

RULE 468 – SURFACE COATING OF PLASTIC PARTS AND PRODUCTS
Adopted 3-22-18**INDEX****100 GENERAL**

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100 GENERAL

- 101 **PURPOSE:** To limit the emission of volatile organic compounds from coatings and cleaning materials associated with the coating of miscellaneous plastic parts and products, transportation plastic parts, and business machine plastic parts.
- 102 **APPLICABILITY:**
- 102.1 The provisions of this rule apply to any person who uses, applies, or solicits the use or application of any coating or cleaning material for miscellaneous plastic parts and products, transportation plastic parts, or business machine plastic parts within the District. Only the provisions in Sections 401, 402, 403, and 502 apply to persons who supply, sell, offer for sale, manufacture, or distribute any coating or cleaning material for miscellaneous plastic parts and products, transportation plastic parts, or business machine plastic parts for use within the District.
- 102.2 The requirements of Rule 441 – ORGANIC SOLVENTS, do not apply to coatings or cleaning materials subject to this rule.
- 103 **SEVERABILITY:** If any section, subsection, sentence, clause, phrase, or portion of this rule is, for any reason, held invalid, unconstitutional, or unenforceable by any court of competent jurisdiction, such portion is deemed as a separate, distinct, and independent provision, and such holding does not affect the validity of the remaining portions thereof.
- 110 **EXEMPTION – OPERATIONS SUBJECT TO OTHER DISTRICT RULES:** The provisions of this rule do not apply to coatings and cleaning materials specifically subject to requirements under the following rules:
- 110.1 Rule 442 – ARCHITECTURAL COATINGS;
- 110.2 Rule 450 – GRAPHIC ARTS OPERATIONS;
- 110.3 Rule 456 – AEROSPACE ASSEMBLY AND COMPONENT COATING OPERATIONS;
- 110.4 Rule 459 – AUTOMOTIVE, MOBILE EQUIPMENT, AND ASSOCIATED PARTS AND COMPONENTS COATING OPERATIONS;
- 110.5 Rule 460 – ADHESIVES AND SEALANTS; and
- 110.6 Rule 465 – POLYESTER RESIN OPERATIONS.
- 111 **EXEMPTION – SMALL SOURCES:** The provisions of this rule, with the exception of Section 501 – RECORDKEEPING FOR END USERS, do not apply to miscellaneous plastic parts and products, transportation plastic parts, and business machine plastic parts coating operations at a stationary source with total actual emissions less than 2.7 tons of VOC per 12-month rolling period prior to an emission control system from all of the following coatings and associated cleaning activities:
- 111.1 Miscellaneous plastic parts and products, transportation plastic parts, and business machine plastic parts coating operations as defined in this rule;
- 111.2 Miscellaneous metal parts and products coating operations as defined in Rule 451 – SURFACE COATING OF MISCELLANEOUS METAL PARTS AND PRODUCTS;
- 111.3 Application of truck bed liner coatings, underbody coatings, and “vehicle materials” (gasket/gasket sealing material, cavity wax, deadener, and lubricating wax/compound) defined in Rule 459 – AUTOMOTIVE, MOBILE EQUIPMENT, AND ASSOCIATED PARTS AND COMPONENTS COATING OPERATIONS; and
- 111.4 Surface coating operations for metal and plastic parts of pleasure craft.
- 112 **EXEMPTION – AEROSOL CONTAINERS:** The requirements of this rule do not apply to coatings sold in non-refillable aerosol containers having a capacity of one liter (1.1 quarts) or less.
- 113 **EXEMPTION – APPLICATION EQUIPMENT:** The requirements of Section 304 of this rule do not apply to airbrush operations using 5 gallons or less per calendar year of coating on miscellaneous plastic parts and products.

- 114 **EXEMPTION – LOW USAGE OF MATERIALS EXCEEDING VOC CONTENT LIMITS:** The requirements of Sections 301, 302, and 303 do not apply to coatings exceeding the VOC content limits specified in those sections when the total volume of all such coatings used is less than or equal to 55 gallons per 12-month rolling period, per stationary source, provided the requirements of Section 501 are satisfied.
- 115 **EXEMPTION – SPECIFIC COATINGS FOR MISCELLANEOUS PLASTIC PARTS AND PRODUCTS:** The VOC limits of Section 301 do not apply to the following coatings on miscellaneous plastic parts and products:
- 115.1 Touch-up and repair coatings;
 - 115.2 Stencil coatings applied on clear or transparent substrates;
 - 115.3 Clear or translucent coatings;
 - 115.4 Coatings applied at a paint manufacturing facility while conducting performance tests on the coatings;
 - 115.5 Reflective coatings applied to highway cones;
 - 115.6 Mask coatings that are less than 0.5 millimeter thick (dried) and the area coated is less than 25 square inches;
 - 115.7 Electromagnetic Interference/Radio Frequency Interference shielding coatings; and
 - 115.8 Heparin-benzalkonium chloride (HBAC)-containing coatings applied to medical devices, provided that the total usage of all such coatings does not exceed 100 gallons per calendar year, per stationary source, provided the requirements in Section 501 are satisfied.
- 116 **EXEMPTION – SPECIFIC COATINGS FOR TRANSPORTATION AND BUSINESS MACHINE PLASTIC PARTS:** The VOC limits of Sections 302 and 303 do not apply to the following coatings on transportation plastic parts and business machine plastic parts:
- 116.1 Texture coatings applied to transportation plastic parts;
 - 116.2 Vacuum metalizing coatings;
 - 116.3 Gloss reducers;
 - 116.4 Adhesion primers;
 - 116.5 Electrostatic preparation coatings;
 - 116.6 Resist coatings; and
 - 116.7 Stencil coatings.
- 117 **EXEMPTION – AUTOMOBILE AND LIGHT-DUTY TRUCK ASSEMBLY COATING OPERATIONS:** The requirements of this rule do not apply to automobile and light-duty truck assembly coating operations.
- 118 **EXEMPTION – PLEASURE CRAFT COATING OPERATIONS:** The requirements of this rule do not apply to pleasure craft coating operations.

200 DEFINITIONS

- 201 **ADHESION PRIMER:** A coating that is applied to a polyolefin transportation plastic part or business machine plastic part to promote the adhesion of a subsequent coating. An adhesion primer is clearly identified as an adhesion primer or adhesion promoter on its accompanying material data sheet.
- 202 **AEROSOL CONTAINER:** A hand-held, non-refillable container that expels pressurized product ingredients by means of a propellant-induced force.
- 203 **AIR-DRIED COATING:** A coating applied to a transportation plastic part that is dried or cured by the use of air or forced warm air at temperatures up to 90°C (194°F).
- 204 **AIRBRUSH OPERATION:** An operation conducted with a type of coating application equipment that operates at air pressures between 25 psig and 116 psig and an air volume between 0.7 cfm and 1.75 cfm. An airbrush operation applies a very thin film of coating to a substrate from a paint reservoir of eight ounces or less.

- 205 **APPLICATION EQUIPMENT:** Any device used to apply coatings or used in preparing coatings, such as stir sticks or funnels.
- 206 **AUTOMOBILE:** A motor vehicle designed to carry up to eight passengers, excluding vans, sport utility vehicles, and motor vehicles designed primarily to transport light loads of property with gross vehicle weight rating of 8,500 pounds or less.
- 207 **AUTOMOBILE AND LIGHT-DUTY TRUCK ASSEMBLY COATING OPERATION:** Any coating operation that includes the coating of new automobile or new light-duty truck bodies or body parts for new automobiles or new light-duty trucks, and other parts that are coated along with these bodies or body parts, at a facility where new automobiles or new light-duty trucks are completely assembled.
- 208 **BAKED COATING:** A coating applied on a transportation plastic part that is designed to cure only at temperatures of more than 90°C (194°F).
- 209 **BASE COAT:** A pigmented coating applied on a transportation plastic part as part of a two-stage system.
- 210 **BUSINESS MACHINE PLASTIC PART:** A plastic part of a device using electronic or mechanical methods to process information, perform calculations, print or copy information or convert sound into electrical impulses for transmission, including devices listed in Standard Industrial Classification (SIC) codes 3572, 3573, 3574, 3579, and 3661 and photocopy machines, a subcategory of SIC code 3861.
- 211 **CLEANING MATERIAL:** A VOC-containing material used to clean surfaces of parts before coating, to remove coating residue or other unwanted materials from equipment related to the coating operations, and to clean application equipment between coating jobs.
- 212 **CLEAR COATING:** A coating applied to transportation plastic parts that lacks color and opacity or is transparent and uses the undercoat as a reflectant base or undertone color.
- 213 **CLOSED CONTAINER:** A container that has a cover where the cover meets with the main body of the container without any visible gaps between the cover and the main body of the container.
- 214 **COATING:** A material applied to a surface to identify, beautify, protect, convey a message, or minimize detection of such surface.
- 215 **DIP COAT:** A coating method in which the plastic parts are manually or automatically dipped into a tank containing the coating and any excess coating is allowed to drain off when the parts are withdrawn from the tank.
- 216 **ELECTRIC DISSIPATING COATING:** A coating applied to miscellaneous plastic parts and products that rapidly dissipates a high-voltage electric charge.
- 217 **ELECTROMAGNETIC INTERFERENCE/RADIO FREQUENCY INTERFERENCE SHIELDING COATING:** A coating applied to the plastic parts of electrical or electronic equipment to provide shielding against electromagnetic interference, radio frequency interference, or static discharge.
- 218 **ELECTROSTATIC PREPARATION COATING:** A coating that is applied to transportation plastic parts or business machine plastic parts solely to provide conductivity for the subsequent application of a primer, a topcoat, or other coating through the use of electrostatic spray. An electrostatic preparation coating is clearly identified as an electrostatic preparation coating on its accompanying material data sheet.

- 219 **ELECTROSTATIC SPRAY:** The spray application of coatings where the part and coating are oppositely charged so that the part, which is grounded, attracts the negatively charged coating particles.
- 220 **EMISSION CONTROL SYSTEM:** Any combination of capture systems and control devices used to reduce VOC emissions from coating operations.
- 221 **END USER:** Any person applying any coating or cleaning material subject to this rule.
- 222 **EXEMPT COMPOUND:** For the purposes of this rule, "exempt compound" has the same meaning as in Rule 101 – GENERAL PROVISIONS AND DEFINITIONS.
- 223 **EXTREME PERFORMANCE COATING:** A coating that is used on a plastic surface where the coated surface is, in its intended use, subject to the following:
- 223.1 Chronic exposure to corrosive, caustic or acidic agents, chemicals, chemical fumes, chemical mixtures or solutions; or
 - 223.2 Repeated exposure to temperatures in excess of 250°F; or
 - 223.3 Repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial grade solvents, cleansers, or scouring agents.
- 224 **FLEXIBLE PRIMER:** A primer applied to a transportation plastic part that is required to comply with engineering specifications for impact resistance, mandrel bend, or elongation as defined by the original equipment manufacturer.
- 225 **FLOW COAT:** A coating method where the coating is applied at low pressure as the part passes under a series of nozzles and any excess coating drains back into the sink, is filtered, and pumps back into a coating holding tank.
- 226 **FOG COAT:** A coating that is applied at a thickness of 0.5 mils of coating solids or less to a business machine plastic part for the purpose of color matching without masking a molded-in texture.
- 227 **GLOSS REDUCER:** A coating that is applied at a thickness 0.5 mils of coating solids or less to a business machine plastic part or a transportation plastic part solely to reduce the shine of the part.
- 228 **HAND APPLICATION EQUIPMENT:** Manually held equipment such as brushes, rollers, trowels, spatulas, daubers, rags, sponges, and mechanically or pneumatically driven syringes that do not atomize the applied products.
- 229 **HIGH-VOLUME LOW-PRESSURE (HVLP) APPLICATION EQUIPMENT:** Equipment used to apply coatings by means of a gun that is designed to be operated and is operated between 0.1 and 10 psig air pressure measured dynamically at the center of the air cap and at the air horns.
- 230 **LIGHT-DUTY TRUCK:** A van, sport utility vehicle, or motor vehicle designed to transport light loads of property with gross vehicle weight rating of 8,500 pounds or less.
- 231 **LOW-VOLUME LOW-PRESSURE (LVLP) APPLICATION EQUIPMENT:** Spray coating application equipment with air pressure between 0.1 and 10 psig and air volume less than 15.5 cfm per spray gun and that operates at a maximum fluid delivery pressure of 50 psig.
- 232 **MASK COATING:** A thin film coating on miscellaneous plastic parts and products that is applied through a template to coat a small portion of the substrate.
- 233 **MEDICAL DEVICE:** An instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent or other similar article, including any component or accessory, that meets one of the following conditions:

- 233.1 It is intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or prevention of disease; or
- 233.2 It is intended to affect the structure or any function of the body; or
- 233.3 It is defined in the National Formulary or the United States Pharmacopoeia, or any supplement to them.
- 234 **METALLIC COATING:** A coating that contains more than 5 grams of metal particles per liter of coating as applied. "Metal particles" are pieces of a pure elemental metal or a combination of elemental metals.
- 235 **MILITARY SPECIFICATION COATING:** A coating applied to miscellaneous plastic parts and products that has a formulation approved by a United States Military Agency for use on military equipment.
- 236 **MISCELLANEOUS PLASTIC PARTS AND PRODUCTS:** Any parts or products constructed either entirely or partially from plastic that are not defined as transportation plastic parts or business machine plastic parts, including but not limited to, molded plastic parts, industrial and household products, plumbing parts or products, sporting goods, toys, and other consumer products.
- 237 **MOLD SEAL COATING:** The initial coating applied to a new or repaired mold for miscellaneous plastic parts and products to provide a smooth surface that when coated with a mold release coating, prevents products from sticking to the mold.
- 238 **MULTI-COLORED COATING:** A coating applied to miscellaneous plastic parts and products that exhibits more than one color when applied, and is packaged in a single container and applied in a single coat.
- 239 **MULTI-COMPONENT COATING:** A coating applied to miscellaneous plastic parts and products requiring the addition of a separate reactive resin, commonly known as a catalyst or hardener, before application to form an acceptable dry film.
- 240 **ONE-COMPONENT COATING:** A coating that is ready for application as it comes out of its container to form an acceptable dry film. A thinner, necessary to reduce the viscosity, is not considered a component.
- 241 **OPTICAL COATING:** A coating applied to an optical lens.
- 242 **PLASTIC:** Any material that has been formed from one or more synthetic resins. Plastic may be solid, porous, flexible or rigid.
- 243 **PLEASURE CRAFT:** A vessel manufactured or operated primarily for recreational purposes, or leased, rented, or chartered to a person or business for recreational purposes. The owner or operator of such a vessel is responsible for certifying that the intended use is for recreational purposes.
- 244 **PLEASURE CRAFT COATING OPERATION:** Any coating operation that uses any coatings, except unsaturated polyester resin (fiberglass) coatings, applied to a pleasure craft or its parts or components for the purpose of refinishing, repairing, modifying, or manufacturing such craft.
- 245 **PRIMER:** Any coating that is formulated for application to a substrate to provide: a bond between the substrate and subsequent coats; corrosion resistance; a smooth substrate surface; or resistance to penetration of subsequent coats, and on which a subsequent coating is applied. Primers may be pigmented.
- 246 **REPAIR COATING:** A coating used to recoat portions of a previously coated part or product that has sustained mechanical damage to the coating following normal coating operations.

- 247 **RESIST COATING:** A coating that is applied to a business machine plastic part or transportation plastic part before metallic plating to prevent deposits of metal on portions of the plastic part.
- 248 **ROLL COATER:** A series of mechanical rollers that forms a thin coating film on the surface of the roller, which is applied to a substrate by moving the substrate underneath the roller.
- 249 **SHOCK-FREE COATING:** A coating applied to the electrical components of a miscellaneous plastic part or product to protect the user from electric shock. The coating has characteristics of being of low capacitance and high resistance, and having resistance to breaking down under high voltage.
- 250 **STATIONARY SOURCE:** Any building, structure, facility, or emissions unit that emits or may emit any regulated air pollutant directly or as a fugitive emission.
- 250.1 Building, structure, facility, or emissions unit includes all pollutant emitting activities that:
- a. Belong to the same industrial grouping, and
 - b. Are located on one property or on two or more contiguous properties, and
 - c. Are under the same or common ownership, operation, or control, or are owned or operated by entities that are under common control.
- 250.2 Pollutant emitting activities are considered a part of the same industrial grouping if:
- a. They belong to the same two-digit Standard Industrial Classification (SIC) code, or
 - b. They are part of a common production process. (Common production process includes industrial processes, manufacturing processes and any connected processes involving a common material.)
- 251 **STENCIL COATING:** An ink or a pigmented coating that is rolled or brushed onto a template or stamp in order to add identifying letters, symbols, and/or numbers.
- 252 **TEXTURE COATING:** A coating that is applied to transportation plastic parts or business machine plastic parts which, in its finished form, consists of discrete raised spots of the coating.
- 253 **TOPCOAT:** Any final coating applied to the interior or exterior of a business machine.
- 254 **TOUCH-UP COATING:** A coating used to cover minor coating imperfections appearing after the main coating operation.
- 255 **TRANSFER EFFICIENCY:** The percentage of the amount of coating solids deposited on the plastic parts divided by the total amount of coating solids sprayed.
- 256 **TRANSLUCENT COATING:** A coating applied to miscellaneous plastic parts and products that contains binders and pigments, and is formulated to form a colored, but not opaque, film.
- 257 **TRANSPORTATION PLASTIC PART:** Any interior or exterior plastic part of transportation equipment including, but not limited to, the following: motor vehicles with a gross vehicle weight rating of more than 8,500 pounds, construction equipment, tractors, recreational vehicles, railroad cars, locomotives, and light-rail cars.
- 258 **TWO-COMPONENT COATING:** A coating that requires the addition of a separate reactive resin, commonly known as a catalyst, before application to form an acceptable dry film.
- 259 **VACUUM-METALIZING COATING:** A coating applied to a substrate on which metal is to be deposited, or a coating applied directly to the metal film, after it has been deposited using a vacuum metalizing/physical vapor deposition (PVD) process, whereby metal is vaporized and deposited onto the substrate in a vacuum chamber.

- 260 **VOLATILE ORGANIC COMPOUND (VOC):** For the purposes of this rule, "volatile organic compound" has the same meaning as in Rule 101 – GENERAL PROVISIONS AND DEFINITIONS.
- 261 **VOLATILE ORGANIC COMPOUND (VOC) CONTENT AS APPLIED:** For the purposes of this rule, VOC content "as applied" means the VOC content including thinners, reducers, hardeners, retarders, catalysts and additives calculated pursuant to Section 402 or 403 as applicable.

300 STANDARDS

- 301 **VOC CONTENT OF COATINGS FOR MISCELLANEOUS PLASTIC PARTS AND PRODUCTS:** Except as provided in Section 110, 111, 112, 114, 115, 117, 118, or 306, no person may apply to any miscellaneous plastic part or product any coating that exceeds the following VOC content limits as applied. The VOC content of the coating is determined pursuant to Section 502.1.

COATING CATEGORY	VOC CONTENT: g/l (lb/gal) less water and exempt compounds
General Multi-Component Coatings	420 (3.5)
Electric Dissipating Coatings and Shock-Free Coatings	800 (6.7)
Extreme Performance Coatings: One-Component	280 (2.3)
Two-Component	420 (3.5)
Metallic Coatings	420 (3.5)
Military Specification Coatings: One-Component	340 (2.8)
Two-Component	420 (3.5)
Mold Seal Coatings	760 (6.3)
Multi-Colored Coatings	680 (5.7)
Optical Coatings	800 (6.7)
Vacuum-Metalizing Coatings	800 (6.7)
All Other Coatings	280 (2.3)

- 302 **VOC CONTENT OF COATINGS FOR TRANSPORTATION PLASTIC PARTS:** Except as provided in Section 110, 111, 112, 114, 116, 117, 118, or 306, no person may apply to any transportation plastic part any coating that exceeds the following VOC content limits as applied. The VOC content of the coating is determined pursuant to Section 502.1.

COATING CATEGORY	VOC CONTENT: g/l (lb/gal) less water and exempt compounds	
	AIR-DRIED	BAKED
Exterior Parts		
Flexible Primer	580 (4.8)	540 (4.5)
Non-flexible Primer	580 (4.8)	420 (3.5)
Base Coat	600 (5.0)	520 (4.3)
Clear Coatings	540 (4.5)	480 (4.0)
Touch-up and Repair Coatings	620 (5.2)	620 (5.2)
All Other Coatings	600 (5.0)	520 (4.3)
Interior Parts		
Flexible Primer	600 (5.0)	540 (4.5)
Non-flexible Primer	600 (5.0)	420 (3.5)
Base Coat	600 (5.0)	520 (4.3)
Clear Coatings	600 (5.0)	480 (4.0)
Touch-up and Repair Coatings	620 (5.2)	620 (5.2)
All Other Coatings	600 (5.0)	520 (4.3)

- 303 **VOC CONTENT OF COATINGS FOR BUSINESS MACHINE PLASTIC PARTS:** Except as provided in Section 110, 111, 112, 114, 116, 117, 118, or 306, no person may apply to any business machine plastic part any coating that exceeds the following VOC content limits as applied. The VOC content of the coating is determined pursuant to Section 502.1.

COATING CATEGORY	VOC CONTENT: g/l (lb/gal) less water and exempt compounds
Primer or Topcoat	350 (2.9)
Texture Coating	350 (2.9)
Fog Coat	260 (2.2)
Touchup and Repair Coating	350 (2.9)
All Other Coatings	350 (2.9)

- 304 **APPLICATION EQUIPMENT REQUIREMENTS:** No person may apply to any miscellaneous plastic part or product, transportation plastic part, or business machine plastic part any coating unless one of the following application methods is used:
- 304.1 Roll coater;
 - 304.2 Dip coat;
 - 304.3 Electrostatic spray;
 - 304.4 Flow coat;
 - 304.5 High-Volume Low-Pressure (HVLP) application equipment;
 - 304.6 Low-Volume Low-Pressure (LVLP) application equipment;
 - 304.7 Hand application equipment; or
 - 304.8 Any other equivalent coating application method capable of achieving a transfer efficiency, as determined by the method specified in Section 502.7, equivalent to or better than that achieved by HVLP application equipment. Written approval from the Air Pollution Control Officer and the U.S. Environmental Protection Agency must be obtained for each alternative application method prior to use.
- 305 **CLEANING AND STORAGE REQUIREMENTS:** Any person subject to this rule must comply with the requirements in Rule 466 – SOLVENT CLEANING. In addition, the following requirements apply:

- 305.1 Closed containers must be used for the disposal of clothes, papers, or sponges used for cleaning materials and coating removal.
 - 305.2 VOC-containing materials must be stored in closed containers at all times when not in use except when depositing or removing materials.
 - 305.3 VOC-containing materials must be disposed of in a manner that the VOCs are not emitted into the atmosphere and must be conveyed from one location to another in closed containers or through pipes.
 - 305.4 Spillage of VOC-containing materials must be minimized.
- 306 **EMISSION CONTROL SYSTEM REQUIREMENTS:** As an alternative to the coating limits identified in Section 301, 302 or 303, as applicable, a person may use an emission control system, subject to the approval of the Air Pollution Control Officer, that provides an overall system efficiency of not less than 90%, as determined pursuant to Section 405. Any approved emission control system must be maintained in proper working condition and used at all times during periods of emissions-producing operations.

400 ADMINISTRATIVE REQUIREMENTS

- 401 **PRODUCT INFORMATION REQUIREMENTS FOR SELLERS:** Any person who sells any coating or cleaning material subject to this rule must include the following information on material data sheets and make available to the purchaser at the time of sale:
- 401.1 The material type by name/code/manufacturer.
 - 401.2 For coatings, the maximum VOC content of the coating, as applied, after any mixing or thinning as recommended by the manufacturer. VOC content must be displayed as grams of VOC per liter of coating (or pounds of VOC per gallon), excluding water and exempt compounds, pursuant to Section 402.
 - 401.3 For cleaning materials, the maximum VOC content of the material, as applied, after any mixing or thinning as recommended by the manufacturer. VOC content must be displayed as grams of VOC per liter of material (or pounds of VOC per gallon), including water and exempt compounds, pursuant to Section 403.
 - 401.4 For all materials, recommendations regarding thinning, reducing, or mixing with any VOC-containing material.
 - 401.5 For all materials, VOC content may be calculated using product formulation data, or may be determined using the test method in Section 502.1.
- 402 **CALCULATION FOR DETERMINING VOC CONTENT OF COATINGS, LESS WATER AND EXEMPT COMPOUNDS:** The volume of coating is defined as the volume of the original coating plus any VOC-containing material added to the original coating. The weight of VOC per combined volume of VOC and coating solids must be calculated by the following equation:

$$G_1 = \frac{(W_v - W_w - W_{ec})}{(V_m - V_w - V_{EC})}$$

- Where: G_1 = Weight of VOC per total volume of coating, less water and exempt compounds, in grams per liter.
- W_v = Weight of all volatile compounds including any volatile materials added to the original coating supplied by the manufacturer, in grams.
- W_w = Weight of water, in grams.
- W_{ec} = Weight of exempt compounds as defined in Section 222, in grams.
- V_m = Volume of coating, in liters.
- V_w = Volume of water, in liters.
- V_{ec} = Volume of exempt compounds as defined in Section 222, in liters.

- 403 **CALCULATION FOR DETERMINING VOC CONTENT OF CLEANING MATERIALS:** The weight of VOC per total volume of material must be calculated by the following equation:

$$G_2 = \frac{(W_v - W_w - W_{ec})}{V_m}$$

Where: G_2 = Weight of VOC per total volume of material, in grams per liter.
 W_v = Weight of all volatile compounds, in grams.
 W_w = Weight of water, in grams.
 W_{ec} = Weight of exempt compounds as defined in Section 222, in grams.
 V_m = Volume of material, in liters.

- 404 **CALCULATION FOR DETERMINING VOC MASS EMISSION RATE AND PERCENT CONTROL EFFICIENCY:** The VOC mass emission rate must be calculated both upstream and downstream of the emission control system based on the respective VOC mass concentrations and volumetric flow rates, pursuant to Section 502.3 and the following equation:

$$M = (Q)(C)(60 \text{ min/hr})$$

Where: M = VOC mass emission rate, in lb/hr.
 Q = the volumetric flow rate of the exhaust stack, in scfm.
 C = the VOC mass concentration, in lb/scf, as measured by the test methods in Section 502.3.

The percent control efficiency is calculated as follows:

$$\%CE = [(M_U - M_D) / M_U] \times 100$$

Where: CE = overall control efficiency.
 M_U = the upstream VOC mass emission rate, in lb/hr.
 M_D = the downstream VOC mass emission rate, in lb/hr.

- 405 **CALCULATION FOR DETERMINING OVERALL SYSTEM EFFICIENCY:** The overall system efficiency is calculated as follows:

$$\%SE = [\%CLE \times \%CE] / 100$$

Where: SE = overall system efficiency.
 CLE = collection efficiency, determined pursuant to Section 502.2.
 CE = control efficiency, determined pursuant to Section 502.3.

- 406 **OPERATION AND MAINTENANCE (O&M) PLAN:** Any person using an approved emission control system pursuant to Section 306 as a means of complying with this rule, as provided in Section 301, 302 or 303, must submit, with the application for Authority to Construct pursuant to Rule 201 – GENERAL PERMIT REQUIREMENTS, an Operation and Maintenance Plan for the emission control system to the Air Pollution Control Officer for approval. The O&M Plan must specify operation and maintenance procedures that will demonstrate continuous operation of the emission control system during periods of emissions-producing operations. The O&M Plan must also specify which daily records must be kept to document these operation and maintenance procedures. These records must comply with the requirements of Sections 501.4 and 501.5. The O&M Plan must be implemented upon approval of the Air Pollution Control Officer or upon commencing operation, whichever occurs first.

- 407 **LOSS OF SMALL SOURCE EXEMPTION:** If the total actual emissions from a stationary source in any 12-month rolling period that begins after March 22, 2018 equal or exceed the small source exemption level specified in Section 111, the owner or operator of the stationary source must demonstrate compliance with the VOC limits specified in Sections 301, 302, and 303. The coating operation subsequently will not qualify for the exemption in Section 111.

500 MONITORING AND RECORDS

- 501 **RECORDKEEPING FOR END USERS:** In addition to any existing permit conditions issued pursuant to Rule 201 – GENERAL PERMIT REQUIREMENTS, any person within the District subject to this rule, including operations claiming exemption under Sections 111, 114, 115, and 116, must comply with the following requirements:
- 501.1 **LIST OF MATERIALS:** A list must be maintained of currently used coatings, cleaning materials, and other VOC-containing materials including, but not limited to, thinners, reducers, hardeners, retarders, and catalysts. The list must contain all such materials that are currently used and stored on site and must include the following information:
- The material type by name/code/manufacturer and the appropriate category as designated by the coating categories or other material categories in Sections 301, 302 and 303, or “exempt”, as specified by Section 111, 114, 115, or 116, as applicable.
 - The VOC content of the material as applied, pursuant to Section 261. VOC content as provided by the manufacturer, pursuant to Section 401, is acceptable if following manufacturer’s recommended mix ratio.
 - The actual mixing ratio used for the material, as applied.
 - The substrate to which the material is applied.
 - Identification of each material type exceeding the VOC limits specified in Sections 301, 302, and 303.
- 501.2 **PRODUCT INFORMATION:** Any person who uses any coating or cleaning material subject to this rule must maintain on site the data sheet provided by the seller pursuant to Section 401. The data sheet must include all information listed in Sections 401.1 through 401.5 and be made available to the Air Pollution Control Officer on request.
- 501.3 **USAGE RECORDS:** Any person within the District using materials regulated by this rule must update and maintain the records as follows:
- Monthly:
 - Records of total applied volume for each coating and cleaning material, specified by category as listed in Sections 301, 302, 303, and 305.
 - The method of application, specified by coating category as listed in Sections 301, 302, and 303 including a designation for touch-up and repair operations, as applicable.
 - Records of total applied volume for each coating type exceeding the VOC limits specified in Sections 301, 302, and 303 by name/code/manufacturer and coating category.
 - Daily:
 - If, pursuant to Section 306, an emission control system is used as a means of complying with this rule, records of the material type by name/code/manufacturer and the total applied volume of each material.
 - For coatings exceeding the VOC limits specified in Section 301, records regarding the use of each coating type by name/code/manufacturer and the total applied volume of each coating.
- 501.4 **CONTROL EQUIPMENT:** Any person using an emission control system pursuant to Section 306 as a means of complying with this rule must maintain such records as required by the Operation and Maintenance Plan in Section 406 on a daily basis.

- 501.5 **DURATION OF RECORDS:** All records required by this rule must be maintained on site for a continuous five-year period and made available for review by the Air Pollution Control Officer upon request.
- 502 **TESTING PROCEDURES:**
- 502.1 **DETERMINATION OF VOC CONTENT:** VOC content of coatings and cleaning materials must be determined using EPA Method 24 and Sections 402, 403 and 502.4 of this rule.
- 502.2 **DETERMINATION OF COLLECTION EFFICIENCY:** Collection efficiency must be determined in accordance with the U.S. EPA technical guideline document, "Guidelines for Determining Capture Efficiency" (January 9, 1995). Individual capture efficiency test runs subject to the U.S. EPA technical guidelines must be determined by:
- Applicable U.S. EPA Methods 204, 204A, 204B, 204C, 204D, 204E, and/or 204F; or
 - Any other method approved by the U.S. EPA, the California Air Resources Board, and the Air Pollution Control Officer.
- 502.3 **DETERMINATION OF CONTROL EFFICIENCY:** Efficiency of control equipment must be determined in accordance with EPA Method 25, 25A, or 25B; and EPA Method 2 or 2C (whichever is applicable); and Section 404.
- 502.4 **DETERMINATION OF EXEMPT COMPOUNDS:** Compounds exempted from the volatile organic compound definition must be determined in accordance with ASTM Method D4457-02(2008), "Standard Test Method for Determination of Dichloromethane and 1,1,1-Trichloroethane in Paints and Coatings by Direct Injection into a Gas Chromatograph," ARB Method 432, "Determination of Dichloromethane and 1,1,1-Trichloroethane in Paints and Coatings" (September 12, 1989), or South Coast Air Quality Management District Method 303-91, "Determination of Exempt Compounds" (February 1993). If any of the perfluorocarbons or volatile cyclic and linear methyl siloxanes are being claimed as exempt compounds, the person making the claim must state in advance which compounds are present, and the EPA-approved test method used to make the determination of these compounds.
- 502.5 **DETERMINATION OF METAL CONTENT:** Measurement of metal content must be conducted and reported in accordance with the South Coast Air Quality Management District's Method 318-95, "Determination of Weight Percent Elemental Metals in Coatings by X-ray Diffraction" (July 1996).
- 502.6 **DETERMINATION OF SOLIDS CONTENT:** Solids content of coatings must be determined using EPA Method 24.
- 502.7 **DEMONSTRATION OF HVLP EQUIVALENCY:** The equivalency of alternative coating application methods to HVLP application equipment (as specified in Section 304.8) must be demonstrated using South Coast Air Quality Management District "Guidelines for Demonstrating Equivalency with District Approved Transfer Efficient Spray Guns" (September 25, 2002).
- 502.8 **ALTERNATIVE TEST METHODS:** The use of other test methods that are determined to be equivalent or better and approved, in writing, by the Air Pollution Control Officer, California Air Resources Board, and the U.S. EPA may be used in place of the test methods specified in this rule.
- 502.9 **MULTIPLE TEST METHODS:** When more than one test method or set of test methods is specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods constitutes a violation of this rule.