person who supplies, sells, offers for sale, blends, repackages for sale, or manufactures any architectural coating for use in the State of Delaware, as well as any person who applies or solicits the application of any architectural coating in the State of Delaware on or after January 1, 2005.
- 1.1.2 A coating manufactured prior to January 1, 2005, may be sold, supplied, or offered for sale on or after January 1, 2005. In addition, a coating manufactured before January 1, 2005 may be applied at anytime, both before and after January 1, 2005, so long as the coating complied with the standards in effect at the time the coating was manufactured. This does not apply to any coating that does not display the date code required by 1.4.1 of this regulation.
- 1.1.3 ~~This Section does~~ The provisions of 1.0 of this regulation do not apply to
 - 1.1.3.1 any architectural coating that is sold or manufactured for use outside the State of Delaware or for shipment to other manufacturers for reformulation or repackaging;
 - 1.1.3.2 any aerosol coating product, or
 - 1.1.3.3 any architectural coating that is sold in a container with a volume of one liter (1.057 quart) or less.

1.2 Definitions

Terms used but not defined in ~~Section 1.0 of this regulation~~ shall have the meaning given them in ~~Regulation 1101~~ **7 DE Admin. Code 1101** or the CAA, in that order of priority.

“Adhesive” means any chemical substance that is applied for the purposes of bonding two surfaces together other than by mechanical means.

“Aerosol coating product” means a pressurized coating product containing pigments or resins that dispenses product ingredients by means of a propellant and is packaged in a disposable can for hand-held application, or for use in specialized equipment for ground traffic marking applications.

“Antenna coating” means a coating labeled and formulated exclusively for application to equipment and associated structural appurtenances that are used to receive or transmit electromagnetic signals.

“Anti-fouling coating” means a coating labeled and formulated for application to submerged stationary structures and their appurtenances to prevent or reduce the attachment of marine or freshwater biological organisms. To qualify as an anti-fouling coating, the coating must be registered with the U. S. EPA under the Federal Insecticide, Fungicide and Rodenticide Act (7 U. S. C. Section 136 et seq.) and with the Department of Agriculture of the State of Delaware under ~~Title 3~~ **Del.C. Ch. 12**.

“Appurtenance” means any accessory to a stationary structure coated at the site of installation, whether installed or detached, including but not limited to: bathroom and kitchen fixtures; cabinets; concrete forms; doors; elevators; fences; hand railings; heating equipment; air conditioning equipment, and

other fixed mechanical equipment or stationary tools; lampposts; partitions; pipes and piping systems; rain gutters and downspouts; stairways; fixed ladders; catwalks and fire escapes; and window screens.

“Architectural coating” means a coating to be applied to stationary structures or their appurtenances at the site of installation, to portable buildings at the site of installation, to pavements, or to curbs. Coatings applied in shop applications or to non-stationary structures such as airplanes, ships, boats, railcars, and automobiles, and adhesives are not considered architectural coatings for the purpose of Section 1.0 of this regulation.

“ASTM” means the American Society for Testing and Materials.

“BAAQMD” means the Bay Area Air Quality Management District, a part of the California Air Resources Board (CARB) which regulates air quality in the State of California.

“Bitumens” means black or brown materials including, but not limited to, asphalt, tar, pitch, and asphaltite that are soluble in carbon disulfide, consist mainly of hydrocarbons, and are obtained from natural deposits or as residues from the distillation of crude petroleum or coal.

“Bituminous roof coating” means a coating which incorporates bitumens that is labeled and formulated exclusively for roofing.

“Bituminous roof primer” means a primer which incorporates bitumens that is labeled and formulated exclusively for roofing.

“Bond breaker” means a coating labeled and formulated for application between layers of concrete to prevent a freshly poured top layer of concrete from bonding to the layer over which it was poured.

“Calcimine recoater” means a flat solvent-borne coating formulated and recommended specifically for recoating calcimine-painted ceilings and other calcimine-painted substrates.

“CAA” means the Clean Air Act, as amended in 1990.

“Clear brushing lacquers” means clear wood coatings, excluding clear lacquer sanding sealers, formulated with nitrocellulose or synthetic resins to dry by solvent evaporation without chemical reaction and to provide a solid protective film, which are intended exclusively for application by brush and which are labeled as specified in 1.4.5 of this regulation.

“Clear wood coatings” means clear and semi-transparent coatings, including clear brushing lacquers, clear lacquer sanding sealers, sanding sealers other than clear lacquer sanding sealers and varnishes, applied to wood substrates to provide a transparent or translucent film.

“Coating” means a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

“Colorant” means a concentrated pigment dispersion in water, solvent, and/or binder that is added to an architectural coating after packaging in sales units to produce the desired color.

“Concrete curing compound” means a coating labeled and formulated for application to freshly poured concrete to retard the evaporation of water.

“Concrete surface retarder” means a mixture of retarding ingredients such as extender pigments, primary pigments, resin, and solvent that interact chemically with the cement to prevent hardening on the surface where the retarder is applied, allowing the retarded mix of cement and sand at the surface to be washed away to create an exposed aggregate finish.

“Conversion varnish” means a clear acid-curing coating with an alkyd or other resin blended with amino resins and supplied as a single component or two-component product. Conversion varnishes produce a hard, durable, clear finish designed for professional application to wood flooring. Film formation is the result of an acid-catalyzed condensation reaction, affecting a transesterification at the reactive ethers of the amino resins.

“Dry fog coating” means a coating labeled and formulated only for spray application such that over spray droplets dry before subsequent contact with incidental surfaces in the vicinity of the surface coating activity.

“Exempt compound” means a compound identified as exempt under the definition of Volatile Organic Compound (VOC) in Regulation 1104 7 DE Admin. Code 1101. Exempt compound content of a coating shall be determined by U. S. EPA Method 24 or South Coast Air Quality Management District

(SCAQMD) Method 303-91 (Revised February 1993), incorporated by reference in 1.6.5.10 of this regulation.

“Faux finishing coating” means a coating labeled and formulated as a stain or glaze to create artistic effects including, but not limited to, dirt, old age, smoke damage, and simulated marble and wood grain.

“Fire-resistive coating” means an opaque coating labeled and formulated to protect structural integrity by increasing the fire endurance of interior or exterior steel and other structural materials, that has been fire tested and rated by a testing agency and approved by State of Delaware building code officials for the County or local jurisdiction for use in bringing assemblies of structural materials into compliance with federal, state and local building code requirements. The fire-resistive coating and the testing agency must be approved by State of Delaware building code officials for the County or local jurisdiction. The fire-resistive coating shall be tested in accordance with ASTM Designation E 449-98 119-07a, incorporated by reference in 1.6.5.2 of this regulation.

“Fire-retardant coating” means a coating labeled and formulated to retard ignition and flame spread, that has been fire tested and rated by a testing agency approved by State of Delaware building code officials for the County or local jurisdiction for use in bringing building and construction materials into compliance with federal, state and local building code requirements. The fire-retardant coating and the testing agency must be approved by State of Delaware building code officials for the County or local jurisdiction. The fire-retardant coating shall be tested in accordance with ASTM Designation E 84-99 08, incorporated by reference in 1.6.5.1 of this regulation.

“Flat coating” means a coating that is undefined under any other definition in 1.2 of this regulation and that registers gloss less than 15 on an 85-degree meter or less than 5 on a 60-degree meter according to ASTM Designation D 523-89 (1999), incorporated by reference in 1.6.5.3 of this regulation.

“Floor coating” means an opaque coating that is labeled and formulated for application to flooring, including, but not limited to, decks, porches, steps, and other horizontal surfaces, which may be subjected to foot traffic.

“Flow coating” means a coating labeled and formulated exclusively for use by electric power companies or their subcontractors to maintain the protective coating systems present on utility transformer units.

“Form-release compound” means a coating labeled and formulated for application to a concrete form to prevent the freshly poured concrete from bonding to the form. The form may consist of wood, metal, or some material other than concrete.

“Graphic arts coating or sign paint” means a coating labeled and formulated for hand application by artists using brush or roller techniques to indoor and outdoor signs (excluding structural components) and murals including letter enamels, poster colors, copy blockers, and bulletin enamels.

“High-temperature coating” means a high performance coating labeled and formulated for application to substrates exposed continuously or intermittently to temperatures above 204°C (400°F).

“Impacted immersion coating” means a high performance maintenance coating formulated and recommended for application to steel structures subject to immersion in turbulent, debris-laden water. These coatings are specifically resistant to high-energy impact damage caused by floating ice or debris.

“Industrial maintenance coating” means a high performance architectural coating, including primers, sealers, undercoaters, intermediate coats, and topcoats, formulated for application to substrates exposed to one or more of the extreme environmental conditions listed in (1) through (5) under this definition and labeled as specified in 1.4.4 of this regulation:

- (1) immersion in water, wastewater, or chemical solutions (aqueous and non-aqueous solutions), or chronic exposure of interior surfaces to moisture condensation;
- (2) acute or chronic exposure to corrosive, caustic, or acidic agents, or to chemicals, chemical fumes or chemical mixtures or solutions;
- (3) repeated exposure to temperatures above 121°C (250°F);
- (4) repeated (frequent) heavy abrasion, including mechanical wear and repeated (frequent) scrubbing with industrial solvents, cleansers, or scouring agents; or

(5) exterior exposure of metal structures and structural components.

“Lacquer” means a clear or opaque wood coating, including clear lacquer sanding sealers, formulated with cellulosic or synthetic resins to dry by solvent evaporation without chemical reaction and to provide a solid, protective film.

“Low-solids coating” means a coating containing 0.12 kilogram or less of solids per liter (4 one pound or less of solids per gallon) of coating material.

“Magnesite cement coating” means a coating labeled and formulated for application to magnesite cement decking to protect the magnesite cement substrate from erosion by water.

“Mastic texture coating” means a coating labeled and formulated to cover holes and minor cracks and to conceal surface irregularities, that is recommended to be applied in a single coat of at least 10 mils (0.010 inch) dry film thickness.

“Metallic pigmented coating” means a coating containing at least 48 grams of elemental metallic pigment per liter of coating as applied (0.4 pounds per gallon), when tested in accordance with SCAQMD Method 318-95, incorporated by reference in 1.6.5.4 of this regulation.

“Multi-color coating” means a coating that is packaged in a single container and that exhibits more than one color when applied in a single coat.

“Non-flat coating” means a coating that is undefined under any other definition in 1.2 of this regulation and that registers a gloss of 15 or greater on an 85-degree meter and 5 or greater on a 60-degree meter according to ASTM Designation D 523-89 (1999), incorporated by reference in 1.6.5.3 of this regulation.

“Non-flat - high gloss coating” means a non-flat coating that registers a gloss of 70 or above on a 60-degree meter according to ASTM Designation D 523-89 (1999), incorporated by reference in 1.6.5.3 of this regulation.

“Non-industrial use” means any use of architectural coatings except in the construction or maintenance of any of the following: facilities used in the manufacturing of goods and commodities; transportation infrastructure, including highways, bridges, airports and railroads; facilities used in mining activities, including petroleum extraction; and utilities infrastructure, including power generation and distribution, and water treatment and distribution systems.

“Nuclear coating” means a protective coating formulated and recommended to seal porous surfaces such as steel (or concrete) that otherwise would be subject to intrusions by radioactive materials. These coatings must be resistant to long-term (service life) cumulative radiation exposure [ASTM Method D 4082-89 02, incorporated by reference in 1.6.5.14 of this regulation], relatively easy to decontaminate, and resistant to various chemicals to which the coatings are likely to be exposed [ASTM Method D 3912-80 95(2001), incorporated by reference in 1.6.5.15 of this regulation].

“Post-consumer coating” means a finished coating that would have been disposed of in a landfill, having completed its usefulness to a consumer, and does not include manufacturing wastes.

“Pre-treatment wash primer” means a primer that contains a minimum of 0.5 percent acid, by weight, when tested in accordance with ASTM Designation D 1613-9 06, incorporated by reference in 1.6.5.5 of this regulation, that is labeled and formulated for application directly to bare metal surfaces to provide corrosion resistance and to promote adhesion of subsequent topcoats.

“Primer” means a coating labeled and formulated for application to a substrate to provide a firm bond between the substrate and subsequent coats.

“Quick-dry enamel” means a non-flat coating that is labeled as specified in 1.4.8 of this regulation and that is formulated to have the following characteristics:

- (1) can be applied directly from the container under normal conditions with ambient temperatures between 16^o and 27^oC (60^o and 80^oF);
- (2) when tested in accordance with ASTM Designation D 1640-95 03, incorporated by reference in 1.6.5.6 of this regulation, sets to the touch in two hours or less, is tack free in four hours or less, and dries hard in eight hours or less by the mechanical test method; and
- (3) has a dried film gloss of 70 or above on a 60-degree meter.

“Quick-dry primer, sealer and undercoater” means a primer, sealer, or undercoater that is dry to the touch in 30 minutes and can be re-coated in two hours when tested in accordance with ASTM Designation D 1640-9503, incorporated by reference in 1.6.5.6 of this regulation.

“Recycled coating” means an architectural coating formulated such that not less than 50 percent of the total weight consists of secondary and post-consumer coating, with not less than 10 percent of the total weight consisting of post-consumer coating.

“Roof coating” means a non-bituminous coating labeled and formulated exclusively for application to roofs for the primary purpose of preventing penetration of the substrate by water or reflecting heat or ultraviolet radiation. Metallic pigmented roof coatings, which qualify as metallic pigmented coatings, shall be considered to be in the metallic pigmented coatings category.

“Rust preventive coating” means a coating formulated exclusively for non-industrial use to prevent the corrosion of metal surfaces and labeled as specified in 1.4.6 of this regulation.

“Sanding sealer” means a clear wood coating labeled and formulated for application to bare wood to seal the wood and to provide a coat that can be abraded to create a smooth surface for subsequent applications of coatings. A sanding sealer that also meets the definition of a lacquer is not included in this category, but is included in the lacquer category.

“SCAQMD” means the South Coast Air Quality Management District, a part of the California Air Resources Board (CARB), which is responsible for regulation of air quality in the State of California.

“Sealer” means a coating labeled and formulated for application to a substrate for one or more of the following purposes: to prevent subsequent coatings from being absorbed by the substrate, or to prevent harm to subsequent coatings by materials in the substrate.

“Secondary coating (rework)” means a fragment of a finished coating or a finished coating from a manufacturing process that has converted resources into a commodity of real economic value, but does not include excess virgin resources of the manufacturing process.

“Shellac” means a clear or opaque coating formulated solely with the resinous secretions of the lac beetle (lacifer lacca), thinned with alcohol, and formulated to dry by evaporation without a chemical reaction.

“Shop application” means application of a coating to a product or a component of a product in or on the premises of a factory or shop as part of a manufacturing, production, or repairing process (e.g., original equipment manufacturing coatings).

“Solicit” means to require for use or to specify, by written or oral contract.

“Specialty primer, sealer, and undercoater” means a coating labeled as specified in 1.4.7 of this regulation and that is formulated for application to a substrate to seal fire, smoke or water damage; to condition excessively chalky surfaces; to seal efflorescence; or to block stains. An excessively chalky surface is one that is defined as having a chalk rating of four or less as determined by ASTM Designation D 4214-98 07, incorporated by reference in 1.6.5.7 of this regulation.

“Stain” means a clear, semi-transparent, or opaque coating labeled and formulated to change the color of a surface, but not to conceal the grain pattern or texture.

“Swimming pool coating” means a coating labeled and formulated to coat the interior of swimming pools and to resist swimming pool chemicals.

“Swimming pool repair and maintenance coating” means a rubber-based coating labeled and formulated to be used over existing rubber-based coatings for the repair and maintenance of swimming pools.

“Temperature-indicator safety coating” means a coating labeled and formulated as a color changing indicator coating for the purpose of monitoring the temperature and safety of the substrate, underlying piping, or underlying equipment, and for application to substrates exposed continuously or intermittently to temperatures above 204°C (400°F).

“Thermoplastic rubber coating and mastic” means a coating or mastic formulated and recommended for application to roofing or other structural surfaces and that incorporates no less than 40 percent by weight of thermoplastic rubbers in the total resin solids and may also contain other ingredients including, but not limited to, fillers, pigments and modifying resins.

“Tint base” means an architectural coating to which colorant is added after packaging in sale units to produce a desired color.

“Traffic marking coating” means a coating labeled and formulated for marking and striping streets, highways, or other traffic surfaces including, but not limited to, curbs, berms, driveways, parking lots, sidewalks, and airport runways.

“Undercoater” means a coating labeled and formulated to provide a smooth surface for subsequent coatings.

“Varnish” means a clear wood coating, excluding lacquers and shellacs, formulated to dry by chemical reaction on exposure to air. Varnishes may contain small amounts of pigment to color a surface, or to control the final sheen or gloss of the finish.

“VOC content” means the weight of VOC per volume of coating, calculated according to the procedures specified in 1.6.1 of this regulation.

“Waterproofing sealer” means a coating labeled and formulated for application to a porous substrate for the primary purpose of preventing the penetration of water.

“Waterproofing concrete/masonry sealer” means a clear or pigmented film-forming coating that is labeled and formulated for sealing concrete and masonry to provide resistance against water, alkalis, acids, ultraviolet light and staining.

“Wood preservative” means a coating labeled and formulated to protect exposed wood from decay or insect attack, that is registered with the U.S. EPA under the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. section 136, et. seq.) and with the Department of Agriculture of the State of Delaware under ~~Title 3~~ **Del.C.** Ch. 12.

1.3 Standards

1.3.1 Except as provided in 1.3.2, and 1.3.7 of this regulation, no person subject to the requirements of ~~this Section 1.0 of this regulation~~ shall manufacture, blend, repackage for sale, supply, sell or offer for sale, solicit for application or apply in the State of Delaware, any architectural coating with a VOC content in excess of the corresponding limit specified in Table 1-1 of this regulation.

1.3.2 If anywhere on the container of any architectural coating, or any label or sticker affixed to the container, or in any sales, advertising, or technical literature supplied by the manufacturer or anyone acting on their behalf, any representation is made that indicates that the coating meets the definition of or is recommended for use for more than one of the coating categories listed in Table 1-1 of this regulation, then the most restrictive VOC content limit shall apply. This provision does not apply to the coating categories specified in 1.3.2.1 through 1.3.2.19 of this regulation.

- 1.3.2.1 Antenna coatings
- 1.3.2.2 Anti-fouling coatings
- 1.3.2.3 Bituminous roof primers
- 1.3.2.4 Calcimine recoaters
- 1.3.2.5 Fire-retardant coatings
- 1.3.2.6 Flow coatings
- 1.3.2.7 High-temperature coatings
- 1.3.2.8 Impacted immersion coatings
- 1.3.2.9 Industrial maintenance coatings
- 1.3.2.10 Lacquer coatings (including clear lacquer sanding sealers)
- 1.3.2.11 Low-solids coating
- 1.3.2.12 Metallic pigmented coatings
- 1.3.2.13 Nuclear coatings
- 1.3.2.14 Pre-treatment wash primers
- 1.3.2.15 Shellacs
- 1.3.2.16 Specialty primers, sealers, and undercoaters
- 1.3.2.17 Temperature-indicator safety coatings

1.3.2.18 Thermoplastic rubber coatings and mastic

1.3.2.19 Wood preservatives

- 1.3.3 All architectural coating containers used to apply the contents therein to a surface directly from the container by pouring, siphoning, brushing, rolling, padding, ragging, or other means, shall be closed when not in use. These architectural coating containers include, but are not limited to, drums, buckets, cans, pails, trays, or other application containers. Containers of any VOC-containing materials used for thinning or cleanup shall also be closed when not in use.
- 1.3.4 No person shall apply or solicit the application of any architectural coating that is thinned to exceed the applicable VOC limit specified in Table 1-1 of this regulation.
- 1.3.5 No person shall apply or solicit the application of any rust preventive coating for industrial use unless such rust preventive coating complies with the industrial maintenance coating VOC limit specified in Table 1-1 of this regulation.
- 1.3.6 For any coating that does not meet any of the definitions for the specialty coatings categories listed in Table 1-1 of this regulation, the VOC content limit shall be determined by classifying the coating as a flat coating or a non-flat coating, based on its gloss, as defined in "~~Flat coating~~", "~~Non-flat coating~~", "~~Non-flat high gloss coating~~" of Section 1.2 of this regulation and the corresponding flat or non-flat coating limit shall apply.
- 1.3.7 Notwithstanding the provisions of 1.3.1 of this regulation, a person or facility may add up to 10 percent by volume of VOC to a lacquer to avoid blushing of the finish during days with relative humidity greater than 70% ~~percent~~ and the temperature below 65°F, at the time of application, provided that the coating contains acetone and no more than 550 grams of VOC per liter of coating, less water and exempt compounds, prior to the addition of VOC.

1.4 Container Labeling Requirements

Each manufacturer of any architectural coatings subject to this rule shall display the information listed in 1.4.1 through 1.4.9 of this regulation on the coating container (or label) in which the coating is sold or distributed, on or after January 1, 2005.

- 1.4.1 The date the coating was manufactured, or a date code representing the date, shall be indicated on the label, lid, or bottom of the container. If the manufacturer uses a date code for any coating, the manufacturer shall file an explanation of each code with the Department.
- 1.4.2 A statement of the manufacturer's recommendation regarding thinning of the coating shall be indicated on the label or lid of the container. This requirement does not apply to the thinning of architectural coatings with water. If thinning of the coating prior to use is not necessary, the recommendation must specify that the coating is to be applied without thinning.
- 1.4.3 Each container of any coating subject to this rule shall display either the maximum or the actual VOC content of the coating, as supplied, including the maximum thinning as recommended by the manufacturer. VOC content shall be displayed in grams of VOC per liter of coating. VOC content displayed shall be calculated using product formulation data, or shall be determined using the test methods in 1.6.2 of this regulation. The equations in 1.6.1 of this regulation shall be used to calculate VOC content.
- 1.4.4 All industrial maintenance coatings shall display on the label or the lid of the container in which the coating is sold or distributed one or more of the descriptions noted below:
- 1.4.4.1 For industrial use only.
 - 1.4.4.2 For professional use only.
 - 1.4.4.3 Not for residential use.
 - 1.4.4.4 Not intended for residential use.
- 1.4.5 The labels of all clear brushing lacquers shall prominently display the statements "For brush application only", and "This product must not be thinned or sprayed".
- 1.4.6 The labels of all rust preventive coatings shall prominently display the statement "For metal substrates only".

- 1.4.7 The labels of all specialty primers, sealers, and undercoaters shall prominently display one or more of the descriptions listed below;
- 1.4.7.1 For blocking stains
 - 1.4.7.2 For fire-damaged substrates
 - 1.4.7.3 For smoke-damaged substrates
 - 1.4.7.4 For water-damaged substrates
 - 1.4.7.5 For excessively chalky substrates
 - 1.4.7.6 To seal in efflorescence
- 1.4.8 The labels of all quick dry enamels shall prominently display the words "Quick Dry" and the dry hard time.
- 1.4.9 The labels of all non-flat-high gloss coatings shall prominently display the words "High Gloss".

1.5 Reporting Requirements

- 1.5.1 Each manufacturer of a product subject to a VOC content limit in Table 1-1 shall keep records demonstrating compliance with the VOC content limits. Such records shall clearly list each covered product by name (and identifying number if applicable) as shown on the product label, and in applicable sales and technical literature, the VOC content determined as in 1.6.1 and 1.6.2 of this regulation, the name(s) or names of the regulated VOC constituents in the product, the dates of VOC determinations, and the coating category and VOC content limit under which the product is regulated in ~~Section~~ 1.0 of this regulation. These records shall be kept for a period of at least five years (60 months) from when generated.
- 1.5.2 Although routine reporting by manufacturers of coating products is not required, from time-to-time the Department may request certain specific data concerning sales and distribution of coating products in Delaware. A manufacturer shall, within 90 days, accede to such requests for information. Requested information shall include, but not be limited to:
- 1.5.2.1 The name and full mailing address of the manufacturer
 - 1.5.2.2 The name, address and telephone number of a contact person
 - 1.5.2.3 The regulated product name as described on the label and the coating category in Table 1-1 of this regulation under which the product is regulated
 - 1.5.2.4 If the product is marketed for interior or exterior use
 - 1.5.2.5 Number of gallons sold in Delaware during the requested time period in containers greater than 4 one liter
 - 1.5.2.6 Number of gallons sold in Delaware during the requested time period in containers of 4 one liter or less
 - 1.5.2.7 The actual and regulatory VOC content in grams per liter (if product in containers less than or equal to 4 one liter has a different VOC content than product in containers larger than 4 one liter, list them separately)
 - 1.5.2.8 The actual and regulatory VOC content in grams per liter after recommended thinning (if product in containers less than or equal to 4 one liter has a different VOC content than product in containers larger than 4 one liter, list them separately)
 - 1.5.2.9 The name(s) or names of the VOC constituents of the product
 - 1.5.2.10 The name(s) or names of any exempt compounds in the product

1.6 Compliance Provisions and Test Methods

- 1.6.1 For the purpose of determining compliance with the VOC content limits in Table 1-1 of this regulation, the VOC content of a coating shall be determined by using the procedures described in 1.6.1.1 or 1.6.1.2 of this regulation, as appropriate. The VOC content of a tint base shall be determined without colorant that is added after the tint base is manufactured.
- 1.6.1.1 With the exception of low-solids coatings, determine the VOC content in grams of VOC per liter of coating thinned to the manufacturer's maximum recommendation, excluding the volume of any water and exempt compounds. Determine the VOC content using equation 1-1 as follows:

$$\text{VOC Content} = \frac{W_s - W_w - W_{ec}}{V_m - V_w - V_{ec}} \quad (1-1)$$

Where:

VOC Content = grams of VOC per liter of coating;

W_s = weight of volatiles, in grams;

W_w = weight of water, in grams;

W_{ec} = weight of exempt compounds, in grams;

V_m = volume of coating, in liters;

V_w = volume of water, in liters;

V_{ec} = volume of exempt compounds, in liters.

- 1.6.1.2 For low-solids coatings, determine the VOC content in grams of VOC per liter of coating thinned to the manufacturer's maximum recommendation, including the volume of any water and exempt compounds. Determine the VOC content using equation 1-2 as follows:

$$\text{VOC Content (ls)} = \frac{W_s - W_w - W_{ec}}{V_m} \quad (1-2)$$

where:

VOC Content (ls) = the VOC content of a low-solids coating in grams per liter of coating;

W_s = weight of volatile, in grams;

W_w = weight of water, in grams;

W_{ec} = weight of exempt compounds, in grams;

V_m = volume of coating, in liters.

- 1.6.2 To determine the physical properties of a coating in order to perform the calculations in 1.6.1 of this regulation, the reference method for VOC content is U.S. EPA Method 24 (40CFR60 Appendix A), incorporated by reference in 1.6.5.11 of this regulation, except as provided in 1.6.3 and 1.6.4 of this regulation. An alternative method to determine the VOC content of coatings is SCAQMD Method 304-91 (Revised February 1996), incorporated by reference in 1.6.5.12 of this regulation. To determine the VOC content of a coating, the manufacturer may use U.S. EPA Method 24, or an alternative method, as provided in 1.6.3 of this regulation, formulation data, or any other reasonable means for predicting that the coating has been formulated as intended (e.g. quality assurance checks, recordkeeping). However, if there are any inconsistencies between the results of a Method 24 test and any other means for determining VOC content, the Method 24 results will govern, except when an alternative method is approved as specified in 1.6.3 of this regulation. The Secretary may require the manufacturer to conduct a Method 24 analysis.
- Exempt compound content shall be determined by SCAQMD Method 303-91 (revised February 1993), incorporated by reference in 1.6.5.10 of this regulation. The exempt compound ~~P~~ parachlorobenzotrifluoride (PCBTF) shall be determined by BAAQMD Method 41, incorporated by reference in 1.6.5.9 of this regulation. Exempt compounds that are cyclic, branched, or linear, completely methylated siloxanes, shall be determined by BAAQMD Method 43, incorporated by reference in 1.6.5.8 of this regulation.

- 1.6.3 Other test methods demonstrated to provide results that are acceptable for the purposes of determining compliance with 1.6.2 of this regulation, after review and approval in writing by the Department and by the EPA, also may be used.
- 1.6.4 Analysis of methacrylate multi-component coatings used as traffic marking coatings shall be conducted according to a modification of U.S. EPA Method 24 (40CFR59, subpart D, Appendix A), incorporated by reference in 1.6.5.13 of this regulation. This method has not been approved for methacrylate multi-component coatings used for purposes other than as traffic marking coatings or for other classes of multi-component coatings.
- 1.6.5 The following test methods are incorporated by reference herein, and shall be used to test coatings subject to the provisions of this ~~rule~~ regulation:
- 1.6.5.1 The flame spread index of a fire-retardant coating shall be determined by the ASTM Designation E 84-~~99~~ 08 , "Standard Test Method for Surface Burning Characteristics of Building Materials," [see "Fire-retardant coating" in ~~Section~~ 1.2 of this regulation].
 - 1.6.5.2 The fire-resistance rating of a fire-resistive coating shall be determined by ASTM Designation E 119-~~98~~ 07a, "Standard Test Methods for Fire Tests on Building Construction Materials," [see "Fire-resistive coating" in ~~Section~~ 1.2 of this regulation].
 - 1.6.5.3 The gloss of a coating shall be determined by ASTM Designation D 523-89 (1999), "Standard Test Method for Specular Gloss" [see "Flat coating"; "Non-flat coating"; "Non-flat-high gloss coating"; "Quick-dry enamel" in ~~Section~~ 1.2 of this regulation].
 - 1.6.5.4 The metallic content of a coating shall be determined by SCAQMD Method 318-95, "Determination of Weight Percent Elemental Metal in Coatings by X-Ray Diffraction," SCAQMD "Laboratory Methods of Analysis for Enforcement Samples," [see "Metallic pigmented coating" in ~~Section~~ 1.2 of this regulation].
 - 1.6.5.5 The acid content of a coating shall be determined by ASTM Designation D 1613-9 06, "Standard Test Method for Acidity in Volatile Solvents and Chemical Intermediates Used in Paint, Varnish, Lacquer and Related Products," [see "Pre-treatment wash primer" in ~~Section~~ 1.2 of this regulation].
 - 1.6.5.6 The set-to-touch and dry-to-recoat times of a coating shall be determined by ASTM Designation D 1640-~~95~~ 03, "Standard Methods for Drying, Curing, or Film Formation of Organic Coatings at Room Temperature," [see "Quick-dry enamel" and "Quick-dry primer, sealer, and undercoater" in ~~Section~~ 1.2 of this regulation]. The tack free time of a quick-dry enamel coating shall be determined by the Mechanical Test Method of ASTM Designation D 1640-~~95~~ 03.
 - 1.6.5.7 The chalkiness of a surface shall be determined using ASTM Designation D 4214-~~98~~ 07, "Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films," [see "Specialty primer, sealer, and undercoater" in ~~Section~~ 1.2 of this regulation].
 - 1.6.5.8 Exempt compounds that are cyclic, branched, or linear, completely methylated siloxanes, shall be analyzed as exempt compounds for compliance with 1.6 by BAAQMD Method 43, "Determination of Volatile Methylsiloxanes in Solvent-Based Coatings, Inks, and Related Materials," BAAQMD Manual of Procedures, Volume III, adopted November 6, 1996 [see 1.6.2 of this regulation].
 - 1.6.5.9 The exempt compound parachlorobenzotrifluoride (PCBTF), shall be analyzed as an exempt compound for compliance with 1.6 of this regulation by BAAQMD Method 41, "Determination of Volatile Organic Compounds in Solvent-Based Coatings and Related Materials Containing Parachlorobenzotrifluoride," BAAQMD Manual of Procedures, Volume III, adopted December 20, 1995, [see 1.6.2 of this regulation].
 - 1.6.5.10 Exempt compound content shall be analyzed by SCAQMD Method 303-91 (Revised 1993), "Determination of Exempt Compounds," SCAQMD "Laboratory Methods of Analysis for Enforcement Samples," [see 1.6.2 of this regulation].
 - 1.6.5.11 The VOC content of a coating shall be determined by U.S. EPA Method 24 as it exists in Appendix A of 40 Code of Federal Regulations (CFR) Part 60, "Determination of Volatile

- Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings," [see 1.6.2 [of this regulation](#)].
- 1.6.5.12 The VOC content of coatings may be analyzed by either U.S. EPA Method 24 or SCAQMD Method 304-91 (Revised 1996), "Determination of Volatile Organic Compounds (VOC) in Various Materials," SCAQMD "Laboratory Methods of Analysis for Enforcement Samples," [see 1.6.2 [of this regulation](#)].
 - 1.6.5.13 The VOC content of methacrylate multi-component coatings used as traffic marking coatings shall be analyzed by the procedures in 40 CFR part 59, subpart D, **Appendix A**, "Determination of Volatile Matter Content of Methacrylate Multicomponent Coatings Used as Traffic Marking Coatings," (September 11, 1998), [see 1.6.4 [of this regulation](#)].
 - 1.6.5.14 The radiation resistance of a nuclear coating shall be determined by ASTM Method D 4082-~~89~~ 02 "Standard Test Method for Effects of Gamma Radiation on Coatings for Use in Light-Water Nuclear Power Plants," see ["Nuclear coating" in ~~Section~~ 1.2 of this regulation].
 - 1.6.5.15 The chemical resistance of nuclear coatings shall be determined by ASTM Method D 3912-~~80~~ 95 (2001) (~~reapproved 1989~~) "Standard Test Method for Chemical Resistance of Coatings Used in Light-Water Nuclear Power Plants," [see "Nuclear coating" in ~~Section~~ 1.2 of this regulation].
- 1.7 Test Method Availability
- 1.7.1 ASTM methods described in 1.6 [of this regulation](#) can be purchased from American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428-2959. Telephone (610) 832-9585. Fax (610) 832-9555.
 - 1.7.2 SCAQMD methods described in 1.6 [of this regulation](#) can be purchased from South Coast Air Quality Management District, 21865 East Copley Drive, Diamond Bar, California 91765-0934. Telephone (909) 396-2162.
 - 1.7.3 BAAQMD methods described in 1.6 [of this regulation](#) can be purchased from Bay Area Air Quality Management District (BAAQMD), 939 Ellis Street, San Francisco, California 94109. Telephone (415) 749-4900.

TABLE 1-1
VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS

Note: Limits are expressed in grams of VOC per liter of coating thinned to the manufacturer's maximum recommendation (as indicated on the label or lid of the coating container), excluding the volume of any water, exempt compounds, or colorant added to tint bases.

COATING CATEGORY	VOC CONTENT LIMIT
Flat Coatings	100
Non-flat Coatings	150
Non-flat - High Gloss Coatings	250
SPECIALTY COATINGS	
Antenna Coatings	530*
Anti-fouling Coatings	400
Bituminous Roof Coatings	300
Bituminous Roof Primers	350
Bond Breakers	350
Calcimine Recoaters	475*
Clear Wood Coatings	

Clear Brushing Lacquers	680
Lacquers (including clear lacquer sanding sealers)	550
Sanding Sealers (other than clear lacquer sanding sealers)	350
Varnishes	350
Conversion Varnish	725*
Concrete Curing Compounds	350*
Concrete Surface Retarders	780*
Dry Fog Coatings	400*
Faux Finishing Coatings	350
Fire-resistive Coatings	350
Fire-retardant Coatings	
Clear	650
Opaque	350
Floor Coatings	250
Flow Coatings	420
Form-release Compounds	250
Graphic Arts Coatings (Sign Paints)	500_
High-temperature Coatings	420
Impacted Immersion Coatings	780*
Industrial Maintenance Coatings	340
Low-solids Coatings	120*(1)
Magnesite Cement Coatings	450
Mastic Texture Coatings	300*
Metallic Pigmented Coatings	500
Multi-color Coatings	250
Nuclear Coatings	450*
Pre-treatment Wash Primers	420
Primers, Sealers, and Undercoaters	200
Quick-dry Enamels	250
Quick-dry Primers, Sealers and Undercoaters	200
Recycled Coatings	250
Roof Coatings	250
Rust Preventive Coatings	400*
Shellacs	
Clear	730
Opaque	550
Specialty Primers, Sealers, and Undercoaters	350
Stains	250
Swimming Pool Coatings	340
Swimming Pool Repair and Maintenance Coatings	340
Temperature-indicator Safety Coatings	550
Thermoplastic Rubber Coatings and Mastic	550*
Traffic Marking Coatings	150*
Waterproofing Sealers	250
Waterproofing Concrete/Masonry Sealers	400
Wood Preservatives	350

* Indicates limits and definition unchanged from the Federal rule (40CFR59 Subpart D) "National Volatile Organic Compound Emission Standards for Architectural Coatings" which is still in effect.

(1) Units are grams of VOC per liter of coating, *including* water and exempt compounds.

2.0 Consumer Products

[Currently under revision]

11/11/2001

3.0 Portable Fuel Containers

3.1 Applicability.

3.1.1 ~~Section 3.0 applies~~ The provisions of 3.0 of this regulation apply to any person who sells, supplies, offers for sale, or manufactures for sale portable fuel container(~~s or containers~~) or spout(~~s or spouts~~) or both portable fuel container(~~s or containers~~) and spout(~~s or spouts~~) for use in the State of Delaware; except:

3.1.1.1 Safety cans meeting the requirements of 29 CFR 1926, Subpart F.

3.1.1.2 Portable fuel containers with a nominal capacity less than or equal to one quart.

3.1.1.3 Rapid refueling devices with nominal capacities greater than or equal to four gallons provided such devices are designed for use in officially sanctioned off-highway motorcycle competitions, and either create a leak-proof seal against a stock target fuel tank or are designed to operate in conjunction with a receiver permanently installed on the target fuel tank.

3.1.1.4 Portable fuel tanks manufactured specifically to deliver fuel through a hose attached between the portable fuel tank and an outboard engine for the purpose of operating that outboard engine.

3.1.2 Compliance with the requirements of ~~Section 3.0~~ of this regulation does not exempt any spill-proof system or spill-proof spout from compliance with other applicable Federal or State requirements.

3.1.3 The requirements of ~~Section 3.0~~ of this regulation apply on and after January 1, 2003, except that, any portable fuel container or spout or both portable fuel container and spout manufactured before January 1, 2003 that does not meet the requirements of ~~Section 3.0~~ of this regulation, may be sold, supplied, or offered for sale until January 1, 2004, provided that the date of manufacture or a date code, representing the date of manufacture, is clearly displayed on the portable fuel container or spout.

3.1.4 Any person subject to any requirement of ~~Section 3.0~~ of this regulation may comply with an alternative control plan that has been approved by the Department and the U.S. EPA as part of Delaware's State Implementation Plan.

3.2 Definitions.

For the purpose of ~~Section 3.0~~ of this regulation, the following definitions apply:

"Fuel" means a hydrocarbon mixture used to power any spark ignition internal combustion engine.

"Manufacturer" means any person who imports, manufactures, produces, assembles, packages, repackages, or re-labels a portable fuel container or spout or both portable fuel container and spout.

"Nominal capacity" means the volume, indicated by the manufacturer that represents the maximum recommended filling level.

"Outboard engine" means a spark-ignition marine engine that, when properly mounted on a marine watercraft in the operating position, houses the engine and drive unit external to the hull of the marine watercraft.

"Permeation" means the process by which individual fuel molecules may penetrate the walls and various assembly components of a portable fuel container directly to the outside ambient air.

"Person" means any individual, public or private corporation, political subdivision, government agency, department or bureau of the State, municipality, industry, co-partnership, association, firm, estate or any legal entity whatsoever.

"Portable fuel container" means any container or vessel with a nominal capacity of ten gallons or less that is intended for reuse and that is designed or used primarily for receiving, transporting, storing, and dispensing fuel.

"Spill-proof spout" means any spout that complies with all of the performance standards specified in Section 3.3.2 of this regulation.

"Spill-proof system" means any configuration of portable fuel container and firmly attached spout that complies with all of the performance standards in Section 3.3.1 of this regulation.

"Spout" means any device that can be firmly attached to a portable fuel container, through which the contents of a portable fuel container can be dispensed.

"Target fuel tank" means any receptacle that receives fuel from a portable fuel container.

3.3 Standards.

3.3.1 No person subject to the requirements of Section 3.0 of this regulation shall sell, supply, offer for sale, or manufactures for sale portable fuel container(~~s~~ or containers) or spout(~~s~~ or spouts) or both portable fuel container(~~s~~ or containers) and spout(~~s~~ or spouts) for use in the State of Delaware which does not:

- 3.3.1.1 Have an automatic shut-off that stops the fuel flow before the target fuel tank overflows.
- 3.3.1.2 Automatically close and seal when removed from the target fuel tank, and remain completely closed when not dispensing fuel.
- 3.3.1.3 Have only one opening for both filling and pouring.
- 3.3.1.4 Provide a fuel flow rate and fill level of:
 - 3.3.1.4.1 not less than one-half gallon per minute for portable fuel containers with a nominal capacity of:
 - 3.3.1.4.1.1 less than or equal to 1.5 gallons and fills to a level less than or equal to 4 one inch below the top of the target fuel tank opening; or
 - 3.3.1.4.1.2 greater than 1.5 gallons but less than or equal to 2.5 gallons and fills to a level less than or equal to 4 one inch below the top of the target fuel tank opening if the spill-proof system clearly displays the phrase "Low Flow Rate" in type of 34 point or greater on each spill-proof system or label affixed thereto, and on the accompanying package, if any; or
 - 3.3.1.4.2 not less than one gallon per minute for portable fuel containers with a nominal capacity greater than 1.5 gallons but less than or equal to 2.5 gallons and fills to a level less than or equal to 1.25 inches below the top of the target fuel tank opening; or,
 - 3.3.1.4.3 not less than two gallons per minute for portable fuel containers with a nominal capacity greater than 2.5 gallons.
- 3.3.1.5 Meet a permeation rate of 0.4 grams per gallon per day or less.
- 3.3.1.6 Have a warranty from the manufacturer for a period of not less than one year against defects in materials and workmanship.

3.3.2 No person subject to the requirements of Section 3.0 of this regulation shall sell, supply, offer for sale, or manufacture for sale any spout for use in the State of Delaware, which does not:

- 3.3.2.1 Have an automatic shut-off that stops the fuel flow before the target fuel tank overflows.
- 3.3.2.2 Automatically close and seal when removed from the target fuel tank, and remain completely closed when not dispensing fuel.
- 3.3.2.3 Provide a fuel flow rate and fill level of:
 - 3.3.2.3.1 not less than one-half gallon per minute for portable fuel containers with a nominal capacity of:
 - 3.3.2.3.1.1 less than or equal to 1.5 gallons and fills to a level less than or equal to 4 one inch below the top of the target fuel tank opening; or,

- 3.3.2.3.1.2 greater than 1.5 gallons but less than or equal to 2.5 gallons and fills to a level less than or equal to 4 one inch below the top of the target fuel tank opening if the spill-proof spout clearly displays the phrase "Low Flow Rate" in type of 34 point or greater on the accompanying package, or for spill-proof spouts sold without packaging, on either the spill-proof spout or a label affixed thereto; or,
 - 3.3.2.3.2 not less than one gallon per minute for portable fuel containers with a nominal capacity greater than 1.5 gallons but less than or equal to 2.5 gallons and fills to a level less than or equal to 1.25 inches below the top of the target fuel tank opening; or,
 - 3.3.2.3.3 not less than two gallons per minute for portable fuel containers with a nominal capacity greater than 2.5 gallons.
 - 3.3.2.4 Have a warranty from the manufacturer for a period of not less than one year against defects in materials and workmanship.
- 3.4 Testing Procedures.
 - 3.4.4 Any manufacturer subject to the requirements of ~~Section 3.3~~ of this regulation shall perform the following compliance tests in accordance with test methods and procedures stated, or as otherwise approved by the Department and the Administrator of the EPA. Records of compliance testing shall be maintained for as long as the product is available for sale in Delaware, and test results shall be made available to the Department within 60 days of request.
 - 3.4.4.1 The following tests shall be carried out to determine compliance with ~~Section 3.3.2~~ of this regulation prior to the product being manufactured for sale in Delaware:
 - 3.4.1.4.1 "Test Method 510, Automatic Shut-Off Test Procedure for Spill-Proof Systems and Spill-Proof Spouts" adopted by California Air Resources Board (CARB) on July 6, 2000. This test method is hereby adopted by reference.
 - 3.4.1.4.2 "Test Method 511, Automatic Closure Test Procedure for Spill-Proof Systems and Spill-Proof Spouts" adopted by CARB on July 6, 2000. This test method is hereby adopted by reference.
 - 3.4.1.4.3 "Test Method 512, Determination of Fuel Flow Rate for Spill-Proof Systems and Spill-Proof Spouts" adopted by CARB on July 6, 2000. This test method is hereby adopted by reference.
 - 3.4.4.2 The following tests shall be carried out to determine compliance with ~~Section 3.3.1~~ of this regulation prior to the product being manufactured for sale:
 - 3.4.4.2.1 All of the test procedures stated in ~~Section 3.4.4.1~~ of this regulation.
 - 3.4.4.2.2 "Test Method 513, Determination of Permeation Rate for Spill-Proof Systems," adopted by CARB on July 6, 2000. This test method is hereby adopted by reference.
- 3.5 Administrative Requirements.
 - 3.5.1 Any manufacturer subject to the requirements of ~~Section 3.3.1~~ of this regulation shall clearly display on each spill-proof system:
 - 3.5.1.1 the phrase "Spill-Proof System";
 - 3.5.1.2 a date of manufacture or representative date code; and
 - 3.5.1.3 a representative code identifying the portable fuel container or portable fuel container and spout as subject to and complying with the requirements of ~~Section 3.3.1~~ of this regulation.
 - 3.5.2 Any person subject to the requirements of ~~Section 3.3.2~~ of this regulation shall clearly display on the accompanying package, or for spill-proof spouts sold without packaging, on either the spill-proof spout or a label affixed thereto:
 - 3.5.2.1 the phrase "Spill-Proof Spout";
 - 3.5.2.2 a date of manufacture or representative date code; and
 - 3.5.2.3 a representative code identifying the spout as subject to and complying with the requirements of ~~Section 3.3.2~~ of this regulation.

- 3.5.3 Any manufacturer subject to ~~Section 3.5.1 and/or Section 3.5.2~~ or both 3.5.1 and 3.5.2 of this regulation shall file an explanation of both the date code and representative code with the Department prior to manufacturing the product for sale in the State of Delaware.
- 3.5.4 Any person subject to ~~Section 3.5.1 and/or Section 3.5.2~~ or both 3.5.1 and 3.5.2 of this regulation shall clearly display a fuel flow rate on each spill-proof system or spill-proof spout, or label affixed thereto, and on any accompanying package.
- 3.5.5 Any person subject to ~~Section 3.5.2 of this regulation~~ shall clearly display the make, model number, and size of those portable fuel containers the spout is designed to accommodate.
- 3.5.6 Any person not subject to or not in compliance with ~~Section 3.3 of this regulation~~ may not display the phrase "Spill-Proof System" or "Spill-Proof Spout" on the portable fuel container or spout, respectively, on any sticker or label affixed thereto, or on any accompanying package.
- 3.5.7 Any person subject to and complying with ~~Section 3.3 of this regulation~~, that due to its design or other features, cannot be used to refuel on-road motor vehicles shall clearly display the phrase "Not Intended For Refueling On-Road Motor Vehicles" in type of 34 point or greater on each of the following:
 - 3.5.7.1 For a portable fuel container or portable fuel container and spouts sold together as a spill-proof system, on the system or on a label affixed thereto, and on the accompanying package, if any; and
 - 3.5.7.2 For a spill-proof spout sold separately from a spill-proof system, on either the spill-proof spout, or a label affixed thereto, and on the accompanying package, if any.

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