



Enhanced Regulatory Outreach Program Maricopa County Air Quality Department

Notice of Stakeholder Workshops

Date: June 29 And June 30, 2015

Location: 1001 North Central Avenue, Floor 9 Classroom*

The Maricopa County Air Quality Department (department) will conduct a series of Stakeholder Workshops to discuss proposed rule revisions. The schedule is provided below. The draft rules that will be discussed during these workshops are attached to this announcement.

Monday, June 29, 2015

- | | |
|---------------------|---|
| 9:30 am – 10:30 am | AQ-2015-002-Rule 322 (Power Plant Operations) And
AQ-2015-003-Rule 323 (Fuel Burning Equipment From
Industrial/Commercial/Institutional (ICI) Sources) |
| 11:00 am – 12:00 pm | AQ-2015-008-Organic Liquids And Gasoline Rulemaking
Re: Organic Liquid Distribution: Rule 350 (Storage Of Organic Liquids At
Bulk Plants And Terminals) And Rule 351 (Loading Of Organic Liquids) |
| 1:30 pm – 2:30 pm | AQ-2015-005-Rule 336 (Surface Coating Operations) |

Tuesday, June 30, 2015

- | | |
|-------------------|--|
| 1:00 pm – 2:00 pm | AQ-2015-008-Organic Liquids And Gasoline Rulemaking
Re: Gasoline Bulk Tanks And Bulk Terminals: Rule 350 (Storage Of
Organic Liquids At Bulk Plants And Terminals) And Rule 351 (Loading Of
Organic Liquids) |
| 2:30 pm – 3:30 pm | AQ-2015-008-Organic Liquids And Gasoline Rulemaking
Re: Gasoline Dispensing Facilities And Gasoline Cargo Tanks: Rule 352
(Gasoline Delivery Vessel Testing And Use) And Rule 353 (Gasoline In
Stationary Dispensing Tanks) |

Pending the U.S. Environmental Protection Agency's (EPA's) reclassification of Maricopa County from "marginal" to "moderate" nonattainment for the 2008 eight-hour ozone National Ambient Air Quality Standard (NAAQS), the department is proposing to revise the rules listed above to address the requirements of the State Implementation Plan (SIP).

Additional information about these draft rules is available on the Enhanced Regulatory Outreach Program (EROP) website (<http://www.maricopa.gov/regulations>). In order to enhance the discussion and cost savings, as well as support the county's sustainability initiative, information will be electronically displayed during the workshops. If you prefer a hardcopy of the documentation, please print the information from this announcement.

Thank you for participating in the rulemaking process.

*When you arrive at 1001 North Central Avenue, please check-in in Suite #125 then proceed to the Floor 9 classroom.



Revised 07/13/88
 Revised 09/21/92
 Revised 06/19/96
 Revised 04/07/99
 Revised MM/DD/YY

Revised 07/13/88; Revised 09/21/92; Revised 06/19/96; Revised 04/07/99; **Revised MM/DD/YY**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS

RULE 336
SURFACE COATING AND MANUFACTURING OPERATIONS

SECTION 100 – GENERAL

101 PURPOSE: To limit the emission of volatile organic compounds (VOCs) from surface coating, manufacturing and repair operations.

102 APPLICABILITY: This rule applies to the following three types of VOC sources:

102.1 Surface Coating Operations: This rule is applicable to surface coating operations listed in ~~Table 1~~ either Table 336-1; Table 336-2 ; or Table 336-3 of this rule that are not more specifically regulated by another rule within Rules 300 to 359 of Maricopa County Air Pollution Control Regulations, Regulation III. ~~Examples of The~~ coating operations not regulated by this rule ~~appear in subsection 305.4~~ are listed in Section 305.4 104 of this rule.

Surface-coating activities regulated under this rule include, but are not limited to, the application of coating, coating preparation/mixing at the facility, applying the coating, and the cleanup of coating application equipment.

~~102.2 Subsections 305.2 through 305.7 set forth partial or conditional exemptions for certain materials or uses employed by a surface coating operation subject to this rule.~~

~~102.3 This rule is not applicable to coatings having a VOC content, minus exempt compounds, of less than 0.15 lb VOC/gal (18g/L) nor to solvents having a VOC content of material less than 0.15 lb VOC/gal.~~

102.2 Manufacturing and Repair Operations:

a. Resin Materials: This rule is applicable to the manufacturing, fabrication, rework, repair, and touch-up of composite products made of resin and gel coats.

b. Pleasure Craft and Fiberglass Boat Manufacturing and Repair: This rule is applicable to all manufacturing, refinishing, repairing, modification operations of fiberglass products and their parts, as defined in Section 200.31 of this rule.

102.3 Industrial Adhesives and/or Adhesive Primers: This rule is applicable to adhesive and/or adhesive primer usage which includes, but is not limited to, the application of adhesive, adhesive preparation/mixing at the facility, applying the adhesive, and the cleanup of the adhesive application equipment.

102.4 NSPS & NESHAP: In addition to this rule, facilities may be subject to New Source Performance Standards (NSPS) in Rule 360 and/or to National Emission Standards for Hazardous Air Pollutants (NESHAP) in Rule 370 of these rules

103 TOTAL EXEMPTIONS AND BURDEN OF PROOF: The owner or operator claiming a total exemption under Sections 103.1 shall document the type and quantity of VOC containing materials used and keep records according to Section 500 to justify the exemption status.



103.1 Total VOC Content: This rule is not applicable to coatings, manufacturing or repair materials having a VOC content, minus exempt compounds, of less than 0.15 lb VOC/gal per day (18g/L) (6.8 kg/day) or 2.7 tons per 12-month rolling period prior to controls nor to solvents having a VOC content of material less than 0.15 lb VOC/gal per day. However once a facility exceeds these threshold amounts, that facility shall be permanently subject to all components of this rule even if emissions later fall back below these thresholds.

SURFACE COATING EXEMPTIONS: The following are exempt from Section 301 of this rule:

103.2 Leak-Preventing Materials:

a. Sealants, adhesives, caulking, and similar materials used on the following substrates for the primary purpose of leak prevention:

- (1) Non-metallic substrates; and
- (2) Used substrates, post manufacture, such as, but not limited to, old joints and seals on pipe and valve assemblies.

103.3 Certain Joint Fillers: Caulking and beaded sealants used to fill gaps or to fill joints between surfaces are exempt from this rule, except those used in manufacturing other metal parts and products as defined in Section 248 of this rule, or in the manufacturing of cans.

103.4 ECS Use In Lieu of Equipment/Practice: In lieu of meeting an equipment or work practice standard within Sections 301, 302, 303, 304, and 307 of this rule, an owner or operator is allowed to instead use an ECS that has a capture efficiency not less than 90% and meets all ECS requirements in Section 305.

103.5 Military coating: A tactical military-equipment coating that is approved in a Maricopa County Air Pollution Permit subsequent to a sufficient demonstration by the user that no compliant substitute exists.

103.6 Special Facilities/Operations:

- a. **Silicone Release Coatings:** Silicone release coating operations controlled by an ECS pursuant to Section 305 of this rule are exempt from the 90 percent overall control efficiency requirement if the ECS demonstrates at least 70 percent overall control and the coating is applied with a liquid seal air spray system.
- b. **Bonding Impact Resistant Rubber Lining to Metal:** An adhesive and an adhesive-primer are exempt from Table 336-1 VOC limits, but shall not have a VOC content of material exceeding 850 grams of VOC per liter (7.1 lb/gal), if such adhesive is used to bond sheets/strips of rubber to metal equipment so that such rubber sheathing directly contacts material received by the metal and so protects the metal. This exception does not apply to any other situations where adhesives are used to bond rubber to metal.

103.7 Exemption of Coating Applicator Cleanup: An owner and/or operator can use solvent that has at 20° C (68° F) a total VOC vapor pressure above 35 mm Hg for cleaning coating-application equipment, but only if such application equipment does not use spray devices and the same principal solvent is used for cleaning as is used in the coating.

POLYESTER RESIN OPERATION EXEMPTIONS:

103.8 The owner and/or operator of a polyester resin operation can claim a total exemption to this rule if they do not use more than 20 gallons per month of polyester resin material, however once a source exceeds the exemption limit, that facility is permanently subject to all applicable components of this Rule 336: Surface Coating and Manufacturing Operations.

103.9 Resin and Gel Coats Exceptions: The following coatings are exempt from the requirements of Section 302 and Table 336-4:



- a. Life-Saving Craft:** Production resins applied for military vessels, U.S. Coast Guard lifeboats, rescue boats, and other life-saving appliances approved under 46 CFR subchapter Q, or the construction of small passenger vessels regulated by 46 CFR subchapter T are exempt although all applications shall be with non-atomizing application equipment serving as emission control.
- b. Part or Mold Repair and Touch Up:** Production and tooling resins, pigmented, clear, and tooling gel coat used for part or mold repair and touch shall not exceed 1 percent by weight of all resin and gel coat used at a facility on a 12-month rolling-average basis.
- c. Skin Coats made with Pure 100-Percent Resins:**
Pure, 100-percent resins (blends of vinyl ester and polyester) used for skin coats shall be applied with non-atomizing resin application equipment serving as the emission control. The total amount of resin used shall not exceed 5 percent by weight of all resin used at a facility on a 12-month rolling average basis.

PLEASURE CRAFT AND FIBERGLASS BOAT MANUFACTURING AND REPAIR EXEMPTIONS: The following are exempt from the VOC limits of this rule (Sections 301 through 307 of this rule) but shall comply with the work practices listed in Section 307 and recordkeeping requirements listed in Section 501 of this rule:

- 103.10** Coating with aerosol cans;
- 103.11** Facilities that use 3 gallons per day or less than 66 gal. per calendar month of coating, as applied, for touch-up, and repair, including VOC containing materials added to the original coating as supplied by the manufacturer. However once a source exceeds the exemption limit, that facility is permanently subject to all applicable components of this Rule 336: Surface Coating and Manufacturing Operations.
- 103.12** Other Plastic Parts Coating Exclusions:
 - a.** Clear or translucent coatings;
 - b.** Coatings applied at a paint manufacturing facility while conducting performance tests on the coatings;
 - c.** Electric-Insulating and Thermal-Conducting Coatings.

INDUSTRIAL ADHESIVE EXEMPTIONS:

- 103.13** Total Adhesive Use: Facilities whose total usage of all miscellaneous industrial adhesives consist of a net volume of 16 ounces or less, or a net weight of one pound per day or less; or
- 103.14** Tire Repair; or
- 103.15** Flat Wood Paneling; or
- 103.16** Field operations including construction.

104 **TOTAL CATEGORICAL EXEMPTIONS:** This rule does not apply to the following operations:

- 104.1** Aerospace coating operations (Rule 348).
- 104.2** Architectural coatings including buildings and erected structures (Rule 335).
- 104.3** Cleaning: VOC loss from cleaning or stripping a surface for coating or other purpose is regulated by Rule 334. VOC-containing solvents used to remove impurities from exterior or interior surfaces as regulated by Rule 331 (Solvent Cleaning) of these rules.
- 104.4** Printing and graphic arts coating (Rule 337).
- 104.5** Semiconductor manufacturing (Rule 338).
- 104.6** Coating or refinishing a highway vehicle or mobile equipment (Rule 345).



- 104.7 Coating interior or exterior auto parts.
- 104.8 Coating automotive and transportation equipment.
- 104.9 Coating motor vehicle accessories.
- 104.10 Coating wood furniture and fixtures (Rule 342).
- 104.11 Coating wood millwork (Rule 346).
- 104.12 Polystyrene Foam Operations (Rule 358).
- 104.13 Rubber Tire Manufacturing.

105 PARTIAL EXEMPTIONS:

SURFACE COATINGS: An owner and/or operator using the coatings listed shall be exempt from the following sections, however they are subject to all other applicable provisions of this rule. Once a facility exceeds the exemption limit, that facility is then permanently subject to all provisions of this rule.

- 105.1 **Extreme Performance Coatings:** Extreme performance coatings are exempt from the VOC limits in ~~4~~ Tables 336-1, 336-2; 336-3 of this rule but not from any other Sections of this Rule 336 when used under the following conditions:
 - a. Used on internal combustion engine components that are normally above 250°F (121°C) during use; or
 - b. Used at temperatures above 250°F (121°C) on items that are both included under the ~~SIC~~ (Standard Industrial Classification) North American Industry Classifications System (NAICS) codes ~~3661,3663,3669,3677,3678,3679, or 3769~~ 334210, 334220, 334290, 334416, 334417, 334418, 334419, 334310 or 336419 and are electronic products in space vehicles and/or are communications equipment. The US Government Printing Office“ Standard Industrial Classification Manual, 1987”(and no future editions) is incorporated by reference and is on file at the Maricopa County Air Quality Department, Planning and Analysis Division, 1001 N. Central Avenue, Suite 595, Phoenix, Arizona 85004.
- 105.2 **Stencil coatings** as defined in Section 200.104 of this rule and used to coat metal parts, are exempt from the VOC limits listed in Section 301, Tables 336- 1 through 336-3 and the application methods (Section 306), but still shall comply with the work practices (Sections 307) and the recordkeeping provisions listed in Section 500 of this rule.
- 105.3 **Stencil coatings**, as defined in Section 200.104 of this rule, applied on clear or transparent substances and used to coat plastic parts are exempt from the VOC limitations listed in Section 301; Tables 336-1, 336-2 and 336-3 of this rule, but still shall comply with the application methods (Section 306) , the work practices (Sections 307) of this rule and the recordkeeping provisions listed in Section 500 of this rule.
- 105.4 **Spray Gun and VOC Limit Miscellaneous Exemptions:** The following application methods coatings or operations are exempt from the following sections of this rule: VOC limits in Tables 336-1 through 336-3, ECS requirements (Section 305), and application methods (Section 306), but still shall comply with the work practices listed in Sections 307 and the recordkeeping provisions listed in Section 500.
 - a. Coating with an aerosol can (Section 202 of this rule); or
 - b. Low usage Coatings, listed in Tables 336-1 through 336-3,when aggregate of all formulations do not exceed 55 gallons (208 liters) per year facility-wide, calculated as defined in Section ~~501-2~~ 505 of this rule;or
- 105.5 **A Quality Class Q protective coating that is used on equipment, structures, and/or components within a containment facility of a nuclear power plant and is approved in accordance with either ANSI**



standards American Society of Testing Materials Standards N101.2 and N101.4 or with ASTM standards D3911 and D3843 (ASTM) D5144-00, D3911-03, or D3843-00.

105.6 **Low Usage Allowance for Restricted Guns:** An owner or operator may use spray guns otherwise prohibited by Section 306 of this rule for use with coatings over 2 lbs. VOC/gal under the following limited conditions:

- a.** If VOC emissions from the finishing application station are captured and directed to an ECS complying with the provisions of Section 305 of this rule; or
- b.** To coat the inside of pipes and tubes with a wand-style applicator; or
- c.** Using an airbrush or other small gun that has a reservoir capacity not exceeding 250 cc (8.8 fluid ounces) and is used solely for detailing, lettering, touchup, and/or repair.

POLYESTER RESIN OPERATIONS: An owner and/or operator using resin/gel coats on the equipment, materials or processes listed shall be exempt from the following sections, however they are subject to all other applicable provisions of this rule. Once a facility exceeds the exemption limit, that facility is then permanently subject to all provisions of this rule.

105.6 **Polyester Resin and Gel Coats – Fiberglass Boats:** Use of non-atomizing application equipment (Section 200.69 of this rule) exempts the following from Section 302, Table 336-4 of this rule.

- a.** **Life-Saving Craft:** Application of polyester resin or gel coats on lifesaving craft.
- b.** **Part or Mold Repair and Touch up:** The total quantity of all materials shall not exceed 1 percent by weight used at a facility on a 12-month rolling-average basis.
- c.** **Skin Coats made with Pure 100-Percent Resins (blends of vinyl ester and polyester):** The total quantity of all materials shall not exceed 5 percent by weight of all resin used at a facility on a 12-month rolling average basis.

105.7 **Polyester Resin Bonding Putties:** An owner or operator using polyester resin bonding putties (Section 200.83 of this rule) to assemble fiberglass parts at fiberglass boat manufacturing facilities and/or at other reinforced plastic composite manufacturing facilities are exempt from the VOC emission limits listed in Section 302 and Section 303 of this rule.

INDUSTRIAL ADHESIVES: An owner or operator using the adhesives listed shall be exempt from the VOC limits listed in Section 304 and the ECS 90% control efficiency listed in Section 305 but still shall comply with the application methods in Section 306 and the work practices listed in Section 307, however they are subject to all other applicable provisions of this rule. Once a facility exceeds the exemption limit, that facility is then permanently subject to all provisions of this rule.

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

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

104.10 Adhesives or adhesive primers used in medical equipment manufacturing operations; or

105.11 Cyanoacrylate adhesive application processes; or

105.12 Aerosol adhesive and aerosol adhesive primer application processes; or

105.13 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; or

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



SECTION 200 – DEFINITIONS: For the purpose of this rule, the following definitions shall apply: In addition to those definitions found in Rule 100: General Provisions and Definition of these rules. In the event of any inconsistency between any of the Maricopa County air pollution control rules the definitions in this rule take precedence.

- ~~201~~**200.01** **ADHESIVE** – A chemical substance that is applied for the purpose of bonding two surfaces together other than by mechanical means.
- 200.02** **ADHESIVE PRIMER:** Any product intended by the manufacturer for application to a substrate, prior to the application of an adhesive, to provide a bonding surface.
- ~~202~~ **AEROSOL CAN**—An aerosol coating product which comes in a non-refillable hand-held container from which a product is dispensed by means of pressurized propellant packaged within the container.
- 200.03** **AEROSOL CAN-SPRAY COATING** – A coating which is sold in a hand-held, pressurized, non-refillable container, of less than 22 fluid ounces (0.66 liter) capacity, and which is expelled from the container in a finely divided form when a valve on the container is depressed.
- ~~203~~**200.04** **AIR-DRIED COATING:** A coating which is dried by the use of air or forced warm air at temperatures up to and including 200°F (93.3°C).
- 200.05** **AIRLESS SPRAY:** A system that atomizes principally by hydraulic pressure, including “airless” and “air assisted airless”.
- ~~204~~**200.06** **BAKED COATING:** A coating that is dried or cured in an oven in which the oven temperature exceeds 200°F (93.3°C).
- 200.07** **CAMOUFLAGE COATING:** A coating used, principally by the military, to conceal equipment from detection.
- ~~205~~**200.08** **CAN COATING:** Any coating either used in the production of metal cans-applied to the surface(s) of formed cans or applied at a can making facility to the surface(s) of flat metal sheets or strips that are formed there into cans.
- ~~206~~**200.09** **CAN PRINTING INK:** A fluid or viscous formulation used in can printing that imparts design, pattern, and/or alphanumeric symbols to a can.
- 200.10** **CLEANUP:** The removal of uncured coating from any surface.
- ~~207~~**200.11** **CLEAR COAT:** Any coating which lacks color or opacity or is transparent.
- 200.12** **CLOSED MOLDING OPERATIONS:** Any molding process in which pressure is used to distribute the resin through the reinforcing fabric placed between two mold surfaces to either saturate the fabric or fill the mold cavity. The pressure may be clamping pressure, fluid pressure, atmospheric pressure, or vacuum pressure used either alone or in combination. The mold surfaces may be rigid or flexible. Closed molding includes, but is not limited to, compression molding with sheet molding compound, infusion molding, resin injection molding (RIM), vacuum assisted resin transfer molding (VARTM), resin transfer molding (RTM), and vacuum assisted compression molding. In closed molding operations, nearly all of the monomers are bound in the cross-link reactions and emissions are very low. (Closed molding is generally applicable to making a large number of small parts, such as hatches and locker doors, or small numbers of high performance boat hulls.)
- 200.13** **COATING APPLICATION EQUIPMENT:** Any spray gun, wand, rollers, brushes or any other means used to apply or cover a surface with a coating for either beauty, protection or other purposes
- ~~208~~**200.14** **COIL COATING:** Any coating applied to the surface(s) of flat metal sheets or strips that are formed into rolls or coils not used to make cans.



- 200.15** **CORROSION-RESISTANT RESIN:** Polyester resin material used to make products for corrosion resistant applications such as, but not limited to, tooling, fuel or chemical tanks, boat hulls, pools and outdoor spas.
- ~~209~~**200.16** **DAY:** A period of 24 consecutive hours beginning at midnight.
- 200.17** **DIP COAT (INCLUDING ELECTRO-DEPOSITION):** A coating application method accomplished by dipping an object into coating.
- 200.18** **DRUM:** A cylindrical metal shipping container larger than 12 gallons capacity but no larger than 110 gallons capacity.
- 200.19** **ELECTRIC DISSIPATING COATING:** A coating that rapidly dissipates a high-voltage electric charge.
- ~~210~~ **200.20** **ELECTROSTATIC SPRAY/SYSTEM:** A method of applying atomized paint by electrically charging the coating and the object being coated with opposing charges. A higher proportion of the coating reaches and coats the object than would occur in the absence of a charge.
- ~~211~~ **200.21** **EMISSION CONTROL SYSTEM (ECS):** A system, approved in writing by the Control Officer, designed and operated in accordance with good engineering practice to reduce emissions of volatile organic compounds. Such system consists of an emissions collection subsystem and an emissions processing subsystem.
- ~~212~~ **200.22** **END SEALING COMPOUND:** A compound which is coated onto can ends and functions as a gasket when the end is attached to the can.
- 200.23** **ETCHING FILLER:** A coating that contains less than 23 percent solids by weight and at least ½ percent acid by weight, and is used instead of applying a pretreatment coating followed by a primer.
- ~~213~~ **200.24** **EXEMPT EVAPORATING COMPONENTS (EXEMPT COMPOUNDS):** The non-VOC, evaporating portion of a coating formulation; this necessarily includes all non-precursor organic compounds as defined in Rule 100 of these Rules and Regulations, as well as water and other inorganic liquids and gases.
- ~~214~~**200.25** **EXTERIOR CAN BASECOAT:** Any coating applied to the exterior of a can to provide protection for the metal or to provide background for any lithographic or printing operation.
- 200.26** **EXTREME HIGH-GLOSS COATING:** A coating which when tested by the American Society for Testing Material Test Method D-523 adopted in 1980, shows reflectance of 75 or more on a 60° meter.
- ~~215~~**200.27** **EXTREME-PERFORMANCE COATING:** A coating used on a surface where the coated surface in its intended use is at temperatures consistently in excess of 250°F (121°C). Extreme performance coatings include but are not limited to, coatings applied to locomotives, railroad cars, farm machinery, and heavy duty trucks.
- ~~216~~**200.28** **FABRIC:** A textile material. Non-manufactured items from nature are not fabric except for natural threads, fibers, filaments, and similar that have been manufactured into textile fabric.
- ~~217~~**200.29** **FABRIC COATING:** Any decorative or protective coating or reinforcing material applied onto or impregnated into textile fabric.
- 200.30** **FIBERGLASS BOAT MOLDS:** Fiberglass boat manufacturing facilities construct the molds or “tools” that are used to build the separate parts of the fiberglass boat. The production of molds is done using specialized resins and gel coats referred to as tooling resin and gel coat. These differ



from production resin and gel coat in that they are harder, more heat resistant, and more dimensionally stable than production materials.

- 200.31** **FIBERGLASS:** A process where the liquid resin is mixed with a catalyst before it is applied to the glass, which causes a cross-linking reaction between the resin molecules. The catalyzed resin hardens to form a rigid shape consisting of the plastic resin reinforced with glass fibers. fiberglass (also known as fiber reinforced plastic or FRP, aluminum, rotationally molded (rotomolded) polyethylene (PLASTIC).
- 200.32** **FILAMENT APPLICATION-** A method of applying resin to an open mold that involves feeding reinforcement fibers through a resin bath and winding the resin-impregnated fibers on a rotating mandrel.
- 200.33** **FILLER :** A finely divided inert (non-VOC) material, which may be added to the resin to enhance its mechanical properties and extend its volume. Resin fillers include, but are not limited to, silica, carbon black, talc, mica and calcium carbonate.
- 200.34** **FLEXIBLE VINYL:** A non-rigid polyvinyl chloride plastic with at 5 percent by weight plasticizer content.
- 200.35** **FLOW COATING: (Flow Coaters):** A coating application system, with no air supplied to the nozzle, where paint flows over the part and the excess coating drains back into the collection system.
- 200.36** **FLUID IMPINGEMENT TECHNOLOGY:** A spray gun that produces an expanding non-misting curtain of liquid by the impingement of low-pressure uninterrupted liquid stream.
- ~~218~~**200.37** **FILM COATING:** Any coating applied in a web coating process on film substrate other than paper or fabric, including, but not limited to, typewriter ribbons, photographic film, magnetic tape, and metal foil gift wrap.
- 200.38** **FINISH PRIMER/ SURFACER:** A coating applied with a wet thickness film of 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.
- 200.39** **FIRE RETARDANT RESIN:** Polyester resin material used to make products that are resistant to flame or are a low flame spread/low smoke product, as defined in 40 CFR 63.5935.
- 200.40** **FLEXIBLE COATING:** Any coating that is required to comply with engineering specifications for impact resistance, mandrel bend, or elongation as defined by the original equipment manufacturer.
- ~~219~~**200.41** **FLEXIBLE PLASTIC PART OR PRODUCT:** A plastic part or product designed to withstand significant deformation without damaging it for its intended use. Not included are flexible plastic parts that are found on a can, coil, metal furniture, or large appliance, or that are already a part of an aerospace component, highway vehicle, mobile equipment, architectural building or structure, or a previously coated marine-vessel.
- 200.42** **FLOW COATING: (Flow Coaters):** A coating application system, with no air supplied to the nozzle, where paint flows over the part and the excess coating drains back into the collection system.
- 200.43** **FLUID IMPINGEMENT TECHNOLOGY:** A spray gun that produces an expanding non-misting curtain of liquid by the impingement of low-pressure uninterrupted liquid stream.
- 200.44** **GEL COAT:** A thermosetting polyester resin surface coating, either pigmented or clear, that provides a cosmetic enhancement and improves resistance to degradation from exposure to the elements.
- 200.45** **GLOSS REDUCER:** A coating that is applied to a plastic part solely to reduce the shine of the part and is applied at a thickness of less than or equal to 0.5 mils of coating solids.



- 200.46** **HEAT-RESISTANT COATING:** A coating that must withstand a temperature of at least 400° during normal use.
- 200.47** **HAND APPLICATION METHODS:** Application of coatings by non-mechanical, hand-held equipment including but not limited to paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges.
- 200.48** **HIGH-TEMPERATURE COATING:** A coating that is certified to withstand a temperature of 1000°F for 24 hours.
- ~~220~~**200.49** **HEAT SENSITIVE MATERIAL** Materials which cannot consistently be exposed to temperatures greater than 203°F (95°C) without materially affecting desired function, performance, or other characteristics **HIGH VOLUME-LOW PRESSURE SPRAY EQUIPMENT:** Spray Equipment used to apply coatings which is designed to be operated and is operated between 0.1 and 10.0 pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns.
- ~~224~~**200.50** **HIGHWAY VEHICLE:** Any vehicle that is physically capable of being driven upon a highway including, but not limited to, cars, pickups, vans, trucks, truck-tractors, motor-homes, motorcycles, and utility vehicles.
- ~~222~~**200.51** **INTERIOR BASECOAT:** Any coating applied to the interior of a can to provide a protective lining between the intended contents and the metal shell of the can.
- ~~223~~**200.52** **INTERIOR BODY SPRAY:** Any coating sprayed onto the interior of a can to provide a protective film between the intended contents and the metal shell of the can.
- 200.53** **LAMINATE:** A product made by bonding together two or more layers of material.
- ~~224~~**200.54** **LARGE APPLIANCE:** A door, case, lid, panel, or interior support part of residential and commercial washers, dryers, ranges, refrigerators, freezers, water heaters, dishwashers, trash compactors, air conditioners, evaporative coolers, and other similar products.
- ~~225~~ **LOW PRESSURE SPRAY GUN:** An air atomized spray gun that, by design, functions best at tip pressures below 10 psig (516 mm Hg), measured according to Section 503.1d of this rule, and for which the manufacturer makes no claims to the public that the gun can be used effectively above 12 psig (619 mm Hg).
- 200.55** **LIFE-SAVING CRAFT:** Military vessels, U.S. Coast Guard lifeboats, rescue boats, and other life-saving appliances approved under 46 CFR subchapter Q, or the construction of small passenger vessels regulated by 46 CFR subchapter T.
- 200.56** **MARBLE OR CULTURED RESINS:** Orthophthalate and modified acrylic isophthalate resins used for the fabrication of cast products.
- 200.57** **MARINE VESSEL** –Any tugboat, tanker, freighter, passenger ship, barge, or other boat, ship or watercraft except those used primarily for recreation. This includes both salt water and fresh water vessels.
- ~~226~~**200.58** **METAL FURNITURE:** Any furniture made of metal or any metal part which will be assembled with other parts made of metal or other material(s) to form a furniture piece.
- 200.59** **METALLIC COATING:** A coating which contains more than 5 grams of metal particles per liter of coating as applied.
- 200.60** **MILITARY SPECIFICATION COATING:** A coating that has a formulation that has been approved by a United States Military Agency for use on military equipment.
- ~~227~~**200.61** **MINUS EXEMPT COMPOUNDS or MINUS EXEMPT EVAPORATING COMPONENTS:** See VOC Content Minus Exempt Compounds.



- 200.62** **MIRROR BACKING COATING:** Any coating applied onto the silvered surface of a mirror.
- ~~228~~**200.63** **MOBILE EQUIPMENT:** Any equipment that is physically capable of being driven or drawn upon a highway including, but not limited to, the following types of equipment: construction vehicles (such as mobile cranes, bulldozers, concrete mixers); farming equipment (wheel tractor, plow, pesticide sprayer); hauling equipment (truck trailers, utility bodies, camper shells); and miscellaneous equipment (street cleaners, mopeds, golf carts).
- 200.64** **MOLD-SEAL COATING:** The initial coating applied to a new mold or a repaired mold to provide a smooth surface which, when coated with a mold release coating, prevents products from sticking to the mold.
- 200.65** **MONOMER:** A volatile organic compound that partially combines with itself, or other similar compounds, by a cross-linking reaction to become a part of the cured resin or gel coat. A fraction of each monomer compound evaporates during resin and gel coat application and curing. Styrene and methacrylate (MMA) are the primary monomer VOC we have identified in the resins and gel coats used in fiberglass boat manufacturing.
- The resins contain styrene and the gel coats contain both compounds. In the remainder of this rule the monomers in resins and gel coats are referred to as monomer VOC.
- 200.66** **MONOMER PERCENT BY WEIGHT OF A RESIN:** the weight of the monomer, divided by the weight of the polymer.
- 200.67** **NON-PRECURSOR ORGANIC COMPOUND:** Any of the organic compounds which have been designated by the EPA as having negligible photochemical reactivity. EPA designates such compounds as “exempt”. A listing of these compounds is found in Rule 100.**MULTI-COMPONENT COATING:** A coating requiring the addition of one or more separate reactive resins, commonly known as catalysts or hardeners, prior to application to form an acceptable dry film.
- ~~229~~**200.68** **ORGANIC COMPOUND:** Any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, carbonates, and metallic carbides. **ONE-COMPONENT COATING:** Any coating that is ready for application as it comes out of its container to form an acceptable dry film. A thinner or reducer, necessary to reduce the viscosity, is not considered a component.
- 200.69** **NON-ATOMIZING SPRAY APPLICATION EQUIPMENT:** Any application technique in which resin flows from the applicator, in a steady and observable coherent flow, without droplets, for a minimum distance of three (3) inches from the applicator orifices. Non-Atomized mechanical application means the use of application tools other than buckets and brushes to apply resin and gel coat. Examples of non-atomized application include flow coaters, pressure-fed rollers, and fluid impingement spray guns.
- 200.70** **OPEN MOLDING:** Boats made from fiberglass are typically manufactured in a process known as open molding. Separate molds are typically used for the boat hull, deck, and miscellaneous small fiberglass parts (also known as fiber reinforced plastic or FRP). Examples of FRP parts are fuel tanks, seats, storage lockers, and hatches.
- ~~230~~**200.71** **OTHER METAL PARTS AND PRODUCTS:** Any metal part or product, excluding the following items that are made of metal: can, coil, furniture, large appliance, aerospace component, metal foil, metal textile fabric, semiconductor metal, highway vehicle, mobile equipment, an architectural building or structure, a previously coated marine-vessel.
- ~~234~~**200.72** **OVERVARNISH:** Any coating applied to a can to reduce the coefficient of friction, to provide gloss, or to protect the finish against abrasion and/or corrosion.
- 200.73** **PAN BACKING COATING:** A coating applied to the surface of pots, pans, or other cooking implements that are exposed directly to a flame or other heating element.



- ~~232~~200.74 **PAPER COATING:** Any coating applied on or impregnated into paper, including, but not limited to, adhesive tapes ~~and labels~~, book covers, post cards, office copier paper, and drafting paper ~~and pressure sensitive tapes~~.
- 200.75 **PIGMENTED GEL COATS:** Used when a solid color surface is desired. Most gel coats are pigmented. Clear gel coats do not have any pigments and usually have a higher VOC content than pigmented gel coats.
- ~~233~~200.76 **PLASTIC:** A substrate containing one or more resins and may be solid, porous, flexible, or rigid. Plastics include fiber reinforced plastic composites. Any solid, synthetic: resin, polymer, or elastomer, except rubber. For the purposes of this rule, plastic film is considered film; fabric and paper made of polymeric plastic fibers are considered fabric and paper, respectively.
- 200.77 **PLEASURE CRAFT:** Any marine or fresh-water vessel used by individuals for noncommercial, nonmilitary, and recreational purposes that is less than 20 meters (78.7 feet) in length. A vessel rented exclusively to or chartered by individuals for such purposes shall be considered a pleasure craft as defined in 40 C.F.R. § 63.782.
The definition of ship specifically refers to the use of the vessel for military or commercial activities.
- 200.78 **PLEASURE CRAFT COATING:** Any marine coating, except unsaturated polyester resin (fiberglass) coatings, applied by brush, spray, roller, or other means to a pleasure craft.
- ~~234~~200.79 **POLYESTER AND POLYESTER RESIN:** A complex, polymeric ester containing difunctional acids. ~~Polyester resins can be isophthalic, orthophthalic, halogenated, bisphenol A, vinyl ester, furans, cross linking agents, catalysts, gel coats, inhibitors, accelerators, promoters and any other material containing VOC used in polyester resin operations.~~
- ~~235~~200.80 **POLYESTER COMPOSITE:** Cured material made of polyester resin with reinforcing material imbedded in it, such as glass fibers.
- 200.81 **POLYESTER:** A polymer of ester molecules, which are formulated by the reaction of an acid and an alcohol and linked together by the ester linkages, which is dissolved in a monomer
- 200.82 **POLYESTER RESIN MATERIALS:** Unsaturated polyester resins, such as Isophthalic, orthophthalic, halogenated, bisphenol A, vinyl ester, or furan resins; cross-linking agents; catalysts; gel coats; inhibitors; accelerators; promoters; and any other material containing VOC used in polyester resin operations.
- 200.83 **POLYESTER RESIN PUTTIES:** Fiberglass or fiber reinforced plastic (FRP) parts of the boat assembly are small pieces of woven glass or glass mat and resin, putties, or mechanical fasteners which are used assemble fiberglass parts and to fill gaps between parts. These polyester resins are mixed with fillers to create putty. The putty becomes part of the composite structure. The putties may be applied by hand, or by using mechanically powered equipment similar to a large caulking gun. These polyester resin putties used to assemble fiberglass parts are not considered adhesives and are addressed in this CTG.
- 200.84 **POWDER COATING:** Any material applied as a dry (without carrier) finely divided solid which, when melted and fused, adheres to the substrate as a paint film.
- ~~257~~ **PREFABRICATED ARCHITECTURAL COMPONENT COATING:** ~~A coating applied to metal parts and products which are to be used as an architectural structure.~~
- ~~258~~ **PRESSURE SENSITIVE LABEL:** ~~A flexible strip of paper or other material that is coated on one side with a permanently tacky adhesive which will adhere to a variety of surfaces with light pressure.~~
- ~~259~~ **PRESSURE SENSITIVE TAPE:** ~~A flexible backing material with a pressure sensitive adhesive coating on one or both sides of the backing such as duct tape, duct insulation tape and medical tape.~~



- ~~236~~**200.85** **PRETREATMENT COATING:** A coating which contains no more than 12 percent solids by weight, and at least 1/2 percent acid, by weight, is used to provide surface etching, and is applied directly to metal surfaces to provide corrosion resistance, adhesion and ease of stripping.
- ~~237~~**200.86** **PRIMER:** A coating applied directly to substrate for any one or combination of the following purposes: corrosion prevention, protection from the environment, functional fluid resistance, or adhesion of subsequent coatings.
- ~~238~~**200.87** **PULTRUSION:** A process where continuous roving strands are moved through a strand-tensioning device into a resin bath for impregnation and then passed through a heated die for curing.
- ~~239~~**200.88** **QUALITY CLASS Q:** Any system, structure, coating or other component which, if defective or inoperable, could cause or increase the severity of a nuclear incident, thereby imposing undue risk to the health and safety of the public.
- ~~240~~**200.89** **REINFORCED PLASTIC COMPOSITE:** A composite material consisting of plastic reinforced with fibers.
- ~~241~~**200.90** **RUBBER:** Any natural or manmade rubber substrate, including but not limited to, styrene-butadiene rubber, polychloroprene (neoprene), butyl rubber, nitrile rubber, chlorosulfonated polyethylene and ethylene propylenediene terpolymer.
- ~~242~~**200.91** **REFINISHING:** Recoating a used object's surface which arrives at the refinisher with a coating or with a previous coating worn away by use.
- ~~243~~**200.92** **REPAIR COATING:** A coating or coating operation used to recoat the portion of a completed finish that suffered post-production damage at the facility where the finish was applied.
- ~~244~~**200.93** **REPAIR:** Addition of polyester resin to portions of a previously fabricated product in order to mend mechanical damage which occurs after the normal fabrication process.
- ~~245~~**200.94** **RESIN:** Any thermosetting polyester resin, which is used to encapsulate and bind together reinforcement fibers and/or fillers in the formulation of composite materials. A resin includes any class of organic polymers of natural or synthetic origin used in these reinforced products and is solid or semi-solid in the cured state.
- ~~246~~**200.95** **RESIN IMPREGNATOR:** A mechanical non-atomizing composite materials application technique in which fiber reinforcement is saturated with resins in a controlled ratio for each specific composite product.
- ~~247~~**200.96** **RESTRICTED SPRAY GUN:** Any air-atomizing spray gun that is not a low pressure spray gun, and any other coating gun that is not on the list in ~~Section 303.4~~Section 302 of this rule.
- ~~248~~**200.97** **ROLL COAT (Resin Rollers):** A coating application method accomplished by rolling a coating only a flat surface using a roll applicator.
- ~~249~~**200.98** **SEALANT:** Any material with adhesive properties that is formulated primarily to fill, seal, or waterproof gaps or joints between two surfaces and includes primer and caulks.
- ~~250~~**200.99** **SHOCK-FREE COATING:** A coating applied to electrical components 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.
- ~~251~~**200.100** **SILICONE RELEASE COATING:** Any resin coating the major cured portion of which is silicone resin, having as its primary function the release of food products from metal surfaces such as baking pans.



- 242200.101** **SMALL SURFACE COATING SOURCE (SSCS):** A facility from which the total VOC emissions for all surface coating operations that are subject to this rule without, or prior to, any emission control, is less than 15 pounds (6.8 kg) per day and less than 2 tons (1814 kg) per year; as demonstrated by both adequate records of coating and diluent use (~~pursuant~~ according to Section 501.2 501.4 of this rule) and a separate tally of the number of days each month that such coating operations occur.
- 200.102** **SOLAR-ABSORBENT COATING:** A coating which has as its prime purpose the absorption of solar radiation.
- 200.103** **SOLVENT CLEANING:** Removal of loosely held uncured adhesives, uncured inks, uncured coatings, and contaminants which include, but are not limited to, dirt, soil, and grease from parts, products, tools, machinery, equipment, and general work areas. Each distinct method of cleaning in a cleaning process, which consists of a series of cleaning methods, shall constitute a separate solvent cleaning operation.
- 200.104** **STENCIL COATING:** An ink or a coating which is rolled or brushed onto a template or stamp in order to add identifying letters, symbols and/or numbers.
- 243200.105** **STRIPPABLE BOOTH COATING:** A temporary coating that is applied to spray booth surfaces to receive the overspray and protect the surfaces, and which is designed to readily be pulled off the substrate in strips or sheets, and disposed of.
- 244200.106** **SURFACE COATING:** Any liquid, fluid, or mastic composition which is converted to a solid (or semi-solid) protective, decorative, or adherent film or deposit after application as a thin layer. Surface coating is generally distinct and different from impregnation and from applying adhesive for bonding purposes.
- 245200.107** **SURFACE COATING OPERATION:** Preparation, handling, mixing, and application of surface coating, and cleanup of application-equipment and enclosures at a facility where surface coating is applied.
- 246200.108** **THREE-PIECE CAN SIDE-SEAM COAT SPRAY COATING:** Any coating sprayed onto the interior and/or exterior of a can body seam on a three-piece can to protect the exposed metal.
- 200.109** **TIRE REPAIR:** 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.
- 200.110** **TOOLING RESIN-** A resin that is used to produce molds. Tooling resins generally more heat resistant (have higher heat distortion temperatures), low shrinkage, higher hardness, and higher dimensional stability than the production materials or outer surface coatings.
- 247200.111** **TOPCOAT:** The final, permanent, coating-formulation that completed the finish on a surface.
- 248200.112** **TOTAL VOC VAPOR PRESSURE (VOC COMPOSITE PARTIAL PRESSURE):** The sum of the partial pressures of the compounds defined as VOCs, calculated according to the formula in Section 504 of this rule.
- 249-200.113** **TOUCH-UP COATING:** A coating used to cover minor coating imperfections after the main coating operation. This includes touch-up coating that accompanies the purchase of an object already coated with that coating.
- 200.114** **TRANSFER EFFICIENCY:** The ratio of the weight of coating solids adhering to the part being coated to the weight of coating solids used in the application process expressed as a percentage.
- 250200.115** **TWO-PIECE CAN EXTERIOR END COAT COATING:** Any coating applied to the exterior end of a can to provide protection to the metal.



- 200.116 TUB/SHOWER RESINS:** Dicyclopentadiene (DCPD) resins, along with orthophthalate and isophthalate resins, are used to fabricate bathware products.
- 200.117 VACUUM BAGGING:** A partially closed molding technology using techniques similar to open molding but with a modification in the resin curing stage. After resin decks, but it is not feasible to replace open molding with closed molding at all types of boat manufacturing facilities.
- 200.118 VAPOR PRESSURE:** Pressure exerted at a uniform temperature by the gas of a substance when the gas is in equilibrium with the liquid (or solid) phase of that substance.
- 200.119 VOC VAPOR PRESSURE (VOC COMPOSITE PARTIAL PRESSURE):** Sum of the partial pressures of the compounds defined as VOCs, calculated according to the formula in Section 504 of this rule.
- ~~254~~**200.120 VINYL COATING (COATING ON VINYL):** Any decorative or protective coating or reinforcing coating applied over vinyl-coated textile fabric or vinyl sheets
- ~~252~~**200.121 VOC BORNE COATING:** ~~A coating that contains more VOC than water, by weight.~~ **VOC - CONTAINING MATERIAL** –Any chemical or item that contains an organic compound that participates in atmospheric photochemical reactions, except the non-precursor organic compounds. This includes but is not limited to rags, waste coatings, waste brushes, waste rollers, waste applicators, waste solvents, and their residues that are used for surface preparation, cleanup or removal of surface coatings.
- 253 VOC BORNE DILUENT:** ~~A solvent or other diluent that contains more VOC than water, by weight~~
- ~~254~~**200.122 VOC CONTENT:** In this rule, VOC content is determined by one of the following two formulas: To determine compliance with ~~Table 4~~ the VOC limits in Sections 301 and 304 of this rule or the 2.0 lb VOC/gal. threshold in Section ~~302~~ 306 of this rule, use the following formula in ~~subsection~~ Section 255.1 ~~200.122(a) of this rule~~. For other purposes, use the formula in ~~subsection 255.2~~ Section 200.122(b) of this rule:
- ~~254.1a.~~ **VOC CONTENT MINUS EXEMPT COMPOUNDS** (is the same as **VOC CONTENT MINUS EXEMPT EVAPORATING COMPONENTS**) (also known as **“THE EPA METHOD 24 VOC CONTENT”** on manufacturer’s data sheets.)

$$\frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

VOC Content Minus Exempt Compounds =

Using consistently either English or metric measures in the calculations, where:

W_s = weight of all volatile material in pounds (or grams), including VOC, water, non-precursor organic compounds and dissolved vapors

W_w = weight of water in pounds (or grams)

W_{es} = weight of all non-precursor compounds in pounds (or grams)

V_m = volume of total material in gallons (or liters)

V_w = volume of water in gallons (or liters)

V_{es} = volume of all non-precursor compounds in gallons (or liters)



254.2b. VOC CONTENT OF MATERIAL (MATERIAL VOC-CONTENT)

$$\text{VOC Content of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Using consistently either English or metric measures in the calculations, where: W_s = weight of all volatile material in pounds (or grams) including VOC, water, non-precursor organic compounds and dissolved vapors

W_w = weight of water in pounds (or grams)

W_{es} = weight of all non-precursor compounds in pounds (or grams)

V_m = volume of total material in gallons (or liters)

256 ~~VOLATILE ORGANIC COMPOUND (VOC) – Any organic compound which participates in atmospheric photochemical reactions, except non-precursor~~

200.123 VAPOR SUPPRESSANT: A wax substance added to resin for the purpose of forming a layer on the surface of the resin while it is curing and minimize the outward diffusion of monomer vapor into the atmosphere.

200.124 VAPOR SUPPRESSED RESIN (VSR): Polyester resin material which contains additives to reduce VOC evaporation loss to less than fifty (50) grams per square meter of surface area as determined and certified by resin manufacturers.

SECTION 300 – STANDARDS

301 SURFACE COATINGS: ~~A person~~An owner and/or operator shall comply with one of the following for all applications of surface coatings:

301.1 Meet the VOC limits in ~~Table 4~~Section 301, Tables 336-1 through 336-3 of this rule; or

301.2 Operate an Emission Control System (ECS) in accordance with ~~subsection 306.1~~Section 305.1 of this rule when applying a coating that exceeds the VOC limits in ~~Table 4~~Section 301, Tables 336-1 through 336-3 of this rule; or

301.3 Qualify for an exemption under ~~Section 305~~Sections 103,104 or 105 of this rule.

TABLE 1

SURFACE COATING EMISSION LIMITS		
TYPE OF SURFACE COATING Column I	LIMITS AS APPLIED: VOC content minus exempt compounds (see Section 255.1)	
	Column II lbs/gal g/liter	
Can Coating		
Sheet Basecoat (Exterior and Interior) and Overvarnish	2.8	340
Two Piece Can Exterior (Basecoat and Overvarnish)	2.8	340
Two and Three Piece Can Interior Body Spray	4.2	510
Two Piece Can Exterior End (Spray or Roll Coat)	4.2	510
Three Piece Can Side Seam Spray	5.5	660
End Sealing Compound	3.7	440



Can Printing Ink	2.5	300
Coil Coating (any coat)	2.6	310
Metal Furniture Coating	3.0	360
Large Appliance Coating	2.8	340
OTHER METAL PARTS AND PRODUCTS COATING (As defined in Section 231)		
The following includes Non adhesive Coating, Adhesive, Adhesive Primer, Caulking, and Beaded Sealants:		
Air Dried Coating	3.5	420
Baked Coating [above 200°F (93°C)]	3.0	360
Silicone Release Coating: Baked or Air Dried	3.5	420
Fabric Coating	2.9	350
Film Coating	2.9	350
COATING PLASTIC PARTS AND PRODUCTS THAT ARE Not Defined as Flexible	3.5	420
COATING FLEXIBLE PLASTIC PARTS AND PRODUCTS		
Primer	4.1	490
Color Topcoat	3.8	450
Basecoat/Clear Coat (Combined System) – Limit for either coat	4.5	540
Paper Coating, including Adhesives	2.9	350
Vinyl Coating (Coating on Vinyl)	3.8	450
STRIPPABLE BOOTH COATINGS	2.0	240

TABLE 336-1: SURFACE COATING VOC EMISSION LIMITS
Cans, Coils, Drums, Metal Furniture, Large Appliances

TYPE OF SURFACE COATING	LIMITS AS APPLIED - VOC content minus exempt compounds lbs VOC/gal coating	LIMITS AS APPLIED -VOC content minus exempt compounds lbs VOC/gal coating
Can Coatings:		
Sheet Basecoat (Exterior and Interior) and Overvarnish	2.8	340
Two-Piece Can Exterior (Basecoat and Overvarnish)	2.8	340
Two and Three-Piece Can Interior Body Spray	4.2	510
Two-Piece Can Exterior (Spray or Roll Coat)	4.2	510
Three-Piece Can Side-Seam Spray	5.5	660
End Sealing Compound	3.7	440
Can Printing Ink	2.5	300
Coil Coating (any coat)	2.6	310
Drum Coatings:		
Drum Coating, New, Exterior (Air-Dried)	3.5	420
<i>Effective (insert 1 yr. after rule is adopted)</i>	2.8	340
Drum Coating, New, Exterior (Baked)	3.0	360
<i>Effective (insert 1 yr. after rule is adopted)</i>	2.8	340
Drum Coating, New, Interior (Air-Dried)	3.5	420
Drum Coating, New, Interior (Baked)	3.0	360
Drum Coating, Reconditioned, Exterior (Air-dried)	3.5	420
Drum Coating, Reconditioned, Exterior (Baked)	3.0	360
Drum Coating, Reconditioned, Interior (Air-dried)	3.5	510
Drum Coating, Reconditioned, Interior (Baked)	3.0	360



Metal Furniture Coating Types/Air-dried:		
General One-Component	<u>3.0</u>	<u>360</u>
<i>Effective (insert 1 yr. after rule is adopted)</i>	<u>2.3</u>	<u>280</u>
General, Multi-Component	<u>3.0</u>	<u>360</u>
<i>Effective (insert 1 yr. after rule is adopted)</i>	<u>2.8</u>	<u>340</u>
Extreme High Gloss	<u>3.0</u>	<u>360</u>
<i>Effective (insert 1 yr. after rule is adopted)</i>	<u>2.8</u>	<u>340</u>
Extreme Performance	<u>3.0</u>	<u>360</u>
Heat Resistant	<u>3.0</u>	<u>360</u>
Metallic	<u>3.0</u>	<u>360</u>
Pretreatment Coatings	<u>3.0</u>	<u>360</u>
Solar Absorbent	<u>3.0</u>	<u>360</u>
Metal Furniture Coating Types/Baked:		
General One-Component	<u>3.0</u>	<u>360</u>
<i>Effective (insert 1 yr. after rule is adopted)</i>	<u>2.3</u>	<u>280</u>
General, Multi-Component	<u>3.0</u>	<u>360</u>
<i>Effective (insert 1 yr. after rule is adopted)</i>	<u>2.3</u>	<u>280</u>
Extreme High Gloss	<u>3.0</u>	<u>360</u>
Extreme Performance	<u>3.0</u>	<u>360</u>
Heat Resistant	<u>3.0</u>	<u>360</u>
Metallic	<u>3.0</u>	<u>360</u>
Pretreatment Coatings	<u>3.0</u>	<u>360</u>
Solar Absorbent	<u>3.0</u>	<u>360</u>
Large Appliance Coating Types/Air-dried:		
GENERAL COATINGS		
One-Component	<u>2.8</u>	<u>340</u>
<i>Effective (insert 1 yr. after rule is adopted)</i>	<u>2.3</u>	<u>280</u>
Multi-Component	<u>2.8</u>	<u>340</u>
SPECIALTY COATINGS		
Extreme High Gloss	<u>2.8</u>	<u>340</u>
Extreme Performance	<u>2.8</u>	<u>340</u>
Heat Resistant	<u>2.8</u>	<u>340</u>
Metallic	<u>2.8</u>	<u>340</u>
Pretreatment Coatings	<u>2.8</u>	<u>340</u>
Solar Absorbent	<u>2.8</u>	<u>340</u>
Large Appliance Coating Types / Baked:		
GENERAL COATINGS		
One-Component	<u>2.8</u>	<u>340</u>
<i>Effective (insert 1 yr. after rule is adopted)</i>	<u>2.3</u>	<u>280</u>
Multi-Component	<u>2.8</u>	<u>340</u>
<i>Effective (insert 1 yr. after rule is adopted)</i>	<u>2.3</u>	<u>280</u>
SPECIALTY COATINGS		
Extreme High Gloss	<u>2.8</u>	<u>340</u>
Extreme Performance	<u>2.8</u>	<u>340</u>
Heat Resistant	<u>2.8</u>	<u>340</u>
Metallic	<u>2.8</u>	<u>340</u>
Pretreatment Coatings	<u>2.8</u>	<u>340</u>
Solar Absorbent	<u>2.8</u>	<u>340</u>
Other Metal Parts and Products Coating (as defined in Section 247 of this rule).		



The following includes Non-adhesive Coating, Adhesive, Adhesive Primer, Caulking, and Beaded Sealants:		
GENERAL COATINGS		
Air-Dried Coating-One Component and Multi Component:	<u>3.5</u>	<u>420</u>
<i>Effective (insert 1 yr. after rule is adopted)</i>	<u>2.8</u>	<u>340</u>
Baked Coating [above 200° F(93° C)]-One Component and Multi Component	<u>3.0</u>	<u>360</u>
<i>Effective (insert 1 yr. after rule is adopted)</i>	<u>2.3</u>	<u>280</u>
SPECIALTY COATINGS		
Camouflage (Air-dried)	<u>3.5</u>	<u>420</u>
Camouflage (Baked)	<u>3.0</u>	<u>360</u>
Electric-Insulating Varnish (Air-dried)	<u>3.5</u>	<u>420</u>
Electric-Insulating Varnish (Baked)	<u>3.0</u>	<u>360</u>
Etching Filler (Air-dried)	<u>3.5</u>	<u>420</u>
Etching Filler (Baked)	<u>3.0</u>	<u>360</u>
Extreme High Gloss (Air-dried)	<u>3.5</u>	<u>420</u>
Extreme High Gloss (Baked)	<u>3.0</u>	<u>360</u>
Extreme Performance (Air-dried)	<u>3.5</u>	<u>420</u>
Extreme Performance (Baked)	<u>3.0</u>	<u>360</u>
Heat-Resistant (Air-dried)	<u>3.5</u>	<u>420</u>
Heat-Resistant (Baked)	<u>3.0</u>	<u>360</u>
High Temperature (Air-dried)	<u>3.5</u>	<u>420</u>
High Temperature (Baked)	<u>3.0</u>	<u>360</u>
Metallic (Air-dried)	<u>3.5</u>	<u>420</u>
Metallic (Baked)	<u>3.0</u>	<u>360</u>
Military Specification(Air-dried)	<u>2.8</u>	<u>340</u>
Military Specification(Baked)	<u>2.3</u>	<u>280</u>
Mold-Seal (Air-dried)	<u>3.5</u>	<u>420</u>
Mold-Seal (Baked)	<u>3.0</u>	<u>360</u>
Pan Backing (Both Air-dried and Baked)	<u>3.5</u>	<u>420</u>
Prefabricated Architectural Multi-Component (Air-dried)	<u>3.5</u>	<u>420</u>
Prefabricated Architectural Multi-Component (Baked)	<u>3.0</u>	<u>360</u>
<i>Effective (insert 1 yr. after rule is adopted)</i>	<u>2.3</u>	<u>280</u>
Prefabricated Architectural One Component (Air-dried)	<u>3.5</u>	<u>420</u>
Prefabricated Architectural One Component (Baked)	<u>3.0</u>	<u>360</u>
<i>Effective (insert 1 yr. after rule is adopted)</i>	<u>2.3</u>	<u>280</u>
Pretreatment Coatings (Air-dried)	<u>3.5</u>	<u>420</u>
Pretreatment Coatings (Baked)	<u>3.0</u>	<u>360</u>
Repair and Touch Up (Air-dried)	<u>3.5</u>	<u>420</u>
Repair and Touch Up (Baked)	<u>3.0</u>	<u>360</u>
Silicone Release (Air-dried)	<u>3.5</u>	<u>420</u>
Silicone Release (Baked)	<u>3.0</u>	<u>360</u>
Solar-Absorbent (Air-dried)	<u>3.5</u>	<u>420</u>
Solar-Absorbent (Baked)	<u>3.0</u>	<u>360</u>
Strippable Booth Coatings (All applications)	<u>2.0</u>	<u>240</u>
Vacuum-Metalizing (Air-dried)	<u>3.5</u>	<u>420</u>
Vacuum-Metalizing (Baked)	<u>3.0</u>	<u>360</u>
Pleasure Craft		
Baked	<u>3.0</u>	<u>360</u>
Air-Dried	<u>3.5</u>	<u>420</u>

* see definition in Section 255.1.



**TABLE 336-2: SURFACE COATING VOC EMISSION LIMITS
 PLASTIC PARTS**

<u>TYPE OF SURFACE COATING</u>	<u>LIMITS AS APPLIED</u> VOC content minus exempt compounds <u>lbs VOC/gal coating</u>	<u>LIMITS AS APPLIED</u> VOC content minus exempt compounds <u>g VOC/liter coating</u>
Non-Flexible Plastic Parts including: Primer, Base, Clear and Basecoat/Clear Coat, General Multi-Component, Electric Dissipating Coatings and Shock-Free Coatings, Extreme Performance, Metallic, Mold Seal, Multi-Colored, Optical, Mirror, and Vacuum-Metalizing.	3.5	420
Flexible and Non-Flexible Plastic Parts General One-Component	3.5	420
<i>Effective (insert 1 yr. after rule is adopted)</i>	2.3	280
Strippable Booth Coatings(All applications)	2.0	240
Flexible Primer	3.5	420
Flexible Color Topcoat	3.5	420
Basecoat/ Clear Coat (Combined System) Limit for Either Coat	3.5	420
Gel Coat applied to fiberglass or cultured marble	3.5	420

**TABLE 336-3: SURFACE COATING VOC EMISSION LIMITS
 MISCELLANEOUS COATINGS**

<u>TYPE OF COATING</u>	<u>CURRENT LIMITS AS APPLIED</u> VOC content minus exempt compounds <u>(lbs.VOC/ gal. coating)</u>	<u>CURRENT LIMITS AS APPLIED</u> VOC content minus exempt compounds <u>(g VOC/liter coating)</u>	<u>FUTURE LIMITS AS APPLIED</u> VOC content minus exempt compounds New limits effective (insert 1 yr. after rule is adopted) <u>(lbs.VOC/lb coating)</u>
Concrete Products,(Air-Dried)	3.5	420	n/a*
Concrete Products,(Baked)	3.0	360	n/a
Strippable Booth Coatings	2.0	240	n/a
Vinyl	3.8	450	n/a
Fabric	2.9	350	n/a
Film	2.9	350	0.08
Foil	2.9	350	0.08
Labels (Pressure sensitive)	2.9	350	0.067
Paper including adhesives	2.9	350	0.08
Pressure Sensitive Tape	2.9	350	0.067

*n/a means non- applicable. Thus the existing limit remains in effect for these materials.

302 POLYESTER RESIN OPERATIONS: An owner and/or operator shall comply with one of the following VOC limits for all applications of resin applications:

302.1 Material Requirements:

a. Closed Molding Process:

An owner and/ or operator, who uses a closed molding process, as defined in Section 200.12 of this rule, shall comply with at least one of the requirements listed in Section 302, as well as the requirements in Sections 305 through 307 if applicable and Section 500 of this rule.

b. Open Molding Process:



An owner or operator using an open molding system, as defined in Section 200.70 of this rule, shall limit all formulations of the monomer content of materials used to the percentages specified in Table 336-4 below, by weight, as applied and non-monomer VOC content shall be limited to 5 percent by weight of the total VOC in all resin and gel coats.

- c. All resin and gel coats used shall meet non-monomer VOC content limits of 5 percent.

TABLE 336-4: POLYESTER RESIN OPERATIONS

<u>Gel Coats and Resins</u>	<u>Monomer Percentage by Weight as Applied</u>
Gel Coats	
Clear Gel Coats	-
Marble Resin Gel Coats	42
Boat Manufacturing Gel Coats -Clear	48
Other Tooling Gel Coats	40
All Other Clear Gel Coats	44
Pigmented Gel Coats	-
White and Off-White Gel Coats	30
Non-White Boat Manufacturing Gel coats	33
Other Non-White Gel Coats	37
Primer Gel Coats	28
Speciality Gel Coats	48
-	-
Resins	-
Marble resins	10% with fillers or 32% without fillers*
Solid Surface Resins	17
Tub/Shower Resins	24% with fillers or 35% without fillers
Boat Manufacturing (atomized)	30
Boat Manufacturing (non-atomized)	39
Lamination Resins	31% with fillers or 35% without fillers
Fire Retardant Resins	38
Corrosion Resistant, High Strength and Tooling Resins	-
Non-atomizing Mechanical Application	46**
Filament Application	42**
Manual Application	40**
Other Resins	35

Monomer percent by weight includes the addition of any VOC-containing materials.

* An owner or operator of a polyester resin operation may meet the monomer content limits by adding filler to a resin to reduce the monomer content to the applicable limit or by using resin with a monomer content that complies with the applicable limit without the addition of fillers.

**If the owner or operator manufactures a composite product by using more than one technology to apply corrosion-resistant, high strength or tooling resins, the highest permissible resin monomer content is the applicable limit.

303 PLEASURE CRAFT AND FIBERGLASS BOAT MANUFACTURING AND REPAIR

303.1 PLEASURE CRAFT VOC COATING LIMITS: An owner or operator shall not apply any coatings, including any VOC-containing materials added to the original coating supplied by the manufacturer, which contain VOC in excess of the limits specified in Table 336-4 below.

**TABLE 336-5
 Pleasure Craft Surface Coating VOC Content Limits**

<u>Coating category</u>	<u>kg VOC/l. coating</u>	<u>lbs VOC/gal.coating</u>
Extreme High Gloss Topcoat	0.49	4.1
High Gloss Topcoat	0.42	3.5
Pretreatment Wash Primers	0.78	6.5



<u>Coating category</u>	<u>kg VOC/l. coating</u>	<u>lbs VOC/gal.coating</u>
<u>Finish Primer/Surfacer</u>	<u>0.42</u>	
<u>High Build Primer Surfacer</u>	<u>0.34</u>	<u>2.8</u>
<u>Aluminum Substrate Anti-foulant Coating</u>	<u>0.56</u>	<u>4.7</u>
<u>Other Substrate Anti-foulant Coating</u>	<u>0.33</u>	<u>2.8</u>
<u>All other Pleasure craft surface coatings for metal or plastic</u>	<u>0.42</u>	
<u>Antifouling Sealer/Tie Coat (new category)</u>	<u>0.42</u>	<u>3.5</u>

303.2 FIBERGLASS BOAT MANUFACTURING OPERATIONS

a. Material Requirements

(1) Closed Molding Process:

(a) An owner or operator who uses a closed molding process, as defined in Section 200 of this rule, shall comply with the applicable requirements of Sections 303.2, Section 304, Section 305 and Section 500 of this rule.

(b) An owner or operator shall not operate a closed molding system, unless the weight loss of polyester resin materials during polymerization is less than four (4.0) percent.

(2) Open Molding Process:

An owner or operator using an open molding system, as defined in Section 200.70 of this rule, shall limit all formulations of the monomer content of materials used to the percentages specified in Table 336-6 below, by weight, as applied and non-monomer VOC content shall be limited to 5 percent.

**TABLE 336-6
 Compliant Materials Monomer VOC Content for Open Molding Resin and Gel Coat**

<u>For this Material</u>	<u>This application method</u>	<u>This weighted average monomer VOC content (weight %) limit is required:</u>
<u>Production Resin</u>	<u>Atomized (Spray)</u>	<u>28</u>
<u>Production Resin</u>	<u>Non-atomized</u>	<u>35</u>
<u>Pigmented gel coat</u>	<u>Any Method</u>	<u>33</u>
<u>Clear Gel Coat</u>	<u>Any Method</u>	<u>48</u>
<u>Tooling Resin</u>	<u>Atomized</u>	<u>30</u>
<u>Tooling Resin</u>	<u>Non-atomized</u>	<u>39</u>
<u>Tooling Gel Coat</u>	<u>Any Method</u>	<u>40</u>

b. Process or Control Requirements: An owner or operator shall comply with one of the following process or control requirements.

(1) Closed Molding: An owner or operator shall not operate a closed molding system, unless the weight loss of polyester resin materials during polymerization is less than four (4.0) percent.

(2) Control Equipment: An owner or operator may elect to control VOC emissions by to installing and operating an emissions control system which has an overall capture and control efficiency of at least 90 percent or more on a mass basis (by weight), as approved by the Control Officer. Control efficiency shall be continuously monitored, the results of which shall be averaged over a rolling 24 hour period and shall comply with Section 305 of this rule.

304 INDUSTRIAL ADHESIVES



304.1 APPLICATION OF ADHESIVES: A person shall comply with one of the following for all applications of adhesives:

- a. Meet the limits in Section 304, Table 336-7; or
- b. Operate an ECS in accordance with Section 305 when applying a coating that exceeds the VOC limits in this rule; or
- c. Qualify for an exemption under Sections 103, 104 or 105.

TABLE 336-7: INDUSTRIAL ADHESIVES

INDUSTRIAL ADHESIVE EMISSION LIMITS		
	LIMITS AS APPLIED: VOC content minus exempt compounds (see subsection 240.1) *	
GENERAL ADHESIVE APPLICATION PROCESSES	lbs/gal	Column II g/liter
Reinforced Plastic Composite	1.7	200
Flexible Vinyl	2.1	250
Metal	0.3	30
Porous Metal (except wood)	1.0	120
Rubber	2.1	250
Wood	0.3	30
Other Substrates	2.1	250
SPECIALTY ADHESIVE APPLICATION PROCESSES		
Ceramic Tile Installation	1.1	130
Contact Adhesive	2.1	250
Cove Base Installation	1.3	150
Floor Covering Installation (Indoor)	1.3	150
Floor Covering Installation (Outdoor)	2.1	250
Floor Covering Installation (Perimeter Bonded Sheet Vinyl)	5.5	660
Metal to Urethane/Rubber Molding or Casting	7.1	850
Multipurpose Construction	1.7	200
Plastic Solvent Welding (ABS)	3.3	400
Plastic Solvent Welding (Except ABS)	4.2	500
Sheet Rubber Lining Installation	7.1	850
Single-Ply Roof Membrane Installation/Repair (Except EPDM)	2.1	250
Structural Glazing	0.8	100
Thin Metal Laminating	6.5	780
Waterproof Resorcinol Glue	1.4	170
ADHESIVE PRIMER APPLICATION PROCESSES		
Plastic Solvent Welding Adhesive Primer	5.4	650
Single-Ply Roof Membrane Adhesive Primer	2.1	250
Other Adhesive Primer	2.1	250

* If an adhesive is used to bond dissimilar substances together, then the applicable substrate category with the highest VOC emission limit is recommended as the limit for such application.

305 EMISSION CONTROL SYSTEM: The VOC limits in Sections 301, 302, 303, and 304 of this rule do not apply when emissions of VOC from operations are controlled by an ECS that meet the following terms listed below. Coating that exceeds the applicable VOC-limits in these sections shall be clearly identified such that facility-operators are informed an ECS must be used.



- 305.1** The control device shall reduce VOC emissions from an emission collection system by at least 95 percent by weight or the output of the air pollution control device is no more than 5 parts per million (ppm) VOC by volume calculated as carbon with no dilution; or
- 305.2** The owner and/or operator demonstrates that the emission collection system collects at least 90 percent by weight of the VOC emissions generated by the sources of the VOC emissions.
- 305.3** Any owner and/or operator electing to use an emissions control system as a means of complying with this rule shall comply with Section 305 of this rule.
- e.305.4** **Control Efficiency Of The Emissions Processing Subsystem: (Surface Coatings)**
- (1) The emissions processing subsystem of the ECS shall reduce the mass of VOC entering it by at least 90 percent; or
- (2)a.** **Alternative for Very Dilute Input:** For VOC input-concentrations of less than 100 ppm (as carbon) at the inlet of the ECS emissions processing subsystem, the VOC processing subsystem also satisfies the processor efficiency requirements of this rule ~~if~~ and:
- (a)b.** The VOC output is consistently less than 20 mg VOC/ m³ (as carbon) adjusted to standard conditions; and
- (b)c.** The ECS consistently shows an overall control efficiency of at least ~~85%~~ 90% when tested pursuant to EPA Methods listed in Section _____ subsection ~~503.3~~ of the rule. at VOC input-concentrations exceeding 100 ppm (as carbon).
- d.** **Providing and Maintaining ECS Monitoring Devices:** Any owner and/or operator processing VOC emissions pursuant to this rule must provide, properly install and maintain in calibration, in good working order and in operation, devices described in the facility's O&M Plan that indicate temperatures, pressures, rates of flow, or other operating conditions necessary to determine if air pollution control equipment is functioning properly and is properly maintained. Records must be kept according to Section 500 of this rule which demonstrate that the ECS meets the overall control standards required by Section 305 of this rule.
- 305.5** **Operation and Maintenance (O&M) Plan Required for ECS:** An owner and/or operator of a facility that is required to have an O&M Plan according to Section 305.5 of this rule shall comply with the following:
- a.** **General Requirements:** Provide and maintain an O&M Plan(s) for any ECS, any other emission processing equipment, and any ECS monitoring devices that are used according to this Rule 336 or according to an Air Quality Permit. The O& M plan must be readily available on-site at all times to the Control Officer.
- b.** **Compliance with Plan:** The owner or operator shall comply with all the identified actions and schedules provided in each O&M Plan.
- c.** **Approval by Control Officer:** Submit to the Control Officer for approval the O&M Plans of each ECS and each ECS monitoring device that is used according to this Rule 336.
- d.** **Initial Plans:** Fully comply with all O&M Plans that the owner or operator has submitted for approval, but which have not yet been approved, unless notified otherwise by the Control Officer in writing. Once the initial plan has been approved in writing by the Control Officer, an owner or operator must comply with this approved plan.
- e.** **Revisions to Plan by Owner or Operator:** Comply with the revisions to the initial plan if revisions to the initial plan have been approved by the Control Officer in writing. If revisions to the plan have not yet been approved by the Control Officer in writing, then an owner or operator must comply with the most recent O&M plan on file at Maricopa County Air Quality Department.
- f.** **Modifications to Plan by Control Officer:** Comply with the modified plan after submission to the Control Officer and before the Control Officer's approval of the O & M plans.



306 APPLICATION METHODS

- 306.1** An owner and/or operator shall use one of the following methods for all Surface Coatings, Gel Coat material (polyester resin surface coating) applications to an open molding surface, and adhesives or adhesive primers subject to this rule, containing more than 2 pounds of VOC per gallon (240 g/L) minus exempt compounds:
- a.** A low pressure spray gun; or
 - b.** An electrostatic system; or
 - c.** A system that atomizes principally by hydraulic pressure, including “airless” and “air assisted airless”; or
 - d.** Non-atomizing or non-spraying application methods, such as but not limited to dipping, rolling, or brushing; or
 - e.** An Alternative Application Method: Any method which achieves either an HVLP equivalent or a transfer efficiency of greater than or equal to 65%, as demonstrated:
 - (1)** In accordance with the provisions of Section _____ of this rule; or
 - (2)** As stamped on the gun by the manufacturer; or
 - (3)** From testing documentation of the HVLP spray-gun status provided by the manufacturer; or
 - f.** A high-volume low pressure (HVLP) spray-gun that meets the definition of HVLP in this rule and that meets the spray-gun tip pressure measurement test described in Section 200.49 of this rule;
- 306.2** An owner and/or operator shall use the following methods for these specific Polyester Resin Applications (excluding gel coats) subject to this rule:
- a.** **Tub/Shower Polyester Resin Materials:** An owner or operator shall not apply to an open molding system any tub/shower polyester resin material unless all the applied resin material is vapor suppressed.
 - b.** **Resin Material Application (Excluding Gel Coats):** An owner or operator shall not apply any resin materials to an open mold surface unless one of the following non-atomizing application techniques are used and operated according to the operating procedure specified by the equipment manufacturer:
 - (1)** Pressure-fed resin rollers (Section 200.97); or
 - (2)** Resin Impregnators (Section 200.95); or
 - (3)** Flow Coaters (Section 200.42); or
 - (4)** Fluid impingement technology (Section 200.43); or
 - (5)** Hand Lay-up applications (Section 200.47); or
 - (6)** Other non-atomizing application techniques which are approved in writing by the Control Officer and U.S. EPA, as having similar emission reduction efficiencies.
 - c.** **Pultrusion Operations:** An owner or operator shall not perform pultrusion operations, unless wet-out tubs baths are covered except for 18 inches from the exit of the bath to the die. The weight loss of polyester resin materials during polymerization shall be less than three (3) percent in a pultrusion operation.
 - d.** **Alternative Compliance Option:** An owner or operator may use alternative application processes and materials to those listed in Section 303 of this rule provided they result in equivalent VOC emissions and are approved in writing by the Control Officer and U.S. EPA.



306.3 Pleasure-craft: Extreme High Gloss Coatings: Extreme High Gloss Coatings shall not be applied with the use of the application methods listed in Section 306.1 although the remaining provisions of this rule apply.

307 **WORK PRACTICES: STORAGE, HANDLING, CLEANING AND DISPOSAL OF VOC-CONTAINING MATERIAL:** An owner or operator shall control emissions from VOC-containing materials used during storage, handling, cleaning, and disposal as well as for surface preparation before coating with the following practices:

307.1 For the purposes of this rule, the following definitions apply:

- a.** “in use” or “handled”: actively engaging the materials with activities such as mixing, depositing, brushing, rolling, padding, wiping or removing or transferring material into or out of the container. Immediately after the operation is completed, the container shall be closed.
- b.** “Containers” include but are not limited to drums, buckets, cans, pails, and trays.

307.2 **STORAGE AND HANDLING WORK PRACTICES:**

a. **Fiberglass Resin, Gel Coat and Putty Mixing Operations:**

Mixing containers with a capacity equal to or greater than 55 gallons (208 liters), including those used for on-site mixing of putties and poly-putties, shall have a cover with no visible gaps in place at all times. This shall not apply when the material is being manually added to or removed from a container, or when mixing or pumping equipment is being placed in or removed from a container.

b. **Labeling:** All containers that are 1 gallon or larger used for collection of VOC-containing material shall be clearly identified with their contents.

c. **Storage, Mixing, and Use of VOC Containing Materials:** An owner or operator shall store all VOC-containing material and VOC-containing cleaning materials in closed or covered leak-free containers. The containers shall be closed at all times except when the material is being handled such as when mixing, depositing, removing or transferring material into or out of the container.

d. **Spills:** An owner or operator shall implement procedures to minimize spills of any VOC-containing material immediately during handling and transfer to and from containers, enclosed systems, waste receptacles and other equipment including small containers.

307.3 **CLEANUP OF APPLICATION EQUIPMENT:** Work practices to control VOC emissions from cleaning materials used during metal product or plastic part refinish coating operations include both materials used to clean surfaces before coating (surface preparation) and to clean application equipment between coating jobs.

a. **Conveyance of VOC-Containing Materials and VOC-Containing Cleaning Materials:** An owner or operator shall ensure that all VOC-containing materials and VOC-containing cleaning materials shall be conveyed from one location to another in labeled and closed containers and pipes.

b. **Solvent Cleaning- Polyester Resin or Fiberglass Application Equipment:** An owner or operator shall ensure any solvent used to clean polyester resin or fiberglass application equipment, parts, products, tools, machinery, equipment, and general working areas shall contain no more than 5 percent VOC, by weight, or have a composite vapor pressure of no more than 0.50 mm Hg at 68 °F.

c. **Solvent Cleaning-Surface Coatings, Pleasure-Craft Application Equipment:** Any person subject to this rule using VOC-solvent to clean coating application equipment shall use only solvent which, as used, has a VOC-vapor pressure below 35 mm Hg at 20° C (68° F), except for sprayless equipment exempted pursuant to Section 104 of this rule.



d. Spray-Gun Cleaning Requirements:

- (1) An owner and/or operator subject to this rule shall clean spray-guns without spraying or atomizing a solvent cleaner with the gun.**
- (2) Spray-Gun Cleaning Machine:** An owner and/or operator subject to this rule shall use a spray-gun cleaning machine to clean spray-guns if the vehicle refinishing operation is required to have an Air Pollution Control Permit as per Rule 200 of these Rules unless they comply with all the conditions in Section 307.3(c) (iii) of these rules.
 - (a) Spray-Gun Cleaning Machine-General Requirements:** The spray-gun cleaning machine shall meet all of the following requirements:
 - (i) Be designed to clean spray-guns.**
 - (ii) Have at least one pump which drives solvent cleaner through and over the spray-gun.**
 - (iii) Have a basin which permits containment of the solvent cleaner.**
 - (iv) Be kept in proper repair and free from liquid leaks.**
 - (v) Shall be fitted with a cover.**
 - (vi) Be located on-site where the spray application occurs.**
 - (vii) Shall be a commercially-sold gun cleaning machine which shall be operated and maintained as stipulated in the Air Pollution Permit's Operation and Maintenance (O&M) Plan, or in the absence of its mention in the O&M Plan, according to manufacturer's or distributor's instructions.**
 - (b) Manual Spray-Gun Cleaning Requirements:** Manual cleaning of spray-guns shall comply with the following requirements:
 - (i) Disassembled spray-guns must be cleaned by hand; or**
 - (ii) Disassembled spray-guns must be soaked in a vat that is closed, except when the application equipment is being handled in the container, or transferred into or out of the container; or**
 - (iii) Solvent cleaners shall be less than 10 percent VOC (excluding water and non-precursor organic compounds) or shall contain less than 8.0 percent VOC by weight (including water and non-precursor organic compounds) and calculated pursuant to Section 503.5 of this rule.**
 - (iv) Solvent cleaner has a VOC-vapor pressure below 35 mm Hg at 20°C (68°F).**

307.4 DISPOSAL

Waste Materials: An owner or operator shall store all VOC-containing coatings, thinners, and coating-related waste materials intended for disposal, but not limited to, rags, waste coatings, waste brushes, waste rollers, waste applicators, waste solvents, and their residues, in closed or covered, leak-free containers which are legibly labeled with their contents and which remain covered at all times when not in use.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE:

401.1 ECS Schedule: By August 1, 1999: (6 months after rule adoption)

- a.** All new recordkeeping provisions shall be in effect, including subsections 501.1e and 501.2a. Any owner and/or operator intending to install an Emission Control System (ECS) in a



facility shall comply with requirements of ~~subsection 501.4~~ Section 305 of this rule and shall announce the intention to use an ECS to the Control Officer in writing within 30 days if:

- ~~(1)a.~~ The ECS is used as an alternative to meeting the spray-gun provisions of Section 306; or
- ~~(2)b.~~ The ECS is used as an alternative to meeting the gun cleaning machine provisions of Section 307.3 of this rule.
- b. The intention to use an Emission Control System (ECS) shall be announced to the Control Officer in writing if:
 - ~~(1)~~ The ECS is used as an alternative to meeting the spray gun provisions of Section 302; or
 - ~~(2)~~ The ECS is used as an alternative to meeting the gun cleaning machine provisions of Section 303.

401.2 By November 1, 1999, the following shall be in continuing use:

- ~~a.~~ Spray guns required pursuant to Section 302;
- ~~b.~~ Cleaning solvent(s) having the required vapor pressure pursuant to Section 303, and the data sheet(s) confirming the vapor pressure.

~~401.3~~**401.2** By ~~May 1, 2000~~ (6 months after the rule adoption), the ECS announced pursuant to ~~subsection 401.1b~~ Section 401.1 of this rule shall be in continuing use.

401.3 O&M Plan:

- ~~402.1a.~~ The owner and/or operator of an existing facility shall update or submit an O&M Plans by (3 months after DATE OF RULE ADOPTION) or within three (3) months of becoming subject to the rule, to the Control Officer for approval which describes the method(s) used to achieve full compliance with the rule. The compliance plan shall specify dates for completing increments of progress, such as the contractual arrival date of new control equipment. The Control Officer may require an owner and/or operator submitting the compliance plan to also submit subsequent reports on progress in achieving compliance; and.
- ~~402.2b.~~ The Control Officer shall take final action on an O&M Plan revision/update to address the newly amended provisions of this rule within 30 calendar days of the filing of the complete O&M Plan revision/update. The Control Officer shall notify the applicant in writing of his approval or denial; and
- c. **Compliance Date:** Attain full compliance with all of the standards in this rule by (12 months after DATE OF RULE ADOPTION) or within twelve (12) months of becoming subject to the rule.

SECTION 500

501 RECORDKEEPING AND REPORTING: Any person ~~An owner and/or operator~~ subject to this rule shall comply with the following requirements of subsections 501.1 and 501.2 that apply to materials regulated by this Rule 336. Records shall be retained for ~~five~~ ~~5~~ (5) years and shall be made available to the Control Officer upon request. ~~Records can consist of but are not limited to purchase orders, invoices, receipts, usage records, MSDS, and hazardous wastes manifests.~~ Records may be kept in either electronic or paper format.

501.1 Current Lists: Operational information required by this rule shall be kept in a complete and consistent manner on-site and be made available without delay to the Control Officer upon request.

501.2 Records of the following process and operational information, as applicable, are required. Express VOC content in 1 of 3 forms: pounds VOC per gallon, grams VOC per liter, or the percent VOC by weight along with the specific gravity or density, (2 numbers are required).



- a. **General Data:** Daily records shall be kept for all days that a facility is actively operating. Records shall include all of the following:
- (1) Hours of operation;
 - (2) Type of operation;
 - (3) Mixing Ratio: The mix ratio of the VOC-containing materials.
- b. **Surface Coatings, Fiberglass and Adhesives Used:**
- a. Maintain a current list of surface coatings, adhesives, reducers, thinners, gun-cleaning materials, additives, fiberglass coatings and any other VOC-containing materials regulated by this rule; ~~give~~ List the VOC content of material for each as received (before thinning). A complete, neat assemblage of this data meets the requirements for a list. Express VOC content in 1 of 3 forms: pounds VOC per gallon, grams VOC per liter, or the percent VOC by weight along with the specific gravity or density, (2 numbers are required). The VOC content of each coating as received, minus exempt compounds. (This figure is sometimes called the “EPA Method 24” VOC content on manufacturer’s data sheets). If the coating is a multi-part coating, list the VOC content which the manufacturer states the coating will have once all the necessary parts are mixed together in the proportions specified by the manufacturer.
- b.c. **Less Stringent Recordkeeping for Consistently Low Users:** An owner and/or operator of a facility that always uses less than 2 gallons per day total of thinner and coating (listed in Table ~~4336-1~~ through 336-3), meets the listing and recording requirements of ~~subsections 501.1a,~~ Sections 501.2 (a) (b) if:
- (1) All purchase receipts/invoices of VOC-containing material that ~~is~~ are regulated by this rule for the most recent 12 months are kept together; and
 - (2) Current data sheets show the VOC content of material for every VOC containing substance currently used that is regulated by this rule.
- e.d. **Facilities That Are Not Small Surface-Coating Sources:** Facilities that are not small surface-coating sources shall do the following:
- (1) **Coatings:** For all coatings (except those recorded under the ~~subsection 305.4e~~ low usage allowance provisions (Section 501.2 (c) of this rule), make the following listings for coatings, manufacturing materials, and adhesives that have VOC limits in Table ~~4 336-1~~ through 336-7:
 - (a) **VOC Before Reducing:** The VOC content of each coating as received, minus exempt compounds. (This figure is sometimes called the “EPA Method 24” VOC content on manufacturer’s data sheets). If the coating is a multi-part coating, list the VOC content which the manufacturer states the coating will have once you have mixed all the necessary parts together in the proportions specified by the manufacturer.
 - (b) **List Maximum VOC Content Of Coating As Applied:** For each coating that you thin/reduce or add any additive to, record in a permanent log either of the following:
 - (i) The maximum number of fluid ounces thinner/reducer that you ever add to a gallon of unreduced coating (or maximum g/liter), and the maximum fluid ounces of every other additive you mix into a gallon of the coating; or
 - (ii) The VOC content of the coating, after adding the maximum amount of thinner/reducer and other additives that you would ever add, as determined by the formula in ~~subsection 255.4~~ Section 500 of this rule.
- e. **Polyester Resin Operations:**



- (1) **Applications:** The type of nonatomizing application, or other in the case of gel coat, application techniques(s) used, manufacturer’s names, and the records of the fluid tip, pressure calibration as specified by the manufacturer; and
- (2) **Materials and VOC Content:** The manufacturer’s name, the type and amount of each of the polyester resin basic raw materials used, delivered and the weight (in percent) of monomer for all polyester resin materials and filler(s). If VOC-containing materials are added to the polyester resin, the amount of VOC-containing materials, in grams, and the VOC content in grams per liter, of VOC-containing materials; and
- (3) **Tub/Shower Resins:** Certification of analysis from the resin manufacture(s) to verify that all the applied tub/shower resin materials are vapor suppressed; and
- (4) **Pultrusion systems:** For pultrusion systems, the weight loss (in percent) of polyester resins materials for each application; and

501.3 Applicator Clean Solvent: Have a hardcopy of the VOC vapor pressure (VP) at 20°C (68°F) of solvent(s) used to clean spray guns, hoses, reservoirs, and any other coating application equipment. Any one of the following ways of providing the VP data is sufficient:

- (a.) A current manufacturer’s technical data sheet;
- (b.) A current manufacturer’s safety data sheet (MSDS);
- (c.) Actual test results; or
- (d.) A letter signed by an official or lab manager of the supplying facility.

501.2501.4 Frequency Of Updating Usage Records: Update your records, showing the type and amount used of each VOC-containing coating, manufacturing materials, or adhesive which is regulated by name or type in ~~Table 1~~ the Tables 336-1 through 336 -7 of these rules, and update each VOC-containing material, ~~related to surface coating~~, that is not addressed by ~~Table 1~~ in the Tables found in Rule 336 of these rules. This includes, but is not limited to, thinners, surfacers, and diluents. Maintain records according to the following schedule:

- a. **Small Surface-Coating Sources:** Small surface-coating sources shall update each month’s records of coating use by the end of the following month.
- b. **All Other Sources:** For a source that does not meet the definition of small surface-coating source:
 - (1) **Monthly:** Monthly update records of each coating or manufacturing material or adhesive used that complies with the VOC limits in ~~Table 1~~ this Rule 336. Complete a month’s update by the end of the following month.
 - (2) **Daily:** ~~Daily update the usage of each coating that exceeds its limits in Table 1, including coating exempted by subsection 305.4c.~~

501.3501.5 Grouping By VOC Content: For purposes of recording usage, coatings, manufacturing materials, and adhesives that are in the same category in ~~Table 1~~, and have similar VOC content, may be recorded under a name that includes the category name. The highest VOC content among the members of that grouping shall be assigned to that grouping, rounded to the nearest 10th of a pound. To identify what products belong within each group, after each group name and the group’s VOC content of material must appear the name of each product in the group and its VOC content of material.

For example: For flexible plastic parts, you use 20 gallons of primer that has 3.04 lb VOC/gal., 30 gallons of primer having 3.14 lb VOC/gal., and 40 gallons of primer having 2.89 lb VOC/gal. You may record usage as 90 gallons of flexible plastic primer containing 3.1 lb VOC/gal. If grams VOC per liter is used to record VOC content, round off to the nearest whole number of grams.

502 ECS RECORDING REQUIREMENTS:



- 502.1** On each day an ECS is used at a facility pursuant to this rule, an owner or operator of the facility shall:
- Record the amount and VOC content of coating, the amount of catalyst/hardener, and the amounts of solvent, reducer, and diluent used that were subject to ECS control pursuant to this Rule 336; and
 - Make a permanent record of the operating parameters of the key systems as required by the O&M Plan; and
 - Make a permanent record of the maintenance actions taken, within 24 hours of the action's completion, for each day or period in which the O&M Plan requires that maintenance be done.
- 502.2.** An explanation shall be entered for scheduled maintenance that is not performed during the period designated for it in the O&M Plan.

503 COMPLIANCE DETERMINATION AND TEST METHODS: ~~When more than one test method is permitted for a determination, an exceedance of the limits established in the rule determined by any of the applicable test methods constitutes a violation of this rule.~~

An exceedance of the limits established in this rule determined by any of the applicable test methods constitutes a violation of this rule. The EPA and the American Society for Testing and Materials (ASTM) test methods and other documents as they exist in the Code of Federal Regulations (CFR) as listed below, are adopted and incorporated by reference in Appendix G of the Maricopa County Air Pollution Control Regulations. These documents are available Maricopa County Air Quality Department, 1001 N. Central Ave., Phoenix, AZ 85004; or by calling (602) 506-0169 for information. ASTM methods are also available from the American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, or from its website at www.astm.org.

- 503.1 Compliance Determination:** The following means shall be used to determine compliance with this rule:
- Measurement of VOC content of materials subject to ~~Section Sections 301 or Section 302 through 304~~ of this rule shall be conducted and reported using one of the following means:
 - BAAQMD Method 31, 503.2f or 503.2g, [April 15, 1992]; or (SCAQMD Method 313-91, 503.2g [April 1997]).: VOC content of coatings, solvents, and other substances having less than 5% solids will be determined by the test method in subsection 503.2f or 503.2g (BAAQMD Method 31 [April 15, 1992]) or 503.2g (SCAQMD Method 313-91 [April 1997]).
 - EPA Method 24, 503.2c; (BAAQMD Method 31, 503.2f [April 15, 1992]); or 503.2g (SCAQMD Method 313-91 [April 1997]). The VOC content of coatings or other materials having 5% or more solids. will be determined by the test method in subsection 503.2c (EPA Method 24), 503.2f (BAAQMD Method 31 [April 15, 1992]) or 503.2g (SCAQMD Method 313-91 [April 1997]).
 - Plastisols, powder coatings, and radiation-cured coatings shall be cured according to the procedures actually used in the coating process being tested before final VOC-emission determinations are made.
 - In the case of multi-component, polymerizing coatings tested according to 503.1a, Method 24 shall be modified to eliminate the post-mixing dilution-step (that employs toluene or other solvent). Instead, the mixture shall be spread by appropriate technique to form a thin layer, occupying the entire bottom of the foil pan. Techniques included in the method referenced in 503.1b can be used as a guide for such spreading.



- b. EPA Method 18 referred to in subsection 503.2b, or EPA Method 25 and its submethod, referred to in subsection 503.2d. The VOC content of gaseous emissions entering and exiting an ECS. ~~shall be determined by either EPA Method 18 referred to in subsection 503.2b, or EPA Method 25 and its submethod, referred to in subsection 503.2d.~~
- c. EPA Method 204 (503.2e) and its submethods, or by using mass balance calculation methods in concert with the methods in 503.2a (EPA Methods 2, 2a, 2c, and 2d).
Capture efficiency of an ECS. ~~shall be determined either by the methods in 503.2e (EPA Method 204 and its submethods), or by using mass balance calculation methods in concert with the methods in 503.2a (EPA Methods 2, 2a, 2c, and 2d).~~
- d. Measurement of air pressure at the center of the spray gun tip and air horns of an air-atomizing spray gun (reference subsection 302.1 and Section 225) shall be performed using an attachable device in proper working order supplied by the gun's manufacturer for performing such a measurement.
- e. Temperature measurements shall be done with an instrument with an accuracy and precision of less than one-half degree Fahrenheit (0.25°C) for temperatures up to 480°F (250°C).
- f. SCAQMD Method 312-91, Determination of Percent Monomer in Polyester Resins and Gel Coat materials, revised April 1996. Alternatively, the manufacturer's formulation of data may be accepted as an alternative to this method. If there is a disagreement between manufacturer's formulation data and the results of a subsequent test, the facility should use the test method results unless the facility can make a demonstration that the manufacturer's formulation data is correct.

503.2 Test Methods Adopted By Reference: The EPA test methods as they exist in the Code of Federal Regulations (CFR) (July 1, 1998), as listed below, are adopted by reference. The other test methods listed here are also adopted by reference, each having paired with it a specific date that identifies the particular version/revision of the method that is adopted by reference. These adoptions by reference include no future editions or amendments. Copies of test methods referenced in this Section 503 are available at the Maricopa County Air Quality Department, 1001 N. Central Ave., Phoenix, AZ, 85004.

- a. EPA Methods 2 (“Determination of Stack Gas Velocity and Volumetric Flow Rate”), 2a (“Direct Measurement of Gas Volume Through Pipes and Small Ducts”), 2c (“Determination of Stack Gas Velocity and Volumetric Flow rate in Small Stacks or Ducts”), and 2d (“Measurement of Gas volumetric Flow Rates in Small Pipes and Ducts”). All 4 of the foregoing methods are in 40 CFR 60, Appendix A.
- b. EPA Method 18 (“Measurement of Gaseous Organic Compound Emissions by Gas Chromatography”) and its submethods (40 CFR 60, Appendix A).
- c. EPA Test Method 24 (“Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings”) (40 CFR 60, Appendix A).
- d. EPA Method 25 (“Determination of Total Gaseous Non-methane Organic Emissions as Carbon”) and its submethods (40 CFR 60, Appendix A).
- e. EPA Test Methods 204 (“Criteria for and Verification Of a Permanent or Temporary Total Enclosure”), 204a, 204b, 204c, 204d, 204e, and 204f (Appendix M, 40 CFR 51).
- f. California’s Bay Area Air Quality Management District (BAAQMD) Method 31 (April 15, 1992), “Determination of Volatile Organic Compounds in Paint Strippers, Solvent Cleaners, and Low Solids Coatings.”
- g. California’s South Coast Air Quality Management District (SCAQMD) Method 313-91 (April 1997).

503.3 Test Methods for ECS: For coatings/adhesives controlled pursuant to Section 305 of this rule.



- a. Measurements of VOC emissions from an ECS shall be conducted in accordance with EPA Methods 18 or its submethods, or by Method 25 or its submethods (40 CFR 60, Appendix A).
- b. Capture efficiency of an ECS shall be determined by mass balance in combination with ventilation/draft rate determinations done in accordance with subsection 503.3c or with US EPA Test Methods 204, 204a, 204b, 204c, 204d, 204e, and 204f (Appendix M, 40 CFR 51).
- c. Ventilation/draft rates shall be determined by EPA Methods 2, 2a, 2c, and 2d (40 CFR 60, Appendix A).

503.4 Test Methods for ECS: For Polyester Resin Operations controlled pursuant to section 305 of this rule.

- a. “Guidelines for Determining Capture Efficiency”, January 9, 1995, Candace Sorrell, Source Characterization Group A, Office of Air Quality Planning and Standards, US EPA; or
- b. EPA Reference Method 204 – Criteria for and Verification of a Permanent or Temporary Total Enclosure, 40 CFR 51, Appendix M; or applicable Subparts 204A, 204B, 204C, 204D, 204E, or 204F; or
- c. EPA Reference Method 18 – Measurement of Gaseous Organic Compound Emissions by Gas Chromatography, 40 CFR 60, Appendix A; or
- d. EPA Reference Method 25 – Determination of Total Gaseous Nonmethane Organic Emissions as Carbon, 40 CFR 60, Appendix A; or applicable Subparts 25A or 25B.

504 FORMULA FOR TOTAL VOC VAPOR PRESSURE: Equivalent to: **VOC COMPOSITE PARTIAL PRESSURE.** Reference ~~subsection 303.2~~ Section 2XX.

$$PP_c = \frac{\sum_{i=1}^n (W_i)(VP_i) / MW_i}{\frac{W_w}{18} + \sum_{j=1}^m \frac{W_{ej}}{MW_{ej}} + \sum_{i=1}^n \frac{W_i}{MW_i}}$$

W_i = Weight of the “i”th VOC compound in grams

W_w = Weight of water in grams

W_{ej} = Weight of the “j”th non-precursor compound in grams

MW_i = Molecular weight of the “i”th VOC compound in grams per gram mole, e.g., one gram-mole of isopropyl alcohol weighs 60 grams

MW_{ej} = Molecular weight of the “j”th non-precursor compound, e.g., 1 gram-mole of acetone weighs 58 grams

PP_c = VOC composite partial pressure at 20°C in mm mercury (Hg)

VP_i = Vapor pressure of the “i”th VOC compound at 20°C in mm Hg

18 = Weight of one gram-mole of water

505 VOC CONTENT: In this rule, VOC content is determined by one of the following two formulas: To determine compliance with the VOC limits in Section 301 of this rule or the 2.0 lb VOC/gal threshold in Section 302 of this rule, use the following formula in Section 240.1 of this rule. For other purposes, use the formula in Section 240.2 of this rule:



505.1 VOC CONTENT MINUS EXEMPT COMPOUNDS (is the same as VOC CONTENT MINUS EXEMPT EVAPORATING COMPONENTS) (also known as “THE EPA METHOD 24 VOC CONTENT” on manufacturer’s data sheets.)

$$\text{VOC Content Minus Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Using consistently either English or metric measures in the calculations, where:

- W_s = weight of all volatile material in pounds (or grams), including VOC, water, non-precursor organic compounds and dissolved vapors
- W_w = weight of water in pounds (or grams)
- W_{es} = weight of all non-precursor compounds in pounds (or grams)
- V_m = volume of total material in gallons (or liters)
- V_w = volume of water in gallons (or liters)
- V_{es} = volume of all non-precursor compounds in gallons (or liters)

505.2 VOC CONTENT OF MATERIAL (MATERIAL VOC-CONTENT)

$$\text{VOC Content of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Using consistently either English or metric measures in the calculations, where: W_s = weight of all volatile material in pounds (or grams) including VOC, water, non-precursor organic compounds and dissolved vapors

- W_w weight of water in pounds (or grams)
- W_{es} weight of all non-precursor compounds in pounds (or grams)
- V_m volume of total material in gallons (or liters)

Maricopa County VOC Rules

DRAFT RULE 336

Polyester Resin Operations, Boat Manufacturing, Miscellaneous Surface Coating, Industrial Adhesives and Primers Operations

Stakeholder Workshop 1

Kathleen Sommer

June 29, 2015



Maricopa County
Air Quality Department

Rev. 8/13/2015

Rule 336: Polyester Resin, Boat Manufacturing, Miscellaneous Surface Coating, Industrial Adhesives and Primers Operations

Update of Rule 336

Three Additional VOC Sources to Control

- 1. POLYESTER RESIN OPERATIONS**
- 2. BOAT MANUFACTURING AND REPAIR**
- 3. INDUSTRIAL ADHESIVES AND PRIMERS**

Rule 336: Surface Coating Operations

(Misc.) SURFACE COATING OPERATIONS

(Last revised September 20, 1999)



Rule 336: Polyester Resin Operations, Boat Manufacturing, Miscellaneous Surface Coating, Industrial Adhesives and Primers Operations

OUTLINE

Section 100 – General

101 **Purpose:**

102 **Applicability:**

102.1 Manufacturing and Repair Operations

102.2 Surface Coating

102.3 Industrial Adhesives and/or Adhesive Primers

102.4 NSPS & NESHAP

103 **Exemptions and Burden of Proof**

103.1 Total VOC Content (applies to all operations)

103.2 Polyester Resin Operation Exemptions

103.3 Pleasure Craft and Fiberglass Boat Manufacturing and Repair Exemptions

103.4 Surface Coating Exemptions

103.5 Industrial Adhesives Exemptions

104 **Total Categorical Exemptions**

SECTION 200 – DEFINITIONS

124 definitions to start – I will not review definitions in Today

I will review these in the July 29th workshop #2



Maricopa County

Air Quality Department

Rev. 8/13/2015

Polyester Resin, Industrial Adhesives and Primers, Boat Manufacturing, and Miscellaneous Surface Coating Operations

SECTION 300 – COMMON STANDARDS: §§301 – 303

- 301 Emission Control System (ECS)**
- 302 Application Methods**
- 303 Work Practices: Storage, Handling, Cleaning, and Disposal of VOC Containing Material**

SECTION 300 – SPECIFIC PROCESS STANDARDS: §§304 – 307

- 304 Polyester Resin Operations**
- 305 Pleasure Craft and Fiberglass Manufacturing And Repair**
- 306 Industrial Adhesives and Adhesive Primers**
- 307 Surface Coating Operations**

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

- 401 COMPLIANCE SCHEDULE:**
- 402 O & M Plan:**

SECTION 500 – MONITORING AND RECORDS

- 501 Record Keeping and Reporting**
- 502 ECS Recording Requirements**
- 503 Compliance Determination and Test Methods**
- 504 Formula for total VOC Vapor Pressure**
- 505 Formula for VOC Content**



Rule 336: Polyester Resin Operations, Boat Manufacturing, Miscellaneous Surface Coating, Industrial Adhesives and Primers Operations

Thank you for participating in the rulemaking process!

EROP

<http://www.maricopa.gov/aq/>

“Follow the Regulatory Process”

“Air Quality”

“Follow the Regulatory Process”

AQ-2015-005: Rule 336 Surface Coating Operations

Corky Martinkovic

Planning & Analysis Division Manager

602-506-6731

CorkyMartinkovic@mail.maricopa.gov

Kathleen Sommer

Planning & Analysis Division Rulewriter

602-506-6706

KathleenSommer@mail.maricopa.gov



Maricopa County

Air Quality Department

Rev. 8/13/2015



Enhanced Regulatory Outreach Program Maricopa County Air Quality Department

Notice of Stakeholder Workshops

Date: Thursday, September 3, 2015

Location: 1001 North Central Avenue, Floor 5 Classroom*

The Maricopa County Air Quality Department will conduct Stakeholder Workshops to discuss proposed rule revisions. The schedule and a description of each rule to be discussed are provided below. Also, the draft rules associated with these workshops are attached to this announcement.

9:00 am – 10:30 am **AQ-2015-002-Rule 322 (Power Plant Operations) and**
AQ-2015-003-Rule 323 (Fuel Burning Equipment from
Industrial/Commercial/Institutional (ICI) Sources)

This is the second workshop. Staff will discuss proposed rule revisions since the first workshop conducted on June 29, 2015. Regarding draft Rule 322, discussion will focus on:

- Applicability particularly regarding equipment installed prior to 1996
- Emissions limitations for nitrogen oxides (NO_x)
- Reasonably available control technology (RACT) requirements
- Compliance schedule and plan
- Operation and maintenance (O&M) plan record requirements Regarding draft Rule 323, discussion will focus on:
- Emissions limitations for NO_x
- Compliance schedule and determination

1:30 pm – 3:00 pm **AQ-2015-005-Rule 336 (Surface Coating Operations)**

This is the second workshop. Staff will discuss proposed rule revisions since the first workshop conducted on June 29, 2015. Discussion will focus on:

- Proposed Applicability section: Manufacturing and repair operations, industrial adhesives and/or adhesive primers, and surface coating operations
- Proposed Exemptions section: Exemptions for VOC content polyester resin operations, pleasure craft and fiberglass boat manufacturing and repair, industrial adhesives and/or adhesive primers, and surface coating operations
- General standards for emission control systems, application methods, and work practices
- Specific process standards for polyester resin operations, pleasure craft and fiberglass boat manufacturing and repair, industrial adhesives and/or adhesive primers, and surface coating operations
- Compliance schedule
- Recordkeeping requirements
- Relationship of this proposed Rule 336 with other County rules
- Definitions

Additional information about these draft rules is available on the Enhanced Regulatory Outreach Program (EROP) website (<http://www.maricopa.gov/regulations>).

To enhance the discussion and cost savings, as well as support the county's sustainability initiative, information will be electronically displayed during the workshops. If you prefer a hardcopy of the documentation, please print the information from this announcement.

*When you arrive at 1001 North Central Avenue, please check-in in Suite #125 then proceed to the Floor 5 classroom.



~~Revised 07/13/88~~
~~Revised 09/21/92~~
~~Revised 06/19/96~~
~~Revised 04/07/99~~
 Revised MM/DD/YY

Revised 07/13/88; Revised 09/21/92; Revised 06/19/96; Revised 04/07/99; Revised MM/DD/YY

**MARICOPA COUNTY
 AIR POLLUTION CONTROL REGULATIONS
 RULE 336**

**POLYESTER RESIN AND BOAT MANUFACTURING OPERATIONS, MISCELLANEOUS SURFACE
 COATING OPERATIONS, INDUSTRIAL ADHESIVES AND PRIMERS,**

SECTION 100 – GENERAL

- 101 PURPOSE:** To limit the emission of volatile organic compounds (VOCs) from polyester resin and boat manufacturing operations, surface coating operations, and the application of industrial adhesives and primers.
- 102 APPLICABILITY:** This rule applies to the following types of VOC sources:
- 102.1 Manufacturing and Repair Operations:**
- a. Polyester Resin Operations:** This rule is applicable to the manufacturing, rework, repair, and touch-up of composite products and parts made of resin and gel coats as well as the cleanup, storage, and disposal of solvents used in these operations.
- b. Pleasure Craft and Fiberglass Boat Manufacturing and Repair Operations:** This rule is applicable to all manufacturing, refinishing, repairing, and modification of pleasure craft or fiberglass boat components and structures as well as the cleanup, storage, and disposal of solvents used in these operations.
- 102.2 Surface Coating Operations:** This rule is applicable to surface coating operations listed in Table 1 of this rule that are not more specifically regulated by another rule within Maricopa County Rules 300 to 359; of Regulation III. Examples of The coating operations not regulated by this rule appear in subsection 305.1. are listed in Section 104 of this rule.
- ~~102.1~~ Surface-coating activities regulated under this rule include, but are not limited to, the application of coating, coating preparation/mixing at the facility, and the cleanup of coating application equipment.
- ~~102.2~~ Subsections 305.2 through 305.7 set forth partial or conditional exemptions for certain materials or uses employed by a surface coating operation subject to this rule.
- ~~102.3~~ This rule is not applicable to coatings having a VOC content, minus exempt compounds, of less than 0.15 lb VOC/gal (18g/L) nor to solvents having a VOC content of material less than 0.15 lb VOC/gal.
- 102.3 Industrial Adhesives and/or Adhesive Primers:** This rule is applicable to adhesive and/or adhesive primer usage which includes, but is not limited to, the application of adhesive, adhesive preparation/mixing at the facility, and cleanup of the adhesive application equipment.
- 102.4 NSPS & NESHAP:** In addition to this rule, facilities may be subject to New Source Performance Standards (NSPS) in Rule 360 and/or to National Emission Standards for Hazardous Air Pollutants (NESHAP) in Rule 370 of these Rules and Regulations.
- 103 EXEMPTIONS AND BURDEN OF PROOF:** The following are exempt from the VOC limits of this rule (Sections 301 through 303) however an owner and/or operator shall comply with the application methods and



work practices of Sections 305 and 306 respectively as well as the recordkeeping requirements of Section 500 of this rule.

103.1 Exemptions: Polyester Resin and Boat Manufacturing Operations:

a. Polyester Resin Operations:

Exempt-Low VOC Usage: The owner and/or operator of a polyester resin operation can claim a exemption to the VOC limits of this rule if emissions are not more than 1.0 ton VOC /per year, provided the operator keeps the records required to demonstrate exemption status as defined in Section 500 of this rule.

b. Pleasure Craft and Fiberglass Boat Manufacturing and Repair: The following activities are exempt when the requirements described are met:

(1) Life-Saving Craft: Resin productions applied to military vessels, U.S. Coast Guard lifeboats, rescue boats, and other life-saving appliances approved under 46 CFR subchapter Q, or the construction of small passenger vessels regulated by 46 CFR subchapter T are exempt, if applied using non-atomizing application equipment serving as emission control.

(2) Part or Mold Repair and Touch Up: Production and tooling resins, pigmented, clear, and tooling gel coats used for part, mold repair and touch-up are exempt if not exceeding 1 percent by weight of all resin and gel coats used at a facility on a 12-month rolling-average basis.

(3) Pure 100-Percent Vinylester Resin Used for Skin Coats:

Pure, 100-percent resins (blends of vinylester and polyester) used for skin coats are exempt if applied with non-atomizing resin application equipment serving as the emission control and the amount of resin used shall not exceed 5 percent by weight of all resin used at a facility on a 12-month rolling average basis.

103.2 Surface Coating Exemptions: The following surface coating operations are exempt:

a. Exempt VOC Coatings: Coatings having a VOC content, minus exempt compounds, of less than 0.15 lb VOC/gal (18 g/L).

b. ECS Use In Lieu of Equipment or Work Practice: In lieu of meeting an equipment or work practice standard, an owner and/or operator can chose to use an ECS that has a capture efficiency of at least 90% and meets ECS requirements defined in Section 304 of this rule.

c. VOC Coating for Metal Parts: The following coatings are exempt from the provisions of Section 302 of this rule:

Safety-indicating coatings;

Magnetic data storage disk coatings;

Solid-film lubricants;

Electric-insulating and thermal-conducting coatings.

d. VOC Coating for Metal and Plastic Parts: The following coatings are exempt from the provisions of Section 302 of this rule:

Stencil coatings applied on clear or transparent substrates;

Clear or translucent coatings;

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

e. VOC Coating for Plastic or Glass: The following coatings are exempt from the provisions of Section 302 of this rule:



- a. Testing in any research and development, quality assurance, or analytical laboratory; or
- b. Assembly, repair, or manufacture of aerospace or undersea-based weapon systems; or
- c. Medical equipment manufacturing operations; or
- d. Cyanoacrylate adhesive application processes; or
- e. Aerosol adhesive and aerosol adhesive primer application processes; or
- f. Processes supplied to the manufacturer in containers with a net volume of 16 ounces or less, or a net weight of one pound or less; or
- g. Processes using polyester bonding putties to assemble fiberglass parts at fiberglass boat manufacturing facilities and at other reinforced plastic composite manufacturing facilities.

103.4 Bonding Impact Resistant Rubber Lining to Metal: This rule does not apply to bonding sheets/strips of rubber to metal equipment to protect the metal but the sheets shall not have a VOC material content exceeding 850 grams of VOC per liter (7.1 lb/gal) This exception does not apply to any other situations where adhesives are used to bond rubber to metal.

104 TOTAL CATEGORICAL EXEMPTIONS: This rule does not apply to the following operations:

- 104.1 Adhesive Applications for Tire Repair.
- 104.2 Adhesive Applications for Flat Wood Paneling.
- 104.3 Adhesive Applications for Field operations including construction.
- 104.4 Aerospace coating operations (Rule 348).
- 104.5 Architectural coatings including buildings and erected structures (Rule 335).
- 104.6 Cleaning: VOC loss from cleaning or stripping a surface coating (Rule 331).
- 104.7 Printing and graphic arts coating (Rule 337).
- 104.8 Semiconductor manufacturing (Rule 338).
- 104.9 Coating or refinishing a highway vehicle or mobile equipment (Rule 345).
- 104.10 Coating interior or exterior auto parts.
- ~~104.8 Coating automotive and transportation equipment.~~
- ~~104.9 Coating motor vehicle accessories.~~
- 104.11 Coating wood furniture and fixtures (Rule 342).
- 104.12 Coating wood millwork (Rule 346).
- 104.13 Polystyrene Foam Operations (Rule 358).
- 104.14 Rubber Tire Manufacturing.
- 104.15 Marine Vessel exterior refinishing.

SECTION 200 – DEFINITIONS: For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100: (General Provisions and Definition) of these rules. In the event of any inconsistency between any of the Maricopa County air pollution control rules the definitions in this rule take precedence.

~~201~~**200.01** **ADHESIVE:** A material used chemical substance that is applied for the primary purpose of bonding two surfaces together other than by mechanical means.

200.02 **ADHESIVE PRIMER:** Any product intended by the manufacturer for application to a substrate, prior to the application of an adhesive, to provide a bonding surface.



- ~~200~~**200.03** **AEROSOL ADHESIVE OR ADHESIVE PRIMER:** 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.
- ~~202~~ AEROSOL CAN—An aerosol coating product which comes in a non-refillable hand held container from which a product is dispensed by means of pressurized propellant packaged within the container.
- ~~200~~**200.04** **AEROSOL CAN-SPRAY COATING:** A coating which is sold in a hand-held, pressurized, non-refillable container, of less than 22 fluid ounces (0.66 liter) capacity, and which is expelled from the container in a finely divided form when a valve on the container is depressed.
- ~~203~~**200.05** **AIR-DRIED COATING:** A coating which is dried by the use of air or forced warm air at temperatures up to and including 200°F (93.3°C).
- ~~200~~**200.06** **AIRLESS SPRAY:** A system that atomizes principally by hydraulic pressure, including “airless” and “air assisted airless”.
- ~~200~~**200.07** **ATOMIZED RESIN APPLICATION:** Technology that utilizes application equipment that breaks resin into droplets (or aerosol) as it exits application equipment to the surface of the part. Atomized resin application includes, but is not limited to, resin spray guns and resin chopper spray guns.
- ~~204~~**200.08** **BAKED COATING:** A coating that is dried or cured in an oven in which the oven temperature exceeds 200°F (93.3°C).
- ~~200~~**200.09** **BUSINESS MACHINE:** A device that uses electronic or mechanical methods to process information, perform calculations, print or copy information, or convert sound into electrical impulses for transmission, such as:
- (1) Products classified as typewriters under SIC Code 3572;
 - (2) Products classified as electronic computing devices under SIC Code 3573;
 - (3) Products classified as calculating and accounting machines under SIC Code 3574;
 - (4) Products classified as telephone and telegraph equipment under SIC Code 3661;
 - (5) Products classified as office machines, not elsewhere classified, under SIC Code 3579; and
 - (6) Photocopy machines, a subcategory of products classified as photographic equipment under SIC code 3861.
- ~~200~~**200.10** **CAMOUFLAGE COATING:** A coating used, principally by the military, to conceal equipment from detection.
- ~~205~~**200.11** **CAN COATING:** Any coating either used in the production of metal cans-applied to the surface(s) of formed cans or applied at a can making facility to the surface(s) of flat metal sheets or strips that are formed there into cans.
- ~~206~~**200.12** **CAN PRINTING INK:** A fluid or viscous formulation used in can printing that imparts design, pattern, and/or alphanumeric symbols to a can.
- ~~200~~**200.13** **CLEANUP:** The removal of uncured coating from any surface.
- ~~207~~**200.14** **CLEAR COAT:** Any coating which lacks color or opacity or is transparent.
- ~~200~~**200.15** **CLEAR GEL COAT:** Clear (translucent) gel coating used to allow underlying colors or patterns to be visible. Tooling gel coat used to build or repair molds is NOT a clear gel coat.
- ~~200~~**200.16** **CLOSED MOLDING OPERATIONS:** Any molding process in which pressure is used to distribute the resin through the reinforcing fabric placed between two mold surfaces to either saturate the fabric or fill the mold cavity. The pressure may be clamping pressure, fluid pressure, atmospheric pressure, or vacuum pressure used either alone or in combination. The mold surfaces may be rigid or flexible. (Closed molding in fiberglass boat manufacturing is used to make a large



- number of small parts, such as hatches and locker doors, or small numbers of high performance boat hulls.)
- 200.17** **COATING:** A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes.
- 200.18** **COATING APPLICATION EQUIPMENT:** Any spray gun, wand, rollers, brushes or any other means used to apply or cover a surface with a coating for either beauty, protection or other purposes
- 200.19** **COATING LINE:** A coating line is defined as a series of coating applicators, flash-off areas, and any associated curing/drying equipment between one or more unwind/feed stations and one or more rewind/cutting stations.
- ~~208~~**200.20** **COIL COATING:** Any coating applied to the surface(s) of flat metal sheets or strips that are formed into rolls or coils not used to make cans.
- 200.21** **COMPOSITE MATERIALS:** Individual components that, combined, make up the composite product. Composite materials include resins, gel coats, molding compounds, thinners, catalyzing agents, binders, fillers, reinforcement fibers, other reinforcement materials, and any other material added to enhance the properties of the composite product.
- 200.22** **COMPOSITE PRODUCTS:** For the purposes of this Rule, composite products are products that are fabricated from polyester resins and composite materials.
- 200.23** **CONTAINERS:** Containers include but are not limited to drums, buckets, cans, pails, and trays.
- 200.24** **CORROSION-RESISTANT RESIN:** Polyester resin material used to make products for corrosion resistant applications such as, but not limited to, tooling, fuel or chemical tanks, boat hulls, pools and outdoor spas.
- ~~209~~**200.25** **DAY:** A period of 24 consecutive hours beginning at midnight.
- 200.26** **DIP COAT (INCLUDING ELECTRO-DEPOSITION):** A coating application method accomplished by dipping an object into coating.
- 200.27** **DRUM:** A cylindrical metal shipping container larger than 12 gallons capacity but no larger than 110 gallons capacity.
- 200.28** **ELECTRIC DISSIPATING COATING:** A coating that rapidly dissipates a high-voltage electric charge.
- ~~210~~**200.29** **ELECTROSTATIC SPRAY/SYSTEM:** A method of applying atomized paint by electrically charging the coating and the object being coated with opposing charges. A higher proportion of the coating reaches and coats the object than would occur in the absence of a charge.
- ~~211~~**200.30** **EMISSION CONTROL SYSTEM (ECS):** A system, approved in writing by the Control Officer, designed and operated in accordance with good engineering practice to reduce emissions of volatile organic compounds. Such system consists of an emissions collection subsystem and an emissions processing subsystem.
- ~~212~~**200.31** **END SEALING COMPOUND:** A compound which is coated onto can ends and functions as a gasket when the end is attached to the can.
- 200.32** **ETCHING FILLER:** A coating that contains less than 23 percent solids by weight and at least ½ percent acid by weight, and is used instead of applying a pretreatment coating followed by a primer.
- ~~213~~**200.33** **EXEMPT EVAPORATING COMPONENTS (EXEMPT COMPOUNDS):** The non-VOC, evaporating portion of a coating formulation; this necessarily includes all non-precursor organic compounds as defined in Rule 100 of these Rules and Regulations, as well as water and other inorganic liquids and gases.
- ~~214~~**200.34** **EXTERIOR CAN BASECOAT:** Any coating applied to the exterior of a can to provide protection for the metal or to provide background for any lithographic or printing operation.



- 200.35** **EXTREME HIGH-GLOSS COATING:** A coating which when tested by the American Society for Testing Material Test Method D-523 adopted in 1980, shows reflectance of 75 or more on a 60° meter.
- ~~215~~**200.36** **EXTREME-PERFORMANCE COATING:** A coating used on a surface where the coated surface in its intended use is at temperatures consistently in excess of 250°F (121°C). Extreme performance coatings include but are not limited to, coatings applied to locomotives, railroads cars, farm machinery, and heavy duty trucks.
- ~~216~~**200.37** **FABRIC:** A textile material. Non-manufactured items from nature are not fabric except for natural threads, fibers, filaments, and similar that have been manufactured into textile fabric.
- ~~217~~**200.38** **FABRIC COATING:** Any decorative or protective coating or reinforcing material applied onto or impregnated into textile fabric.
- 200.39** **FIBERGLASS BOAT MOLDS:** Fiberglass boat manufacturing facilities construct the molds or “tools” that are used to build the separate parts of the fiberglass boat. The production of molds is done using specialized resins and gel coats referred to as tooling resin and gel coat. These differ from production resin and gel coat in that they are harder, more heat resistant, and more dimensionally stable than production materials.
- 200.40** **FIBERGLASS:** A process where the liquid resin is mixed with a catalyst before it is applied to the glass, which causes a cross-linking reaction between the resin molecules. The catalyzed resin hardens to form a rigid shape consisting of the plastic resin reinforced with glass fibers. fiberglass (also known as fiber reinforced plastic or FRP, aluminum, rotationally molded (rotomolded) polyethylene (PLASTIC)).
- 200.41** **FILAMENT APPLICATION:** A method of applying resin to an open mold that involves feeding reinforcement fibers through a resin bath and winding the resin-impregnated fibers on a rotating mandrel.
- 200.42** **FILLER:** A finely divided inert (non-VOC) material, which may be added to the resin to enhance its mechanical properties and extend its volume. Resin fillers include, but are not limited to, silica, carbon black, talc, mica and calcium carbonate.
- 200.43** **FLEXIBLE VINYL:** A non-rigid polyvinyl chloride plastic with at 5 percent by weight plasticizer content.
- 200.44** **FLOW COATING (Flow Coaters):** Flowcoating is a nonatomizing application technique of applying resins and gel coats to an open mold with a fluid nozzle in a fan pattern with no air supplied to the nozzle and the excess coating drains back into the collection system.
- 200.45** **FLUID IMPINGEMENT TECHNOLOGY:** A spray gun that produces an expanding non-misting curtain of liquid by the impingement of low-pressure uninterrupted liquid stream.
- ~~218~~**200.46** **FILM COATING:** Any coating applied in a web coating process on film substrate other than paper or fabric, including, but not limited to, typewriter ribbons, photographic film, magnetic tape, and metal foil gift wrap.
- 200.47** **FINISH PRIMER/SURFACER:** A coating applied with a wet thickness film of 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.
- 200.48** **FIRE RETARDANT RESIN:** Polyester resin material used to make products that are resistant to flame or are a low flame spread/low smoke product, as defined in 40 CFR 63.5935.
- 200.49** **FLEXIBLE COATING:** Any coating that is required to comply with engineering specifications for impact resistance, mandrel bend, or elongation as defined by the original equipment manufacturer.
- ~~219~~**200.50** **FLEXIBLE PLASTIC PART OR PRODUCT:** A plastic part or product designed to withstand significant deformation without damaging it for its intended use. Not included are flexible plastic parts that are found on a can, coil, metal furniture, or large appliance, or that are already a part of an



aerospace component, highway vehicle, mobile equipment, architectural building or structure, or a previously coated marine-vessel.

- 200.51 FLOW COATING (FLOW COATERS):** A coating application system, with no air supplied to the nozzle, where paint flows over the part and the excess coating drains back into the collection system.
- 200.52 FLUID IMPINGEMENT TECHNOLOGY:** A spray gun that produces an expanding non-misting curtain of liquid by the impingement of low-pressure uninterrupted liquid stream.
- 200.53 GEL COAT:** A thermosetting polyester resin surface coating, either pigmented or clear, that provides a cosmetic enhancement and improves resistance to degradation from exposure to the elements.
- 200.54 GLOSS REDUCER:** A coating that is applied to a plastic part solely to reduce the shine of the part and is applied at a thickness of less than or equal to 0.5 mils of coating solids.
- 200.55 HEAT-RESISTANT COATING:** A coating that must withstand a temperature of at least 400° during normal use.
- 200.56 HAND APPLICATION METHODS:** Application of coatings by non-mechanical, hand-held equipment including but not limited to paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges.
- 200.57 Hand Lay-Up:** Hand Lay-up is a hand application technique of composite materials using a bucket and a paint brush or a paint roller, or other hand held method of application.
- 200.58 HIGH-TEMPERATURE COATING:** A coating that is certified to withstand a temperature of 1000°F for 24 hours.
- 200.59 HIGH-STRENGTH MATERIALS:** These materials are polyester resins which have casting tensile strength 10,000 psi or more and which are used for manufacturing of high performance boats and skis.
- ~~220~~**200.60 HEAT SENSITIVE MATERIAL:** Materials which cannot consistently be exposed to temperatures greater than 203°F (95°C) without materially affecting desired function, performance, or other characteristics.
HIGH VOLUME-LOW PRESSURE SPRAY EQUIPMENT: Spray Equipment used to apply coatings which is designed to be operated and is operated between 0.1 and 10.0 pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns.
- ~~221~~ **HIGHWAY VEHICLE:** Any vehicle that is physically capable of being driven upon a highway including, but not limited to, cars, pickups, vans, trucks, truck tractors, motor homes, motoreycles, and utility vehicles.
- 200.61 HIGH-VOLUME, LOW-PRESSURE (HVLP) SPRAY:** This is a coating application system which is designed to be operated and which is operated between 0.1 and 10 pounds per square inch gauge (psig) air pressure, measured dynamically at the center of the air cap and the air horns.
- ~~222~~**200.62 INTERIOR BASECOAT:** Any coating applied to the interior of a can to provide a protective lining between the intended contents and the metal shell of the can.
- ~~223~~**200.63 INTERIOR BODY SPRAY:** Any coating sprayed onto the interior of a can to provide a protective film between the intended contents and the metal shell of the can.
- 200.64 IN USE or HANDLED:** In use or handled means actively engaging the materials with activities such as mixing, depositing, brushing, rolling, padding, wiping or removing or transferring material into or out of the container. Immediately after the operation is completed, the container shall be closed.
- 200.65 LAMINATE:** A product made by bonding together two or more layers of material.
- 200.66 LAMINATION RESINS:** Orthophthalate, isophthalate and dicyclopentadiene (DCPD) resins which are used in composite system made of layers of reinforcement fibers and resins, such as in boat fabrication.



- ~~224~~**200.67** **LARGE APPLIANCE:** A door, case, lid, panel, or interior support part of residential and commercial washers, dryers, ranges, refrigerators, freezers, water heaters, dishwashers, trash compactors, air conditioners, evaporative coolers, and other similar products.
- 225** **LOW PRESSURE SPRAY GUN:** An air atomized spray gun that, by design, functions best at tip pressures below 10 psig (516 mm Hg), measured according to Section 503.1d of this rule, and for which the manufacturer makes no claims to the public that the gun can be used effectively above 12 psig (619 mm Hg).
- 200.68** **LIFE-SAVING CRAFT:** Military vessels, U.S. Coast Guard lifeboats, rescue boats, and other life-saving appliances approved under 46 CFR subchapter Q, or the construction of small passenger vessels regulated by 46 CFR subchapter T.
- 200.69** **MARBLE OR CULTURED RESINS:** Orthophthalate and modified acrylic isophthalate resins used for the fabrication of cast products.
- 200.70** **MARINE VESSEL:** Any tugboat, tanker, freighter, passenger ship, barge, or other boat, ship or watercraft except those used primarily for recreation. This includes both salt water and fresh water vessels.
- ~~226~~**200.71** **METAL FURNITURE:** Any furniture made of metal or any metal part which will be assembled with other parts made of metal or other material(s) to form a furniture piece.
- 200.72** **METALLIC COATING:** A coating which contains more than 5 grams of metal particles per liter of coating as applied.
- 200.73** **MILITARY SPECIFICATION COATING:** A coating that has a formulation that has been approved by a United States Military Agency for use on military equipment.
- ~~227~~**200.74** **MINUS EXEMPT COMPOUNDS or MINUS EXEMPT EVAPORATING COMPONENTS:** See VOC Content Minus Exempt Compounds.
- ~~228~~**200.75** **MOBILE EQUIPMENT:** Any equipment that is physically capable of being driven or drawn upon a highway including, but not limited to, the following types of equipment: construction vehicles (such as mobile cranes, bulldozers, concrete mixers); farming equipment (wheel tractor, plow, pesticide sprayer); hauling equipment (truck trailers, utility bodies, camper shells); and miscellaneous equipment (street cleaners, mopeds, golf carts).
- 200.76** **MOLD-SEAL COATING:** The initial coating applied to a new mold or a repaired mold to provide a smooth surface which, when coated with a mold release coating, prevents products from sticking to the mold.
- 200.77** **MONOMER:** A volatile organic compound that partially combines with itself, or other similar compounds, by a cross-linking reaction to become a part of the cured resin or gel coat. A fraction of each monomer compound evaporates during resin and gel coat application and curing. Styrene and methacrylate (MMA) are the primary monomer VOC we have identified in the resins and gel coats used in fiberglass boat manufacturing.
- The resins contain styrene and the gel coats contain both compounds. In the remainder of this rule the monomers in resins and gel coats are referred to as monomer VOC.
- 200.78** **MONOMER PERCENT BY WEIGHT OF A RESIN:** the weight of the monomer, divided by the weight of the polymer.
- 200.79** **MULTI-COMPONENT COATING:** A coating requiring the addition of one or more separate reactive resins, commonly known as catalysts or hardeners, prior to application to form an acceptable dry film.
- ~~229~~**200.80** **ORGANIC COMPOUND:** Any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, carbonates, and metallic carbides. **ONE-COMPONENT COATING:** Any coating that is ready for application as it comes out of its container to form an acceptable dry film. A thinner or reducer, necessary to reduce the viscosity, is not considered a component.



- 200.81** **NON-ATOMIZING SPRAY APPLICATION EQUIPMENT:** Any application technique in which resin flows from the applicator, in a steady and observable coherent flow, without droplets, for a minimum distance of three (3) inches from the applicator orifices. Non-Atomized mechanical application means the use of application tools other than buckets and brushes to apply resin and gel coat. Examples of non-atomized application include flow coaters, pressure-fed rollers, and fluid impingement spray guns which can be a low pressure chopper gun.
- 200.82** **OPEN MOLDING:** Open molding System is a method of fabricating composite parts by applying gel coats, resins, fibers, and other composite materials on an open mold using either hand lay-up or spray-up applications. Boats made from fiberglass are typically manufactured in open molding. Separate molds are typically used for the boat hull, deck, and miscellaneous small fiberglass parts (also known as fiber reinforced plastic or FRP). Examples of FRP parts are fuel tanks, seats, storage lockers, and hatches.
- ~~230~~**200.83** **OTHER METAL PARTS AND PRODUCTS:** Any metal part or product, excluding the following items that are made of metal: can, coil, furniture, large appliance, aerospace component, metal foil, metal textile fabric, semiconductor metal, highway vehicle, mobile equipment, an architectural building or structure, a previously coated marine-vessel.
- ~~234~~**200.84** **OVERVARNISH:** Any coating applied to a can to reduce the coefficient of friction, to provide gloss, or to protect the finish against abrasion and/or corrosion.
- ~~232~~**200.85** **PAPER, FILM, AND FOIL, COATING:** Any coating applied on or impregnated into paper, including, but not limited to, adhesive tapes ~~and labels~~, book covers, post cards, office copier paper, ~~and drafting paper and pressure sensitive tapes~~. For decorative, protective, or functional purposes. Such materials include, but are not limited to, solvent-borne coatings, waterborne coatings, adhesives, wax coatings, wax laminations, extrusion coatings, extrusion laminations, 100 percent solid adhesives, UV cured coatings, electron beam cured coatings, hot melt coatings, and cold seal coatings. Materials used to form unsupported substrates, such as calendaring of vinyl, blown film, cast film, extruded film, and co-extruded film, are not considered coatings.
- 200.86** **PIGMENTED GEL COATS:** Used when a solid color surface is desired. Most gel coats are pigmented. Clear gel coats do not have any pigments and usually have a higher VOC content than pigmented gel coats.
- ~~233~~**200.87** **PLASTIC:** A substrate containing one or more resins and may be solid, porous, flexible, or rigid. Plastics include fiber reinforced plastic composites. Any solid, synthetic: resin, polymer, or elastomer, except rubber. For the purposes of this rule, plastic film is considered film; fabric and paper made of polymeric plastic fibers are considered fabric and paper, respectively.
- 200.88** **PLEASURE CRAFT:** Any marine or fresh-water vessel used by individuals for noncommercial, nonmilitary, and recreational purposes that is less than 20 meters (78.7 feet) in length. A vessel rented exclusively to or chartered by individuals for such purposes shall be considered a pleasure craft as defined in 40 C.F.R. § 63.782.
- A definition of ship specifically refers to the use of the vessel for military or commercial activities.
- 200.89** **PLEASURE CRAFT COATING:** Any marine coating, except unsaturated polyester resin (fiberglass) coatings, applied by brush, spray, roller, or other means to a pleasure craft.
- ~~234~~ **POLYESTER AND POLYESTER RESIN:** A complex, polymeric ester containing difunctional acids. Polyester resins can be isophthalic, orthophthalic, halogenated, bisphenol A, vinyl ester, furans, cross-linking agents, catalysts, gel coats, inhibitors, accelerators, promoters and any other material containing VOC used in polyester resin operations.
- ~~235~~**200.90** **POLYESTER COMPOSITE:** Cured material made of polyester resin with reinforcing material imbedded in it, such as glass fibers.
- 200.91** **POLYESTER:** A polymer of ester molecules, which are formulated by the reaction of an acid and an alcohol and linked together by the ester linkages, which is dissolved in a monomer



- 200.92** **POLYESTER RESIN MATERIALS:** Unsaturated polyester resins, such as Isophthalic, orthophthalic, halogenated, bisphenol A, vinyl ester, or furan resins; cross-linking agents; catalysts; gel coats; inhibitors; accelerators; promoters; and any other material containing VOC used in polyester resin operations.
- 200.93** **POLYESTER RESIN PUTTIES:** Fiberglass or fiber reinforced plastic (FRP) parts of the boat assembly are small pieces of woven glass or glass mat and resin, putties, or mechanical fasteners which are used assemble fiberglass parts and to fill gaps between parts. These polyester resins are mixed with fillers to create putty. The putty becomes part of the composite structure. The putties may be applied by hand, or by using mechanically powered equipment similar to a large caulking gun. These polyester resin putties used to assemble fiberglass parts are not considered adhesives.
- 200.94** **POWDER COATING:** Any material applied as a dry (without carrier) finely divided solid which, when melted and fused, adheres to the substrate as a paint film.
- 200.94** **PRESSURE-FED ROLLER:** This is a fabric roller that is fed with continuous supply of catalyzed resins from a mechanical fluid pump.
- ~~257~~ **PREFABRICATED ARCHITECTURAL COMPONENT COATING:** A coating applied to metal parts and products which are to be used as an architectural structure.
- ~~258~~ **PRESSURE SENSITIVE LABEL:** A flexible strip of paper or other material that is coated on one side with a permanently tacky adhesive which will adhere to a variety of surfaces with light pressure.
- ~~259~~ **PRESSURE SENSITIVE TAPE:** A flexible backing material with a pressure sensitive adhesive coating on one or both sides of the backing such as duct tape, duct insulation tape and medical tape.
- 200.95** **PRETREATMENT COATING:** A coating which contains no more than 12 percent solids by weight, and at least 1/2 percent acid, by weight, is used to provide surface etching, and is applied directly to metal surfaces to provide corrosion resistance, adhesion and ease of stripping.
- ~~236~~**200.96** **PRIMER:** A coating applied directly to substrate for any one or combination of the following purposes: corrosion prevention, protection from the environment, functional fluid resistance, or adhesion of subsequent coatings.
- 200.97** **PULTRUSION:** A process where continuous roving strands are moved through a strand-tensioning device into a resin bath for impregnation and then passed through a heated die for curing.
- ~~237~~**200.98** **QUALITY CLASS Q:** Any system, structure, coating or other component which, if defective or inoperable, could cause or increase the severity of a nuclear incident, thereby imposing undue risk to the health and safety of the public.
- 200.99** **REINFORCED PLASTIC COMPOSITE:** A composite material consisting of plastic reinforced with fibers.
- 200.100** **RUBBER:** Any natural or manmade rubber substrate, including but not limited to, styrene-butadiene rubber, polychloroprene (neoprene), butyl rubber, nitrile rubber, chlorosulfonated polyethylene and ethylene propylenediene terpolymer.
- ~~238~~**200.101** **REFINISHING:** Recoating a used object's surface which arrives at the refinisher with a coating or with a previous coating worn away by use.
- ~~239~~**200.102** **REPAIR COATING:** A coating or coating operation used to recoat the portion of a completed finish that suffered post-production damage at the facility where the finish was applied.
- 200.103** **REPAIR:** Addition of polyester resin to portions of a previously fabricated product in order to mend mechanical damage which occurs after the normal fabrication process.
- 200.104** **RESIN:** Class polymers used to encapsulate and bind together reinforcement fibers in the construction of fiberglass parts or bind together reinforcement fibers and/or fillers in the formulation of composite materials. A resin includes any class of organic polymers of natural or synthetic origin used in these reinforced products and is solid or semi-solid in the cured state.



- 200.105** **RESIN IMPREGNATOR:** A mechanical non-atomizing composite materials application technique in which fiber reinforcement is saturated with resins in a controlled ratio for each specific composite product.
- ~~240~~**200.106** **RESTRICTED SPRAY GUN:** Any air-atomizing spray gun that is not a low pressure spray gun, and any other coating gun that is not on the list in ~~Section 303.4~~Section 302 of this rule.
- 200.107** **ROLL COAT (Resin Rollers):** A coating application method accomplished by rolling a coating only a flat surface using a roll applicator.
- 200.108** **SEALANT:** Any material with adhesive properties that is formulated primarily to fill, seal, or waterproof gaps or joints between two surfaces and includes primer and caulks.
- 200.109** **SHOCK-FREE COATING:** A coating applied to electrical components 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.
- ~~241~~**200.110** **SILICONE RELEASE COATING:** Any resin coating the major cured portion of which is silicone resin, having as its primary function the release of food products from metal surfaces such as baking pans.
- 200.111** **SKIN COAT:** Layer of resin and fibers applied over gel coat to protect the gel coat from deformation by the subsequent laminate layers.
- ~~242~~**200.112** **SMALL SURFACE COATING SOURCE (SSCS):** A facility from which the total VOC emissions for all surface coating operations that are subject to this rule without, or prior to, any emission control, is less than 15 pounds (6.8 kg) per day and less than 2 tons (1814 kg) per year; as demonstrated by both adequate records of coating and diluent use (~~pursuant~~ according to Section ~~501.2~~ 501.4 of this rule) and a separate tally of the number of days each month that such coating operations occur.
- 200.113** **SOLVENT:** For the purpose of this rule, any liquid or vapor which is used to dissolve, clean, strip, or remove impurities, coatings, contaminants, or films from surfaces or from internal spaces and voids. In addition to VOC-containing solvents, this also includes plain water and mixtures containing water.
- 200.114** **SOLVENT CLEANING:** Removal of loosely held uncured adhesives, uncured inks, uncured coatings, and contaminants which include, but are not limited to, dirt, soil, and grease from parts, products, tools, machinery, equipment, and general work areas. Each distinct method of cleaning in a cleaning process, which consists of a series of cleaning methods, shall constitute a separate solvent cleaning operation.
- 200.115** **SPRAY-APPLIED COATING OPERATIONS:** Applies to operations in which coatings are applied using a hand-held device that creates an atomized mist of coating and deposits the coating on a substrate. For the purposes of this rule, spray-applied coating operations do not include the following materials or activities:
- a.** Surface coating application using powder coating, hand-held, non-refillable aerosol containers, or non-atomizing application technology, including, but not limited to, paint brushes, rollers, hand wiping, flow coating, dip coating, electro-deposition coating, web coating, coil coating, touch-up markers, or marking pens;
 - b.** Thermal spray operations (also known as metallizing, flame spray, plasma arc spray, and electric arc spray) in which solid metallic or non-metallic material is heated to a molten or semi-molten state and propelled to the work piece or substrate by compressed air or other gas, where a bond is produced upon impact.
- 200.116** **STENCIL COATING:** An ink or a coating which is rolled or brushed onto a template or stamp in order to add identifying letters, symbols and/or numbers.
- ~~243~~**200.117** **STRIPPABLE BOOTH COATING:** A temporary coating that is applied to spray booth surfaces to receive the overspray and protect the surfaces, and which is designed to readily be pulled off the substrate in strips or sheets, and disposed of.



- ~~244~~**200.118** **SURFACE COATING:** Any liquid, fluid, or mastic composition which is converted to a solid (or semi-solid) protective, decorative, or adherent film or deposit after application as a thin layer. Surface coating is generally distinct and different from impregnation and from applying adhesive for bonding purposes.
- ~~245~~**200.119** **SURFACE COATING OPERATION:** Preparation, handling, mixing, and application of surface coating, and cleanup of application-equipment and enclosures at a facility where surface coating is applied.
- ~~246~~**200.120** **THREE-PIECE CAN SIDE-SEAM COAT SPRAY COATING:** Any coating sprayed onto the interior and/or exterior of a can body seam on a three-piece can to protect the exposed metal.
- 200.121** **TIRE REPAIR:** 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.
- 200.122** **TOOLING RESIN:** A resin that is used to produce molds. Tooling resins generally more heat resistant (have higher heat distortion temperatures), low shrinkage, higher hardness, and higher dimensional stability than the production materials or outer surface coatings.
- ~~247~~**200.123** **TOPCOAT:** The final, permanent, coating-formulation that completed the finish on a surface.
- ~~248~~**200.124** **TOTAL VOC VAPOR PRESSURE (VOC COMPOSITE PARTIAL PRESSURE):** The sum of the partial pressures of the compounds defined as VOCs, calculated according to the formula in Section 504 of this rule.
- ~~249~~**200.125** **TOUCH-UP COATING:** A coating used to cover minor coating imperfections after the main coating operation. This includes touch-up coating that accompanies the purchase of an object already coated with that coating.
- 200.126** **TRANSFER EFFICIENCY:** The ratio of the weight of coating solids adhering to the part being coated to the weight of coating solids used in the application process expressed as a percentage.
- ~~250~~**200.127** **TWO-PIECE CAN EXTERIOR END COAT COATING:** Any coating applied to the exterior end of a can to provide protection to the metal.
- 200.128** **TUB/SHOWER RESINS:** Dicyclopentadiene (DCPD) resins, along with orthophthalate and isophthalate resins, are used to fabricate bathware products.
- 200.129** **VACUUM BAGGING:** A partially closed molding technology using techniques similar to open molding but with a modification in the resin curing stage. After resin decks, but it is not feasible to replace open molding with closed molding at all types of boat manufacturing facilities.
- 200.130** **VAPOR PRESSURE:** Pressure exerted at a uniform temperature by the gas of a substance when the gas is in equilibrium with the liquid (or solid) phase of that substance.
- 200.131** **VOC VAPOR PRESSURE (VOC COMPOSITE PARTIAL PRESSURE):** Sum of the partial pressures of the compounds defined as VOCs, calculated according to the formula in Section 504 of this rule.
- ~~251~~**200.132** **VINYL COATING (COATING ON VINYL):** Any decorative or protective coating or reinforcing coating applied over vinyl-coated textile fabric or vinyl sheets
- ~~252~~**200.133** **VOC BORNE COATING:** ~~A coating that contains more VOC than water, by weight.~~ **VOC - CONTAINING MATERIAL:** Any chemical or item that contains an organic compound that participates in atmospheric photochemical reactions, except the non-precursor organic compounds. This includes but is not limited to rags, waste coatings, waste brushes, waste rollers, waste applicators, waste solvents, and their residues that are used for surface preparation, cleanup or removal of surface coatings.
- ~~253~~ **VOC BORNE DILUENT:** ~~A solvent or other diluent that contains more VOC than water, by weight~~
- ~~254~~**200.134** **VOC CONTENT:** The portion of a chemical or substance in the organic compound that participates in atmospheric photochemical reactions, except for the non-precursor organic compounds. Section 504 of this rule instructs how to calculate the VOC content of a substance.



~~256 VOLATILE ORGANIC COMPOUND (VOC) – Any organic compound which participates in atmospheric photochemical reactions, except non-precursor~~

200.135 VAPOR SUPPRESSANT: A wax substance added to resin for the purpose of forming a layer on the surface of the resin while it is curing and minimize the outward diffusion of monomer vapor into the atmosphere.

200.136 VAPOR SUPPRESSED RESIN (VSR): Polyester resin material which contains additives to reduce VOC evaporation loss to less than fifty (50) grams per square meter of surface area as determined and certified by resin manufacturers.

~~SECTION 300 – STANDARDS~~

~~301 SURFACE COATINGS: A person shall comply with one of the following for all applications of surface coatings:~~

~~301.1 Meet the limits in Table 1.~~

~~301.2 Operate an ECS in accordance with subsection 306.1 when applying a coating that exceeds the VOC limits in Table 1.~~

~~301.3 Qualify for an exemption under Section 305.~~

TABLE 1

SURFACE COATING EMISSION LIMITS		
TYPE OF SURFACE COATING	LIMITS AS APPLIED: VOC content minus exempt compounds (see subsection 255.1)	
Column I	Column II	
	lbs/gal	g/liter
Can Coating		
Sheet Basecoat (Exterior and Interior) and Overvarnish	2.8	340
Two Piece Can Exterior (Basecoat and Overvarnish)	2.8	340
Two and Three Piece Can Interior Body Spray	4.2	510
Two Piece Can Exterior End (Spray or Roll Coat)	4.2	510
Three Piece Can Side Seam Spray	5.5	660
End Sealing Compound	3.7	440
Can Printing Ink	2.5	300
Coil Coating (any coat)	2.6	310
Metal Furniture Coating	3.0	360
Large Appliance Coating	2.8	340
OTHER METAL PARTS AND PRODUCTS COATING (As defined in Section 231)		
The following includes Non-adhesive Coating, Adhesive, Adhesive Primer, Caulking, and Beaded Sealants:		
Air-Dried Coating	3.5	420
Baked Coating [above 200°F (93°C)]	3.0	360
Silicone Release Coating: Baked or Air Dried	3.5	420
Fabric Coating	2.9	350
Film Coating	2.9	350
COATING PLASTIC PARTS AND PRODUCTS THAT ARE NOT DEFINED AS FLEXIBLE	3.5	420
COATING FLEXIBLE PLASTIC PARTS AND PRODUCTS		
Primer	4.1	490
Color Topcoat	3.8	450
Basecoat/Clear Coat (Combined System) – Limit for either coat	4.5	540
Paper Coating, including Adhesives	2.9	350
Vinyl Coating (Coating on Vinyl)	3.8	450



STRIPPABLE BOOTH COATINGS	2.0	240
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- 302 ~~APPLICATION METHODS FOR SURFACE COATINGS: A person shall employ one of the following for all applications of surface coating containing more than 2 pounds of VOC per gallon (240 g/L) minus exempt compounds:~~
- 302.1 ~~A low pressure spray gun; or~~
 - 302.2 ~~An electrostatic system; or~~
 - 302.3 ~~A system that atomizes principally by hydraulic pressure, including “airless” and “air assisted airless”; or~~
 - 302.4 ~~Non atomizing or non spraying application methods, such as but not limited to dipping, rolling, or brushing; or~~
 - 302.5 ~~Any method which is approved by the Administrator of the Federal EPA and the Control Officer as having a transfer efficiency of 65% or greater.~~
- 303 ~~CLEANUP OF APPLICATION EQUIPMENT: A person shall comply with the following when using VOC containing material to clean application equipment:~~
- 303.1 ~~Disassemble any spray gun and other application equipment and clean it in:~~
 - a. ~~A container which remains covered at all times, except when the application equipment is being handled in the container, or transferred into or out of the container; or~~
 - a. ~~A commercially sold gun cleaning machine which shall be operated and maintained as stipulated in the Air Pollution Permit’s Operation and Maintenance (O&M) Plan, or in the absence of its mention in the O&M Plan, according to manufacturer’s or distributor’s instructions.~~
 - 303.2 ~~Vapor Pressure Limits: Any person subject to this rule using VOC solvent to clean coating application equipment shall use only solvent which, as used, has a VOC vapor pressure below 35 mm Hg at 20° C (68° F), except for sprayless equipment exempted pursuant to subsection 305.6.~~
- 304 ~~HANDLING AND DISPOSAL OF VOC:~~
- 304.1 ~~Use And Storage: A person shall cover and keep covered each VOC containing material which is not currently in use. A person shall store finishing and cleaning materials in closed or covered leak free containers.~~
 - 304.2 ~~Disposal Of VOC And VOC Containing Material: A person shall store all VOC containing materials intended for disposal including, but not limited to, rags, waste coatings, waste brushes, waste rollers, waste applicators, waste solvents, and their residues, in closed, leakfree containers which are legibly labeled with their contents and which remain covered when not in use.~~
- 305 ~~EXEMPTIONS:~~
- 305.1 ~~Categorical Exemptions: This rule does not apply to the following operations:~~
 - a. ~~Aerospace coating operations (Rule 348).~~
 - b. ~~Architectural coating, including buildings and erected structures (Rule 335).~~
 - e. ~~Cleaning: VOC loss from cleaning or stripping a surface for coating or other purpose is regulated by Rule 331.~~
 - d. ~~Marine vessel exterior refinishing.~~
 - e. ~~Polyester coatings applied to polyester composites.~~
 - f. ~~Printing and graphic arts coating (Rule 337).~~
 - g. ~~Semiconductor manufacturing (Rule 338).~~



- h. ~~Coating a highway vehicle or mobile equipment (Rule 345).~~
 - i. ~~Wood: Coating Wood Furniture (Rule 342); Coating Wood Millwork (Rule 346).~~
- 305.2 ~~Exemptions for Qualified Materials: Rule 336 does not apply to the following materials that meet the specific qualification(s) and limitation(s) set forth herein:~~
- a. ~~Leak Preventing Materials: Sealants, adhesives, caulking, and similar materials used on the following substrates for the primary purpose of leak prevention are exempt from this rule:~~
 - (1) ~~Non-metallic substrates; and~~
 - (2) ~~Used substrates, post manufacture, such as, but not limited to, old joints and seals on pipe and valve assemblies.~~
 - b. ~~Adhesive Use:~~
 - (1) ~~Adhesive and adhesive primer applications are exempt from this rule, except for the 2 categories that appear in Table 1, namely adhesive materials applied to other metal parts and products (as defined in Section 231), and adhesives used in paper coating (as defined in Section 233).~~
 - (2) ~~Any adhesive exempted by this Rule 336 and to which no other rule in Regulation III specifically applies shall comply with the provisions of Rule 330 (Volatile Organic Compounds) of these Rules & Regulations.~~
 - a. ~~Certain Joint Fillers: Caulking and beaded sealants used to fill gaps or to fill joints between surfaces are exempt from this rule, except those used in manufacturing other metal parts and products as defined in Section 231 of this rule, or in the manufacturing of cans.~~
 - d. ~~Extreme Performance Coatings: Extreme performance coatings are exempt from the VOC limits of Table 1 when used under the following conditions:~~
 - (1) ~~Used on internal combustion engine components that are normally above 250°F (121°C) during use; or~~
 - (2) ~~Used at temperatures above 250°F (121°C) on items that are both included under SIC (Standard Industrial Classification, 1987) codes 3661, 3663, 3669, 3677, 3678, 3679, or 3769 and are electronic products in space vehicles and/or are communications equipment. The US Government Printing Office “Standard Industrial Classification Manual, 1987” (and no future editions) is incorporated by reference and is on file at the Maricopa County Air Quality Department, 1001 N. Central Ave., Phoenix, Arizona 85004.~~
- 305.3 ~~ECS Use In Lieu Of Equipment/Practice: In lieu of meeting an equipment or work practice standard within Sections 302, 303, or 304, an owner or operator is allowed to instead use an ECS that has a capture efficiency not less than 90% and meets all ECS requirements in Section 306.~~
- 305.4 ~~Spray Gun And VOC Limit Exemptions: The following are exempt from subsection 301.1, subsection 301.2, and Section 302 of this rule:~~
- a. ~~Coating with an aerosol can.~~
 - b. ~~Touch up or repair coating operations as defined in Sections 250 and 240.~~
 - c. ~~Low usage coatings which in aggregate of all formulations do not exceed 55 gallons (208 liters) per year facility wide if the operator updates usage records of these coatings on each day of their use, pursuant to subsection 501.2.~~
 - d. ~~A small surface coating source (SSCS) as defined in Section 243. However, once a small surface coating source exceeds either the 15 lb per day or the 2 tons per year limits that are required to maintain SSCS status that facility is permanently subject to the limits of subsection 301.1, subsection 301.2, and Section 302, with the following exception:~~
 - (1) ~~For such a facility that does not have either a 15 lb/day or a 2 ton/year VOC emission limit in an Air Pollution Permit for processes regulated by this rule, an owner or operator~~



may retain the exemption if s/he agrees in writing to enforceable permit conditions that establish these or stricter limits.

(2) However, a facility that violates its permit limit of either 15 lbs VOC/day or 2 tons VOC/yr. for coating process regulated by this Rule 336 is permanently subject to the limits of subsections 301.1 and 301.2, and Section 302.

- a. A Quality Class Q protective coating that is used on equipment, structures, and/or components within a containment facility of a nuclear power plant and is approved in accordance with either ANSI standards N101.2 and N101.4 or with ASTM Standards D3911 and D3843.
- a. A tactical military equipment coating that is approved in a Maricopa County Air Pollution Permit subsequent to a sufficient demonstration by the user that no compliant substitute exists.

305.5 Special Facilities/Operations:

- a. ~~Silicone Release Coatings: Silicone release coating operations controlled by an ECS pursuant to subsection 301.2 are exempt from the 85 percent overall control efficiency requirement if the ECS demonstrates at least 70 percent overall control and the coating is applied with a liquid seal air spray system.~~
- b. ~~Bonding Impact Resistant Rubber Lining To Metal: An adhesive and an adhesive primer are exempt from Table 1 limits, but shall not have a VOC content of material exceeding 850 grams of VOC per liter (7.1 lb/gal), if such adhesive is used to bond sheets/strips of rubber to metal equipment so that such rubber sheathing directly contacts material received by the metal and so protects the metal. This exception does not apply to any other situations where adhesives are used to bond rubber to metal.~~

305.6 ~~Exemption Of Coating Applicator Cleanup: A person is allowed to use solvent that has at 20° C (68° F) a total VOC vapor pressure above 35 mm Hg for cleaning coating application equipment, but only if such application equipment does not use spray devices and the same principal solvent is used for cleaning as is used in the coating.~~

305.7 ~~Low Usage Allowance for Restricted Guns: A person may employ spray guns otherwise prohibited by Section 302 for use with coatings over 2 lb VOC /gal under the following limited conditions:~~

- a. ~~If VOC emissions from the finishing application station, are captured and directed to an ECS complying with the provisions of Section 306.~~
- b. ~~To coat the inside of pipes and tubes with a wand style applicator.~~
- e. ~~Using an airbrush or other small gun that has a reservoir capacity not exceeding 250 cc (8.8 fluid ounces) and is used solely for detailing, lettering, touchup, and/or repair.~~

306 REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT AND ECS MONITORING EQUIPMENT:

306.1 ~~ECS Control Efficiencies: To meet the requirements pursuant to subsection 301.2, subsection 305.3, or subsection 305.7, an ECS shall be operated as follows:~~

- a. ~~Overall ECS Efficiency: Overall, the ECS shall prevent at least 85% of the mass of the VOC emitted by each coating or process so controlled from entering the atmosphere except as successfully controlled pursuant to the alternative in subsection 306.1c(2).~~
- b. ~~Capture Efficiencies:~~
 - (1) ~~For an ECS used pursuant to subsection 301.2 and/or subsection 305.7, capture shall be at least 87%.~~
 - (2) ~~For an ECS used pursuant to subsection 305.3, capture shall be at least 90%.~~



- e. ~~Control Efficiency Of The Emissions Processing Subsystem:~~
 - (1) ~~The emissions processing subsystem of the ECS shall reduce the mass of VOC entering it by at least 90 percent; or~~
 - (2) ~~Alternative for Very Dilute Input: For VOC input concentrations of less than 100 ppm (as carbon) at the inlet of the ECS emissions processing subsystem, an ECS' VOC processing subsystem also satisfies the processor efficiency requirements of this rule if:~~
 - (a) ~~The VOC output is consistently less than 20 mg VOC/M3 (as carbon) adjusted to standard conditions; and~~
 - (b) ~~The ECS consistently shows an overall control efficiency of at least 85% when tested pursuant to subsection 503.3 at VOC input concentrations exceeding 100 ppm (as carbon).~~
- d. ~~Coating that exceeds the applicable VOC limits in Table 1 shall be clearly identified such that coating operators are informed an ECS must be used.~~

306.2 ~~Operation And Maintenance (O&M) Plan Required for ECS:~~

- a. ~~An owner or operator shall provide and maintain (an) O&M Plan(s) for any ECS, any other emission processing equipment, and any ECS monitoring devices that are used pursuant to this Rule 336 or to an air pollution control permit.~~
- b. ~~The owner or operator shall submit to the Control Officer for approval the O&M Plans of each ECS and each ECS monitoring device that is used pursuant to this Rule 336.~~
- e. ~~The owner or operator shall comply with all the identified actions and schedules provided in each O&M Plan~~

306.3 ~~Providing And Maintaining ECS Monitoring Devices: Any person incinerating, adsorbing, or otherwise processing VOC emissions pursuant to this rule shall provide, properly install and maintain in calibration, in good working order and in operation, devices described in the facility's O&M Plan that indicate temperatures, pressures, rates of flow, or other operating conditions necessary to determine if air pollution control equipment is functioning properly and is properly maintained. Records shall be kept pursuant to Section 502 which demonstrate that the ECS meets the overall control standard required by subsection 306.1.~~

306.4 ~~O&M Plan Responsibility: An owner or operator of a facility that is required to have an O&M Plan pursuant to subsection 306.2 must fully comply with all O&M Plans that the owner or operator has submitted for approval, but which have not yet been approved, unless notified otherwise by the Control Officer in writing.~~

SECTION 300 – STANDARDS

301 MANUFACTURING AND REPAIR OPERATIONS:

301.1 Polyester Resin Operation Requirements: An owner and/or operator shall comply with one of the following for all applications of polyester resins:

- a. Open Molding Process: An owner or operator using an open molding system (Section 200.70 of this rule), shall use materials that comply with the weighted average monomer VOC content limits listed in Table 336-1 of this rule; or
- b. Closed-Mold System: Use a closed-mold system (section 200.12 of this rule); or
- c. Use of Emission Control System (ECS): Install and operate a VOC emissions control system (Section 304 of this rule) that has 90% control efficiency and control emissions to a limit equivalent to the level achieved by the limits in Table 336-1 of this rule.
- d. Additional Polyester Resin Operation Requirements



- (1) In addition to complying with Table 336-1, the non-monomer VOC content of each resin and gel coat shall not contain more than 5 percent by weight of the resin or gel coat.
- (2) Use resin containing a vapor suppressant, such that the weight loss from the VOC emissions does not exceed 50 grams per square meter of exposed surface during resin polymerization;

TABLE 336-1: VOC CONTENT LIMITS FOR OPEN MOLDING RESIN AND GEL COAT

<u>Gel Coats and Resins</u>	<u>Weight Percent Limit</u>
Gel Coats	
Clear Gel Coats	
Marble Resin Gel Coats	40
Other Tooling Gel Coats	40
All Other Clear Gel Coats	44
Pigmented Gel Coats	
White and Off-White Gel Coats	30
Other Non-White Gel Coats	37
Primer Gel Coats	28
Speciality Gel Coats	48
Resins	
Marble resins	10% with fillers or 32% without fillers*
Solid Surface Resins	17
Tub/Shower Resins	24% with fillers or 35% without fillers
Lamination Resins	31% with fillers or 35% without fillers
Fire Retardant Resins	38
Corrosion Resistant, High Strength and Tooling Resins	
Non-atomizing Mechanical Application	46**
Filament Application	42**
Manual Application	40**
Other Resins	35

Monomer percent by weight includes the addition of any VOC-containing materials.

*An owner or operator of a polyester resin operation may meet the monomer content limits by adding filler to a resin to reduce the monomer content to the applicable limit or by using resin with a monomer content that complies with the applicable limit without the addition of fillers.

**If the owner or operator manufactures a composite product by using more than one technology to apply corrosion-resistant, high strength or tooling resins, the highest permissible resin monomer content is the applicable limit.

301.2 Pleasure craft and Fiberglass Boat Manufacturing and Repair Operations:

- a. **Pleasure Craft VOC Coating Limits:** An owner and/or operator of a pleasure craft manufacturing or repair operation shall use coatings that comply VOC limits specified in Table 336-2 of this rule.

TABLE 336-2: PLEASURE CRAFT SURFACE COATING VOC CONTENTS LIMITS:

<u>Coating category</u>	<u>g. VOC/l. coating</u>	<u>lbs VOC/gal.coating</u>
Extreme High Gloss Topcoat	490	4.1
High Gloss Topcoat	420	3.5
Pretreatment Wash Primers	780	6.5
Finish Primer/Surfacer	420	
High Build Primer Surfacer	340	2.8
Aluminum Substrate Anti-foulant Coating	560	4.7
Other Substrate Anti-foulant Coating	330	2.8
All other Pleasure craft surface coatings for metal or plastic	420	
Antifouling Sealer/Tie Coat (new category)	420	3.5



b. Fiberglass Boat Manufacturing Operations: The non-monomer VOC content shall be limited to 5 percent by weight of the total resin and gel coats and an owner and an owner and/or operator shall comply with at least one of the following process or control requirements for all fiberglass boat manufacturing:

- (1) **Open Molding Process:** An owner or operator using an open molding system (Section 200. of this rule) for fiberglass boat manufacturing or repair shall use materials that comply with the weighted average monomer VOC content limits listed in Table 336-3 of this rule; or
- (2) **Closed-mold system (Section 200.12 of this rule):** An owner and/or operator shall not operate a closed molding system, unless the weight loss of polyester resin materials during polymerization is less than four (4.0) percent.
- (3) **Install and operate a VOC emissions control system (section 305 of this rule)** that has at least a 90 percent control efficiency (by weight) or controls emissions equivalent to the level achieved by the limits in Table 336-3 of this rule. Emissions shall be continuously averaged over a rolling 24 hour period.

TABLE 336-3: COMPLIANT MATERIALS MONOMER VOC CONTENT FOR OPEN MOLDING RESIN AND GEL COATS

<u>For this Material</u>	<u>This application method</u>	<u>This weighted average monomer VOC content (weight %) limit is required:</u>
<u>Production Resin</u>	<u>Atomized (Spray)</u>	<u>28</u>
<u>Production Resin</u>	<u>Non-atomized</u>	<u>35</u>
<u>Pigmented gel coat</u>	<u>Any Method</u>	<u>33</u>
<u>Clear Gel Coat</u>	<u>Any Method</u>	<u>48</u>
<u>Tooling Resin</u>	<u>Atomized</u>	<u>30</u>
<u>Tooling Resin</u>	<u>Non-atomized</u>	<u>39</u>
<u>Tooling Gel Coat</u>	<u>Any Method</u>	<u>40</u>

302 SURFACE COATING OPERATIONS: An owner and/or operator shall comply with one of the following for all applications of surface coatings:

302.1 Low-VOC Content Coatings (less water and exempt compounds): Meet the limits in Tables 336- 4 through 336-8 when using low-VOC content coatings (less water and exempt compounds, as applied) and the application methods listed in Section 305 of this rule;

Table 336 -4 (Metal Part coatings):

Table 336-5 (Can and Coil Coatings):

Table 336-6 (Plastic Part coatings):

Table 336-7 (Business Machines Coatings) of this rule;

Table 336-8 (Metal Furniture and Large Appliance Coatings).

302.2 Low-VOC Content Coatings (VOC per Volume Solid): Meet the limits in Tables 336- 9 through 336-12 when using low-VOC content coatings (VOC per Volume Solid), the application methods listed in Section 305 of this rule, and add-on control equipment listed in Section 304 of this rule; (assume VOC density of 7.36 pounds per gallon):

Table 336 -9 (Metal Part coatings):

Table 336-10 (Plastic Part coatings):

Table 336-11 (Business Machines Coatings):

Table 336-12 (Metal Furniture and Large Appliance Coatings).



302.3 Use of Emission Control System: Use an emission capture system and add-on control device (Section 304 of this rule) to achieve an overall VOC control efficiency of at least 90 percent for owners and/or operators that chose to use add-on controls in lieu of low-VOC content coatings and specified application methods. These add-on controls shall control emissions equivalent to the levels achieved in Sections 302.1 and 302.2 of this rule.

302.4 Paper, Film and Foil Coatings: Coatings used in paper, film and foil surface coating (Section 200.74 of this rule) shall attain a 90 percent VOC control efficiency for each coating line. (Section 200.14 of this rule) The options to attain the 90% control efficiency are use of:

- a. Use of low -VOC content materials (Table 336-13); or
- b. Use of low-VOC materials and controls (Section 305 of this rule).

Table 336-4: Metal Parts and Products VOC Content Limits(less water and exempt compounds)

Coating Category	Air Dried		Baked	
	g VOC/l	lb VOC/gal	g VOC/l	lb VOC/gal
General One Component	340	2.8	280	2.3
General Multi Component	340	2.8	280	2.3
Camouflage	420	3.5	420	3.5
Electric-Insulating Varnish	420	3.5	420	3.5
Etching Filler	420	3.5	420	3.5
Extreme High-Gloss	420	3.5	360	3.0
Extreme Performance	420	3.5	360	3.0
Heat-Resistant	420	3.5	360	3.0
High Performance Architectural	740	6.2	740	6.2
High Temperature	420	3.5	420	3.5
Metallic	420	3.5	420	3.5
Military Specification	340	2.8	280	2.3
Mold-Seal	420	3.5	420	3.5
Pan Backing	420	3.5	420	3.5
Prefabricated Architectural Multi- Component	420	3.5	280	2.3
Prefabricated Architectural One- Component	0.42	3.5	280	2.3
Pretreatment Coatings	420	3.5	420	3.5
Repair and Touch Up	420	3.5	360	3.0
Silicone Release	420	3.5	420	3.5
Solar-Absorbent	420	3.5	360	3.0
Vacuum-Metalizing	420	3.5	420	3.5
Drum Coating, New, Exterior	340	2.8	0.34	2.8
Drum Coating, New, Interior	420	3.5	420	3.5
Drum Coating, Reconditioned, Exterior	420	3.5	420	3.5
Drum Coating, Reconditioned, Interior	500	4.2	500	4.2

TABLE 336-5: Can and Coil Coating Limits (VOC content minus water and exempt compounds)		
COATING CATEGORY	LIMITS AS APPLIED:	
	lbs/gal	g/liter
Can Coating		
Sheet Basecoat (Exterior and Interior) and Overvarnish	2.8	340
Two-Piece Can Exterior (Basecoat and Overvarnish)	2.8	340
Two and Three-Piece Can Interior Body Spray	4.2	510
Two-Piece Can Exterior End (Spray or Roll Coat)	4.2	510
Three-Piece Can Side-Seam Spray	5.5	660
End Sealing Compound	3.7	440



Can Printing Ink	2.5	300
Coil Coating (any coat)	2.6	310
Fabric Coating	2.9	350
Film Coating	2.9	350

Table 336-6: Plastic Parts and Products VOC Content Limits(less water and exempt compounds)

Coating Category	g VOC/liter	lbs VOC/gal
General One Component	280	2.3
General Multi Component	420	3.5
Electric Dissipating Coatings and Shock-Free Coatings	800	6.7
Extreme Performance	420 (2-pack coatings)	3.5 (2-pack coatings)
Metallic	420	3.5
Military Specification	340 (1 pack) 420 (2 pack)	2.8 (1 pack) 3.5 (2 pack)
Mold-Seal	760	6.3
Multi-colored Coatings	680	5.7
Optical Coatings	800	6.7
Vacuum-Metalizing	800	6.7

Table 336-7: Business Machine Coatings (VOC Content less water and exempt compounds)

	g VOC/liter	lbs. VOC/ gal.
I. Primers	350	2.9
II. Topcoat	350	2.9
III. Texture Coat	350	2.9
IV. Fog Coat	260	2.2
V. Touchup and repair	350	2.9

Table 336 – 8: Metal Furniture and Large Appliance Coatings (VOC content less water and exempt compounds)

Coating Type	Baked		Air Dried	
	g/l	lb/gal	g/l	lb/gal
General, One Component/ Large Appliances	275	2.3	275	2.3
General, Multi-Component	275	2.3	340	2.8
Extreme High Gloss	360	3.0	340	2.8
Extreme Performance	360	3.0	420	3.5
Heat Resistant	360	3.0	420	3.5
Metallic	420	3.5	420	3.5
Pretreatment Coatings	420	3.5	420	3.5
Solar Absorbent	360	3.0	420	3.5

Table 336- 9: Metal Parts and Products (VOC per volume solids)

Coating Category	Air Dried		Baked	
	g VOC/l solids	lb VOC/gal solids	g VOC/l solids	lb VOC/gal solids
General One Component	540	4.52	400	3.35
General Multi Component	540	4.52	400	3.35
Camouflage	800	6.67	800	6.67
Electric-Insulating Varnish	800	6.67	800	6.67
Etching Filler	800	6.67	800	6.67
Extreme High-Gloss	800	6.67	610	5.06



Extreme Performance	800	6.67	610	5.06
Heat-Resistant	800	6.67	610	5.06
High Performance Architectural	4560	38.0	4560	38.0
High Temperature	800	6.67	800	6.67
Metallic	800	6.67	800	6.67
Military Specification	540	4.52	400	3.35
Mold-Seal	800	6.67	800	6.67
Pan Backing	800	6.67	800	6.67
Prefabricated Architectural Multi-Component	800	6.67	400	3.35
Prefabricated Architectural One-Component	800	6.67	400	3.35
Pretreatment Coatings	800	6.67	800	6.67
Silicone Release	800	6.67	800	6.67
Solar-Absorbent	800	6.67	610	5.06
Vacuum-Metalizing	800	6.67	800	6.67
Drum Coating, New, Exterior	540	4.52	540	4.52
Drum Coating, New, Interior	800	6.67	800	6.67
Drum Coating, Reconditioned, Exterior	800	6.67	800	6.67
Drum Coating, Reconditioned, Interior	1170	9.78	1170	9.78

Table 336-10: Plastic Parts and Products VOC Emission Rate Limits (VOC per Volume Solids)

Coating Category	g VOC/liter solids	lbs VOC/gal solids
General One Component	400	3.35
General Multi Component	800	6.67
Electric Dissipating Coatings and Shock-Free Coatings	8960	74.7
Extreme Performance	800	6.67
	(2-pack coatings)	(2-pack coatings)
Metallic	800	6.67
Military Specification	540 (1 pack)	4.52 (1 pack)
	800 (2 pack)	6.67 (2 pack)
Mold-Seal	5240	43.7
Multi-colored Coatings	3040	25.3
Optical Coatings	8960	74.7
Vacuum-Metalizing	8960	74.7

Table 336-11: Business Machine Coatings (VOC per volume solids)

	g/liter lbs.	VOC./gal solids
I. Primers	570	4.80
II. Topcoat	570	4.80
III. Texture Coat	570	4.80
IV. Fog Coat	380	3.14
V. Touchup and repair	570	4.80

Table 336 – 12: Metal Furniture and Large Appliance Coating (mass of VOC per volume of coating solids)

Coating Type	Baked		Air Dried	
	g/l	lb/gal	g/l	lb/gal
General, One Component/ Large Appliances	400	3.3	400	3.3
General, Multi-Component	400	3.3	550	4.5
Extreme High Gloss	610	5.1	550	4.5
Extreme Performance	610	5.1	800	6.7
Heat Resistant	610	5.1	800	6.7
Metallic	800	6.7	800	6.7



Pretreatment Coatings	800	6.7	800	6.7
Solar Absorbent	610	5.1	800	6.7

Table 336-13: VOC limits for Paper, Film, and Foil Surface Coating

Units	RACT Limits	
	Pressure Sensitive Tape and Label Surface Coating	Paper, Film, and Foil Surface Coating (Not including Pressure Sensitive Tape and Label)
Emission Reduction (%)	90	90
kg VOC/kg solids (lb VOC/lb solids)	0.20	0.40
kg VOC/kg coating (lb VOC/lb solids)	0.067	0.08

303 INDUSTRIAL ADHESIVES & ADHESIVE PRIMERS

303.1 APPLICATION OF ADHESIVES: A person shall comply with one of the following for all applications of adhesives:

- a. Meet the limits in Section 303.1; Table 336-14 of this rule; or
- b. Operate an ECS in accordance with Section 304 when applying a coating that exceeds the VOC limits in this rule; or
- c. Qualify for an exemption under Sections 103 of this rule.

TABLE 336-14: INDUSTRIAL ADHESIVES

INDUSTRIAL ADHESIVE EMISSION LIMITS		
	LIMITS AS APPLIED: VOC content minus exempt compounds (see subsection 240.1) *	
	lbs/gal	g/liter
GENERAL ADHESIVE APPLICATION PROCESSES		
Reinforced Plastic Composite	1.7	200
Flexible Vinyl	2.1	250
Metal	0.3	30
Porous Metal (except wood)	1.0	120
Rubber	2.1	250
Wood	0.3	30
Other Substrates	2.1	250
SPECIALTY ADHESIVE APPLICATION PROCESSES		
Ceramic Tile Installation	1.1	130
Contact Adhesive	2.1	250
Cove Base Installation	1.3	150
Floor Covering Installation (Indoor)	1.3	150
Floor Covering Installation (Outdoor)	2.1	250
Floor Covering Installation (Perimeter Bonded Sheet Vinyl)	5.5	660
Metal to Urethane/Rubber Molding or Casting	7.1	850
Multipurpose Construction	1.7	200
Plastic Solvent Welding (ABS)	3.3	400
Plastic Solvent Welding (Except ABS)	4.2	500
Sheet Rubber Lining Installation	7.1	850
Single-Ply Roof Membrane Installation/Repair (Except EPDM)	2.1	250
Structural Glazing	0.8	100
Thin Metal Laminating	6.5	780
Waterproof Resorcinol Glue	1.4	170
ADHESIVE PRIMER APPLICATION PROCESSES		



Plastic Solvent Welding Adhesive Primer	5.4	650
Single-Ply Roof Membrane Adhesive Primer	2.1	250
Other Adhesive Primer	2.1	250
Motor Vehicle Glass Bond Primer	7.5	900

*If an adhesive is used to bond dissimilar substances together, then the applicable substrate category with the highest VOC emission limit is recommended as the limit for such application.

304 EMISSION CONTROL SYSTEM (ECS):

304.1 Emission Control System (ECS) Efficiency: The VOC limits of Sections 304 through 307 of this rule do not apply when emissions to the atmosphere are controlled by an ECS that maintains the following conditions:

- a. **Identify Use of ECS:** Shall clearly inform facility-operators that exceeding the applicable VOC-limits in these sections requires an ECS must be used.
- b. **Coatings or Adhesives:** Overall VOC control efficiency of 90 percent for facilities that choose to use add-on controls instead of low-VOC content coatings or adhesives.
- c. **Polyester Resin or Fiberglass:** Overall control efficiency of at least 90 percent, on a mass basis for facilities that choose to use add-on controls to reduce VOC emissions.
- d. **Operation and Maintenance (O&M) Plan:** An owner and/or operator subject to this rule must provide (an) O&M Plan(s) for any ECS and any ECS monitoring devices that are used according to this Rule 336 or an air pollution control permit as defined in Section 301.2 of this rule.

304.2 Operation And Maintenance (O&M) Plan Requirements: An owner and/or operator of a facility that is required to have an O&M Plan-according to Section 301.1 of this rule shall comply with the following:

- a. **Approval by Control Officer:** Submit to the Control Officer for *approval, the* O&M Plan(s) for any ECS including any ECS monitoring device that is used under this rule or required under an air pollution control permit. The approved O& M plan must be readily available on-site at all times to the Control Officer.
- b. **Provide and Maintain ECS Monitoring Devices:** Must install, maintain, and accurately calibrate monitoring devices described in the O&M Plan(s) including, but not limited to, monitoring devices that measure pressure differentials and other operating conditions necessary to determine if control devices are functioning properly.
- c. **Compliance with Plan:** Shall fully comply with all the identified actions and schedules provided in each O&M Plan. Once the initial plan has been approved in writing by the Control Officer
- d. **Information Required in Plan:** Include the following information for any ECS monitoring devices:
 - (1) ECS equipment manufacturer,
 - (2) ECS equipment model,
 - (3) ECS equipment identification number or identifier that owner, operator, or person subject to this rule assigns to such ECS equipment when the manufacturer’s equipment identification number is unknown, and
- e. **RecordKeeping:** Information required in Section 500 of this rule.

304.3 Deficient Plan: An owner and/or operator subject to this rule, who receives a written notice from the Control Officer that the O&M Plan is deficient or inadequate, must make written revisions to the O&M Plan for any ECS including any ECS monitoring devices. They must submit such revised O &M Plan to the Control Officer within five working days of receipt of the Control Officer’s written notice, unless such time period is extended by the Control Officer, upon written



request, for good cause. During the time that such owner and/or operator subject to this rule is preparing revisions to the O&M Plan, such owner, operator, or person must still comply with all requirements of this rule.

305 APPLICATION METHODS

305.1 Surface Coatings: An owner and/or operator shall use one of the following methods for all Surface Coating applications subject to this rule, containing more than 2 pounds of VOC per gallon (240 g/L) minus exempt compounds:

- a.** A low pressure spray gun; or
- b.** Electrostatic application, or
- c.** Non-atomizing or non-spraying application methods, such as but not limited to dipping, rolling, or brushing; or
- d.** A system that atomizes principally by hydraulic pressure, including “airless” and “air assisted airless”; or
- e.** Hand Application Methods, or
- f.** A high-volume low pressure (HVLP) spray-gun that meets the definition of HVLP in this rule (Section) and that meets the spray-gun tip pressure measurement test described in Section 503.1(d) of this rule;
- g.** An Alternative Application Method: Any method approved by the Control Officer which achieves either an HVLP equivalent or transfer efficiency greater than or equal to 65%, as demonstrated with the following:
 - (1)** In accordance with the provisions of Section 503.1(d) of this rule; or
 - (2)** As stamped on the gun by the manufacturer; or
 - (3)** From testing documentation of the HVLP spray-gun status provided by the manufacturer.
- h.** Low Usage Allowance for Restricted Guns: Spray guns otherwise prohibited by Section 305 of this rule may be used under the following conditions:
 - (1)** If VOC emissions are captured and directed to an ECS complying with the provisions of Section 304 of this rule; or
 - (2)** To coat the inside of pipes and tubes with a wand-style applicator; or
 - (3)** Using an airbrush or other small gun that has a reservoir capacity not exceeding 250 cc (8.8 fluid ounces) and is used solely for detailing, lettering, touchup, and/or repair

305.2 Polyester Resin Operations: An owner and/or operator shall use the following methods for these specific Polyester Resin Applications subject to this rule:

- a.** Tub/Shower Polyester Resin Materials: An owner or operator shall not apply to an open molding system any tub/shower polyester resin material unless all the applied resin material is vapor suppressed.
- b.** Resin Material Application (Excluding Gel Coats): An owner and/or operator shall not apply any resin materials to an open mold surface unless one of the following non-atomizing application techniques are used and operated according to the operating procedure specified by the equipment manufacturer:
 - (1)** Pressure-fed resin rollers (Section 200.97); or
 - (2)** Resin Impregnators (Section 200.95); or
 - (3)** Flow Coaters (Section 200.42); or
 - (4)** Fluid impingement technology (Section 200.43); or



- (5) Hand Lay-up applications (Section 200.47); or
- (6) Other non-atomizing application techniques which are approved in writing by the Control Officer and U.S. EPA, as having similar emission reduction efficiencies.

c. Gel Coat Application: An owner and/or operator shall not apply gel coat materials to an open molding surface unless one of the following application techniques is used and operated according to the operating procedure specified by the equipment manufacturer:

- (1) Any nonatomizing application technique listed under Section 305.2(b) of this rule;
- (2) Air-Assisted Airless Spray;
- (3) Electrostatic Attraction; or
- (4) High-Volume, Low-Pressure (HVLP)

d. Pultrusion Operations: An owner or operator shall not perform pultrusion operations, unless wet-out tubs baths are covered except for 18 inches from the exit of the bath to the die. The weight loss of polyester resin materials during polymerization shall be less than three (3) percent in a pultrusion operation.

e. Alternative Compliance Option: An owner or operator may use alternative application processes and materials to those listed in Section 303 of this rule provided they result in equivalent VOC emissions and are approved in writing by the Control Officer and U.S. EPA.

305.3 Pleasure-craft: Extreme High Gloss Coatings: Extreme High Gloss Coatings shall not be applied with the use of the application methods listed in Section 306.1 although the remaining provisions of this rule apply.

306 CLEANUP ACTIVITIES AND WORK PRACTICES (STORAGE, HANDLING, AND DISPOSAL):

306.1 CLEANUP ACTIVITIES:

a. Clean-Up for Surface Coating, Pleasure Craft, Polyester Resin Operations:

VOC content limits of solvents used for removing coating residue, unwanted materials from equipment, transfer lines (e.g., tubing or piping), tanks, and the interior of spray booths shall not exceed those limits listed in Table 336-15 below. Spray-gun cleaning requirements are found in section 306.1 (c) of this rule below.

TABLE 336-15

<u>VOC CONTENT LIMITS FOR SOLVENTS</u> Type of Solvent Cleaning Operation	VOC Content Limit Grams of VOC/liter of material (lb/gal)
Product Cleaning During Manufacturing Process or Surface Preparation for Coating Application	25 (0.21)
Repair and Maintenance Cleaning	25 (0.21)
Cleaning of Polyester Resin Application Equipment	25 (0.21)

b. Clean-Up for Surface Coatings, Pleasure-Craft, and Adhesive Application Equipment: VOC-solvents used to clean coating application equipment shall use only solvent which, as used, have a VOC-vapor pressure below 35 mm Hg at 20° C (68° F), except for spray-less equipment exempted pursuant to Section 103.2(j)(2) of this rule.

c. Clean-Up for Fiberglass Boat Manufacturing: VOC cleaning solvents used for routine cleaning of application equipment, tools, machinery, equipment, and general working areas shall:

- (i) Contain no more than 5 percent VOC, by weight; or
- (ii) Have a composite vapor pressure of no more than 0.50 mm Hg at 68 °F.



- d. Clean-Up for Adhesive Use:** VOC content of solvents used to clean adhesive application equipment shall be less than 70 g/l with the exception of a solvent used for single-ply roofing. For single-ply roofing an owner or operator must use a solvent with a composite vapor pressure, minus water and exempt compounds, of less than 45 mm of Hg at 20°C (68°F).
- e. Spray-Gun Cleaning Requirements for Surface Coating and Adhesive Application Operations:**
- (1) An owner and/or operator subject to this rule shall clean spray-guns without spraying or atomizing a solvent cleaner with the gun.
- (2) **Spray-Gun Cleaning Machine:** An owner and/or operator subject to this rule shall use a spray-gun cleaning machine to clean spray-guns if the operation is required to have an Air Pollution Control Permit, as per Rule 200 of these Rules unless they comply with all the conditions in Section 306.1(c) (2)(b) of these rules.
- (a) Spray-Gun Cleaning Machine-General Requirements:** The spray-gun cleaning machine shall meet all of the following requirements:
- (i) Be designed to clean spray-guns.
- (ii) Have at least one pump which drives solvent cleaner through and over the spray-gun.
- (iii) Have a basin which permits containment of the solvent cleaner.
- (iv) Be kept in proper repair and free from liquid leaks.
- (v) Shall be fitted with a cover.
- (vi) Be located on-site where the spray application occurs.
- (vii) Shall be a commercially-sold gun cleaning machine which shall be operated and maintained as stipulated in the Maintenance Plan (O&M Plan), or in the absence of its mention in the O&M Plan, according to manufacturer's or distributor's instructions.
- (b) Manual Spray-Gun Cleaning Requirements:** Manual cleaning of spray-guns shall comply with the following requirements:
- (i) Disassembled spray-guns must be cleaned by hand; or
- (ii) Disassembled spray-guns must be soaked in a vat that is closed, except when the application equipment is being handled in the container, or transferred into or out of the container; or
- (iii) Solvent cleaners shall be less than 10 percent VOC (excluding water and non-precursor organic compounds) or shall contain less than 8.0 percent VOC by weight (including water and non-precursor organic compounds) and calculated pursuant to Section 503.5 of this rule.
- (iv) Solvent cleaner has a VOC-vapor pressure below 35 mm Hg at 20°C (68°F).

306.2 WORK PRACTICES: STORAGE AND HANDLING OF VOC-CONTAINING MATERIAL:

- a. Labeling:** All containers that are 1 gallon or larger used for collection of VOC-containing material shall be legibly labeled with their contents.
- b. Storage, Mixing, and Use of VOC Containing Materials:** All VOC-containing material and VOC-containing cleaning materials shall be stored in closed or covered leak-free containers. The containers shall be closed at all times except when the material is being handled such as when mixing, depositing, removing or transferring material into or out of the container.



c. Spills: Procedures to minimize spills of VOC-containing material during the handling, transfer to and from containers or enclosed systems, waste receptacles or other equipment including small containers, shall be implemented.

d. Conveyance of VOC-Containing Materials and VOC-Containing Cleaning Materials: An owner or operator shall ensure that all VOC-containing materials and VOC-containing cleaning materials shall be conveyed from one location to another in labeled and closed containers and pipes.

e. Fiberglass Resin, and Gel Coat Mixing Operations:

Mixing containers with a capacity equal to or greater than 55 gallons (208 liters), including those used for on-site mixing of putties and poly-putties, shall have a cover with no visible gaps in place at all times. This shall not apply when the material is being manually added to or removed from a container, or when mixing or pumping equipment is being placed in or removed from a container.

306.3 DISPOSAL

Waste Materials: An owner or operator shall store all VOC-containing coatings, thinners, and coating-related waste materials intended for disposal, but not limited to, rags, waste coatings, waste brushes, waste rollers, waste applicators, waste solvents, and their residues, in closed or covered, leak-free containers which are legibly labeled with their contents and which remain covered at all times when not in use.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE:

401.1 ECS Schedule: By August 1, 1999: (6 months after rule adoption)

- a.** All new recordkeeping provisions shall be in effect, including subsections 501.1c and 501.2a. Any owner and/or operator intending to install an Emission Control System (ECS) in a facility shall comply with requirements of subsection 501.4 Section 304 of this rule and shall announce the intention to use an ECS to the Control Officer in writing within 30 days if:
- ~~(1)a.~~ The ECS is used as an alternative to meeting the spray-gun provisions of Section 305; or
- ~~(2)b.~~ The ECS is used as an alternative to meeting the gun cleaning machine provisions of Section 306.1(d) of this rule.
- b.** The intention to use an Emission Control System (ECS) shall be announced to the Control Officer in writing if:
- ~~(1)~~ The ECS is used as an alternative to meeting the spray gun provisions of Section 302; or
- ~~(2)~~ The ECS is used as an alternative to meeting the gun cleaning machine provisions of Section 303.

401.2 By November 1, 1999, the following shall be in continuing use:

- a.** Spray guns required pursuant to Section 302;
- b.** Cleaning solvent(s) having the required vapor pressure pursuant to Section 303, and the data sheet(s) confirming the vapor pressure.

~~401.3~~**401.2** By May 1, 2000- (6 months after the rule adoption), the ECS announced pursuant to subsection 401.1b Section 401.1 of this rule shall be in continuing continuous use.

401.3 O&M Plan:

402.1a. The owner and/or operator of an existing facility shall update or submit an O&M Plans by (3 months after DATE OF RULE ADOPTION) or within three (3) months of becoming subject to



the rule and submit it to the Control Officer for approval. The plan shall describe the method(s) used to achieve full compliance with the rule and dates for completing increments of progress, such as the contractual arrival date of new control equipment. The Control Officer may require an owner and/or operator submitting the compliance plan to also submit subsequent reports on progress in achieving compliance; and.

- 402.2b.** The Control Officer shall take final action on an O&M Plan revision/update to address the newly amended provisions of this rule within 30 calendar days of the filing of the complete O&M Plan revision/update. The Control Officer shall notify the applicant in writing of his approval or denial; and
- c.** **Compliance Date:** Attain full compliance with all of the standards in this rule by (12 months after DATE OF RULE ADOPTION) or within twelve (12) months of becoming subject to the rule.

SECTION 500

501 RECORDKEEPING AND REPORTING: ~~Any person~~ An owner and/or operator subject to this rule shall comply with the following requirements of subsections 501.1 and 501.2 that apply to materials regulated by this Rule 336. Records shall be retained for five 5- (5) years and shall be made available to the Control Officer upon request. Records can consist of but are not limited to purchase orders, invoices, receipts, usage records, MSDS, and hazardous wastes manifests. . Records may be kept in either electronic or paper format.

501.1 Current Lists: Operational information required by this rule shall be kept in a complete and consistent manner on-site and be made available without delay to the Control Officer upon request.

501.2 Records of the following process and operational information, as applicable, are required. Express VOC content in 1 of 3 forms: pounds VOC per gallon, grams VOC per liter, or the percent VOC by weight along with the specific gravity or density, (2 numbers are required).

- a. General Data:** Daily records shall be kept for all days that a facility is actively operating. Records shall include all of the following:

- (1) Hours of operation;
- (2) Type of operation;
- (3) Mixing Ratio: The mix ratio of the VOC-containing materials.

b. Surface Coatings, Fiberglass and Adhesives Used:

- a-** Maintain a current list of surface coatings, adhesives, reducers, thinners, gun-cleaning materials, additives, fiberglass coatings and any other VOC-containing materials regulated by this rule; ~~give~~ List the VOC content of material for each as received (before thinning). A complete, neat assemblage of this data meets the requirements for a list. Express VOC content in 1 of 3 forms: pounds VOC per gallon, grams VOC per liter, or the percent VOC by weight along with the specific gravity or density, (2 numbers are required). The VOC content of each coating as received, minus exempt compounds. (This figure is sometimes called the "EPA Method 24" VOC content on manufacturer's data sheets). If the coating is a multi-part coating, list the VOC content which the manufacturer states the coating will have once all the necessary parts are mixed together in the proportions specified by the manufacturer.

- b-c. Less Stringent Recordkeeping for Consistently Low Users:** An owner and/or operator of a facility that always uses less than 2 gallons per day total of thinner and coating (listed in Table 4336-1 through 336-3), meets the listing and recording requirements of subsections 501.1a, Sections 501.2 (a) (b) if:

- (1) All purchase receipts/invoices of VOC-containing material that ~~is~~ are regulated by this rule for the most recent 12 months are kept together; and



- (2) Current data sheets show the VOC content of material for every VOC containing substance currently used that is regulated by this rule.

e.d. Facilities That Are Not Small Surface-Coating Sources: Facilities that are not small surface-coating sources shall do the following:

- (1) **Coatings:** For all coatings (except those recorded under the ~~subsection 305.4e~~ low usage allowance provisions (Section 501.2 (c) of this rule), make the following listings for coatings, manufacturing materials, and adhesives that have VOC limits in Table 4 336-1 through 336-7:
 - (a) **VOC Before Reducing:** The VOC content of each coating as received, minus exempt compounds. (This figure is sometimes called the “EPA Method 24” VOC content on manufacturer’s data sheets). If the coating is a multi-part coating, list the VOC content which the manufacturer states the coating will have once you have mixed all the necessary parts together in the proportions specified by the manufacturer.
 - (b) **List Maximum VOC Content of Coating as Applied:** For each coating that you thin/reduce or add any additive to, record in a permanent log either of the following:
 - (i) The maximum number of fluid ounces thinner/reducer that you ever add to a gallon of unreduced coating (or maximum g/liter), and the maximum fluid ounces of every other additive you mix into a gallon of the coating; or
 - (ii) The VOC content of the coating, after adding the maximum amount of thinner/reducer and other additives that you would ever add, as determined by the formula in ~~subsection 255.1~~ Section 500 of this rule.

e. Polyester Resin Operations:

- (1) **Applications:** The type of nonatomizing application, or other in the case of gel coat, application techniques(s) used, manufacturer’s names, and the records of the fluid tip, pressure calibration as specified by the manufacturer; and
- (2) **Materials and VOC Content:** The manufacturer’s name, the type and amount of each of the polyester resin basic raw materials used, delivered and the weight (in percent) of monomer for all polyester resin materials and filler(s). If VOC-containing materials are added to the polyester resin, the amount of VOC-containing materials, in grams, and the VOC content in grams per liter, of VOC-containing materials; and
- (3) **Tub/Shower Resins:** Certification of analysis from the resin manufacture(s) to verify that all the applied tub/shower resin materials are vapor suppressed; and
- (4) **Pultrusion systems:** For pultrusion systems, the weight loss (in percent) of polyester resins materials for each application; and

501.3 Applicator Cleanup Solvent: Have a hardcopy of the VOC vapor pressure (VP) at 20°C (68°F) of solvent(s) used to clean spray guns, hoses, reservoirs, and any other coating application equipment. Any one of the following ways of providing the VP data is sufficient:

- ~~(a.)~~ A current manufacturer’s technical data sheet;
- ~~(b.)~~ A current manufacturer’s safety data sheet (MSDS);
- ~~(c.)~~ Actual test results; or
- ~~(d.)~~ A letter signed by an official or lab manager of the supplying facility.

501.2501.4 Frequency of Updating Usage Records: Update your records, showing the type and amount used of each VOC-containing coating, manufacturing materials, or adhesive which is regulated by name or type in ~~Table 4~~ the Tables 336-1 through 336 -7 of these rules, and update each VOC-containing material, ~~related to surface coating~~, that is not addressed by ~~Table 4~~ in the Tables found



in Rule 336 of these rules. This includes, but is not limited to, thinners, surfacers, and diluents. Maintain records according to the following schedule:

- a. **Small Surface-Coating Sources:** Small surface-coating sources shall update each month's records of coating use by the end of the following month.
- b. **All Other Sources:** For a source that does not meet the definition of small surface-coating source:
 - (1) **Monthly:** Monthly update records of each coating or manufacturing material or adhesive used that complies with the VOC limits in ~~Table 1~~ this Rule 336. Complete a month's update by the end of the following month.
 - (2) **Daily:** ~~Daily update the usage of each coating that exceeds its limits in Table 1, including coating exempted by subsection 305.4c.~~

501.3501.5 Grouping by VOC Content: For purposes of recording usage, coatings, manufacturing materials, and adhesives that are in the same category in ~~Table 1~~, and have similar VOC content, may be recorded under a name that includes the category name. The highest VOC content among the members of that grouping shall be assigned to that grouping, rounded to the nearest 10th of a pound. To identify what products belong within each group, after each group name and the group's VOC content of material must appear the name of each product in the group and its VOC content of material.

For example: For flexible plastic parts, you use 20 gallons of primer that has 3.04 lb VOC/gal., 30 gallons of primer having 3.14 lb VOC/gal., and 40 gallons of primer having 2.89 lb VOC/gal. You may record usage as 90 gallons of flexible plastic primer containing 3.1 lb VOC/gal. If grams VOC per liter is used to record VOC content, round off to the nearest whole number of grams.

502 ECS RECORDING REQUIREMENTS:

- 502.1** On each day an ECS is used at a facility pursuant to this rule, an owner or operator of the facility shall:
- a. Record the amount and VOC content of coating, the amount of catalyst/hardener, and the amounts of solvent, reducer, and diluent used that were subject to ECS control pursuant to this Rule 336; and
 - b. Make a permanent record of the operating parameters of the key systems as required by the O&M Plan; and
 - c. Make a permanent record of the maintenance actions taken, within 24 hours of the action's completion, for each day or period in which the O&M Plan requires that maintenance be done.
- 502.2.** An explanation shall be entered for scheduled maintenance that is not performed during the period designated for it in the O&M Plan.

503 COMPLIANCE DETERMINATION AND TEST METHODS: ~~When more than one test method is permitted for a determination, an exceedance of the limits established in the rule determined by any of the applicable test methods constitutes a violation of this rule.~~

An exceedance of the limits established in this rule determined by any of the applicable test methods constitutes a violation of this rule. The EPA and the American Society for Testing and Materials (ASTM) test methods and other documents as they exist in the Code of Federal Regulations (CFR) as listed below, are adopted and incorporated by reference in Appendix G of the Maricopa County Air Pollution Control Regulations. These documents are available Maricopa County Air Quality Department, 1001 N. Central Ave., Phoenix, AZ 85004; or by calling (602) 506-0169 for information. ASTM methods are also available from the American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, or from its website at www.astm.org.

- 503.1 Compliance Determination:** The following means shall be used to determine compliance with this rule:



- a. Measurement of VOC content of materials subject to ~~Section~~ Sections 301 or Section 302 through 304 of this rule shall be conducted and reported using one of the following means:
- (1) BAAQMD Method 31, 503.2f or 503.2g, [April 15, 1992]; or (SCAQMD Method 313-91, 503.2g [April 1997]).: VOC content of coatings, solvents, and other substances having less than 5% solids ~~will be determined by the test method in subsection 503.2f or 503.2g (BAAQMD Method 31 [April 15, 1992]) or 503.2g (SCAQMD Method 313-91 [April 1997]).~~
 - (2) EPA Method 24, 503.2c; (BAAQMD Method 31, 503.2f [April 15, 1992]); or 503.2g (SCAQMD Method 313-91 [April 1997]). The VOC content of coatings or other materials having 5% or more solids. ~~will be determined by the test method in subsection 503.2c (EPA Method 24), 503.2f (BAAQMD Method 31 [April 15, 1992]) or 503.2g (SCAQMD Method 313-91 [April 1997]).~~
 - (3) Plastisols, powder coatings, and radiation-cured coatings shall be cured according to the procedures actually used in the coating process being tested before final VOC-emission determinations are made.
 - (4) In the case of multi-component, polymerizing coatings tested according to 503.1a, Method 24 shall be modified to eliminate the post-mixing dilution-step (that employs toluene or other solvent). Instead, the mixture shall be spread by appropriate technique to form a thin layer, occupying the entire bottom of the foil pan. Techniques included in the method referenced in 503.1b can be used as a guide for such spreading.
- b. EPA Method 18 referred to in subsection 503.2b, or EPA Method 25 and its submethod, referred to in subsection 503.2d. The VOC content of gaseous emissions entering and exiting an ECS. ~~shall be determined by either EPA Method 18 referred to in subsection 503.2b, or EPA Method 25 and its submethod, referred to in subsection 503.2d.~~
- c. EPA Method 204 (503.2e) and its submethods, or by using mass balance calculation methods in concert with the methods in 503.2a (EPA Methods 2, 2a, 2c, and 2d).

Capture efficiency of an ECS. ~~shall be determined either by the methods in 503.2e (EPA Method 204 and its submethods), or by using mass balance calculation methods in concert with the methods in 503.2a (EPA Methods 2, 2a, 2c, and 2d).~~
- d. **Spray-Gun Tip Pressure Measurement:** Upon request by the Control Officer, the measurement of air pressure of an air atomized spray-gun shall be demonstrated by any of the following methods:
- (1) Operating the air atomized spray-gun using an air pressure tip gauge supplied by the manufacturer of the spray-gun. This gauge is an attachable device that is in proper working order and supplied by the gun's manufacturer for performing such a measurement. The measurement of the air pressure shall be made dynamically at the center of the air cap and at the air horns.
 - (2) Identifying a permanent mark on the spray-gun provided by the manufacturer that confirms the maximum inlet air pressure of the spray-gun.
 - (3) Providing the maximum inlet air pressure of the spray-gun in writing from the manufacturer of the spray-gun on their letterhead and documented with manufacturer's technical literature.
- e. Temperature measurements shall be done with an instrument with an accuracy and precision of less than one-half degree Fahrenheit (0.25°C) for temperatures up to 480°F (250°C).
- f. **SCAQMD Method 312-91, Determination of Percent Monomer in Polyester Resins and Gel Coat materials, revised April 1996. Alternatively, the manufacturer's formulation of data may be accepted as an alternative to this method. If there is a disagreement between manufacturer's formulation data and the results of a subsequent test, the facility should use the**



test method results unless the facility can make a demonstration that the manufacturer's formulation data is correct.

503.2 Test Methods Adopted By Reference: The EPA test methods as they exist in the Code of Federal Regulations (CFR) (July 1, 1998), as listed below, are adopted by reference. The other test methods listed here are also adopted by reference, each having paired with it a specific date that identifies the particular version/revision of the method that is adopted by reference. These adoptions by reference include no future editions or amendments. Copies of test methods referenced in this Section 503 are available at the Maricopa County Air Quality Department, 1001 N. Central Ave., Phoenix, AZ, 85004.

- a. EPA Methods 2 (“Determination of Stack Gas Velocity and Volumetric Flow Rate”), 2a (“Direct Measurement of Gas Volume Through Pipes and Small Ducts”), 2c (“Determination of Stack Gas Velocity and Volumetric Flow rate in Small Stacks or Ducts”), and 2d (“Measurement of Gas volumetric Flow Rates in Small Pipes and Ducts”). All 4 of the foregoing methods are in 40 CFR 60, Appendix A.
- b. EPA Method 18 (“Measurement of Gaseous Organic Compound Emissions by Gas Chromatography”) and its submethods (40 CFR 60, Appendix A).
- c. EPA Test Method 24 (“Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings”) (40 CFR 60, Appendix A).
- d. EPA Method 25 (“Determination of Total Gaseous Non-methane Organic Emissions as Carbon”) and its submethods (40 CFR 60, Appendix A).
- e. EPA Test Methods 204 (“Criteria for and Verification Of a Permanent or Temporary Total Enclosure”), 204a, 204b, 204c, 204d, 204e, and 204f (Appendix M, 40 CFR 51).
- f. California’s Bay Area Air Quality Management District (BAAQMD) Method 31 (April 15, 1992), “Determination of Volatile Organic Compounds in Paint Strippers, Solvent Cleaners, and Low Solids Coatings.”
- g. California’s South Coast Air Quality Management District (SCAQMD) Method 313-91 (April 1997).

503.3 Test Methods for ECS: For coatings/adhesives controlled pursuant to Section 305 of this rule.

- a. Measurements of VOC emissions from an ECS shall be conducted in accordance with EPA Methods 18 or its submethods, or by Method 25 or its submethods (40 CFR 60, Appendix A).
- b. Capture efficiency of an ECS shall be determined by mass balance in combination with ventilation/draft rate determinations done in accordance with subsection 503.3c or with US EPA Test Methods 204, 204a, 204b, 204c, 204d, 204e, and 204f (Appendix M, 40 CFR 51).
- c. Ventilation/draft rates shall be determined by EPA Methods 2, 2a, 2c, and 2d (40 CFR 60, Appendix A).

503.4 Test Methods for ECS: For Polyester Resin Operations controlled pursuant to section 305 of this rule.

- a. “Guidelines for Determining Capture Efficiency”, January 9, 1995, Candace Sorrell, Source Characterization Group A, Office of Air Quality Planning and Standards, US EPA; or
- b. EPA Reference Method 204 – Criteria for and Verification of a Permanent or Temporary Total Enclosure, 40 CFR 51, Appendix M; or applicable Subparts 204A, 204B, 204C, 204D, 204E, or 204F; or
- c. EPA Reference Method 18 – Measurement of Gaseous Organic Compound Emissions by Gas Chromatography, 40 CFR 60, Appendix A; or
- d. EPA Reference Method 25 – Determination of Total Gaseous Nonmethane Organic Emissions as Carbon, 40 CFR 60, Appendix A; or applicable Subparts 25A or 25B.



504 FORMULA FOR TOTAL VOC VAPOR PRESSURE/VOC COMPOSITE PARTIAL PRESSURE:

$$PP_c = \frac{\sum_{i=1}^n (W_i)(VP_i)/MW_i}{\frac{W_w}{18} + \sum_{j=1}^m \frac{W_{ej}}{MW_{ej}} + \sum_{i=1}^n \frac{W_i}{MW_i}}$$

- W_i = Weight of the “i”th VOC compound in grams
- W_w = Weight of water in grams
- W_{ej} = Weight of the “j”th non-precursor compound in grams
- MW_i = Molecular weight of the “i”th VOC compound in grams per gram mole, e.g., one gram-mole of isopropyl alcohol weighs 60 grams
- MW_{ej} = Molecular weight of the “j”th non-precursor compound, e.g., 1 gram-mole of acetone weighs 58 grams
- PP_c = VOC composite partial pressure at 20°C in mm mercury (Hg)
- VP_i = Vapor pressure of the “i”th VOC compound at 20°C in mm Hg
- 18 = Weight of one gram-mole of water

505 VOC CONTENT: VOC content is determined by one of the following two formulas:

505.1 VOC CONTENT MINUS EXEMPT COMPOUNDS (VOC CONTENT MINUS EXEMPT EVAPORATING COMPONENTS or “EPA METHOD 24 VOC CONTENT” on manufacturer’s data sheets.)

$$\text{VOC Content Minus Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Using consistently either English or metric measures in the calculations, where:

- W_s = weight of all volatile material in pounds (or grams), including VOC, water, non-precursor organic compounds and dissolved vapors
- W_w = weight of water in pounds (or grams)
- W_{es} = weight of all non-precursor compounds in pounds (or grams)
- V_m = volume of total material in gallons (or liters)
- V_w = volume of water in gallons (or liters)
- V_{es} = volume of all non-precursor compounds in gallons (or liters)

505.2 VOC CONTENT OF MATERIAL (MATERIAL VOC-CONTENT)



$$\text{VOC Content of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Using consistently either English or metric measures in the calculations, where:

W_s = weight of all volatile material in pounds (or grams) including VOC, water, non-precursor organic compounds and dissolved vapors

W_w weight of water in pounds (or grams)

W_{es} weight of all non-precursor compounds in pounds (or grams)

V_m volume of total material in gallons (or liters)

Maricopa County VOC Rules

DRAFT RULE 336

Polyester Resin and Boat Manufacturing Operations, Miscellaneous Surface Coating, Industrial Adhesives and Primers Operations

Stakeholder Workshop 2

Kathleen Sommer
September 3, 2015



**Rule 336: Polyester Resin and Boat Manufacturing Operations,
Miscellaneous Surface Coating, Industrial Adhesives and Primers Operations**

Update of Rule 336

Three Additional VOC Sources

- 1. POLYESTER RESIN OPERATIONS**
- 2. PLEASURE CRAFT and FIBERGLASS BOAT and PARTS MANUFACTURING AND REPAIR**
- 3. INDUSTRIAL ADHESIVES AND PRIMERS**

Rule 336: Surface Coating Operations

(Misc.) SURFACE COATING OPERATIONS

(Last revised September 20, 1999)



Rule 336: Polyester Resin and Boat Manufacturing Operations, Miscellaneous Surface Coating, Industrial Adhesives and Primers Operations

Control Technology Guidelines (CTG)s

Surface Coating Operations

Large Appliance Coatings, September, 2007.

Metal Furniture Coatings July 2007.

Miscellaneous Metal and Plastic Parts Coatings September, 2008

Industrial Cleaning Solvents, September 2006.

Paper, Film and Foil Coatings, September 2006.

Adhesives and Adhesive Primers

Miscellaneous Industrial Adhesives, September 2006

Polyester Resin Operations

Fiberglass Boat Manufacturing Materials, September 2008

Pleasure Craft Manufacturing and Repair

Miscellaneous Metal and Plastic Parts Coatings September, 2008



* **Rule 336: Polyester Resin and Boat Manufacturing Operations, Miscellaneous Surface Coating, Industrial Adhesives and Primers Operations**

103.1 Polyester Resin Operations Facility Exempt for Low VOC Usage:

15 lbs. VOC /day = 2 tons/year

Cal. Rules RACT (EPA) 20 gal.mo / 20 days /month = 6.5 lbs.day

1 ton /year Rule Exemption



Surface Coating – Xylene/VOC Calculation

Process: Surface coating – spray painting

SCC: 40200101

Pollutant: Xylene, VOC (non-HAP)

Paint: Acrylic Red



MATERIAL SAFETY DATA SHEET

ACRYLIC RED TOP COAT Page: 1

PRODUCT NAME: ACRYLIC RED PRODUCT CODE: 007

SECTION I -MANUFACTURER IDENTIFICATION

MANUFACTURER'S NAME: XYZ Paint Company ADDRESS: Any Street

Oklahoma City, OK 73101 REVISION DATE: August 1, 2007 EMERGENCY

PHONE: 1-800-999-9999 DATE PRINTED: 8/29/2007 INFORMATION PHONE : 1-800-999-9999

SECTION II -HAZARDOUS INGREDIENTS/SARA III INFORMATION

REPORTABLE COMPONENTS	CAS NUMBER	VAPOR PRESSURE		WEIGHT PERCENT
		mm Hg	@Temp	
Xylene	1330-20-7	21	100	8.0
Toluene	108-88-3	22	68	0.0
MEK	78-93-3	23	72	2.0
SILICA	14808-60-7	0	0	75.0
VOCs		21	100	25.0

SECTION III -PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT: 180 deg F SPECIFIC GRAVITY (H2O=1): 1.34 VAPOR DENSITY: HEAVIER THAN AIR

EVAPORATION RATE: LOWER THAN ETHER

COATING V.O.C.: 8.75 lbs/gal MATERIAL 8.75 lbs/gal SOLUBILITY IN WATER: NEGLIGIBLE

APPEARANCE AND ODOR: CLEAR AND PIGMENTED COATINGS WITH CHARACTERISTIC ODOR

SECTION IV -FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 67 Deg F METHOD USED: TCC FLAMMABLE LIMITS IN AIR BY VOLUME- LOWER: .9 UPPER:

12 EXTINGUISHING MEDIA: USE APPROVED CLASS B FIRE EXTINGUISHER OR EXTINGUISHING SPECIAL

FIREFIGHTING PROCEDURES:

FULL PROTECTIVE EQUIPMENT INCLUDING SELF-CONTAINED BREATHING APPARATUS IS RECOMMENDED TO PROTECT FROM COMBUSTION BY-PRODUCTS. COOL CLOSED CONTAINERS WITH WATER FOG TO PREVENT PRESSURE BUILDUP.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

KEEP CONTAINERS TIGHTLY CLOSED. VAPOR IS DENSER THAN AIR AND CAN TRAVEL AND COLLECT IN LOW SPOTS. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS AND OPEN FLAME. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. DO NOT APPLY TO HOT SURFACES. CAN CAUSE SPONTANEOUS COMBUSTION. (CONTAMINATED RAGS, ETC.)

$$*E = A * \text{VOC Content} * (\text{Xylene:VOC Ratio}) = \text{??? tons}$$

$$\text{Total VOC} = 800 \text{ gal} * \frac{8.75 \text{ lbs}}{\text{gal}} = 7,000 \text{ lbs} = 3.5 \text{ tons}$$

$$\text{Xylene} = 3.5 \text{ tons} * \frac{0.08}{0.25} = \text{1.12 tons}$$

Now, for non-HAP VOC:

$$\text{VOC (non-HAP)} = \text{Total VOC} - \text{Xylene}$$

$$\text{VOC (non-HAP)} = 3.5 \text{ tons} - 1.12 \text{ tons} = \text{2.38 tons}$$

Rule 336: Polyester Resin Operations, Boat Manufacturing, Miscellaneous Surface Coating, Industrial Adhesives and Primers Operations

TABLE 336-2: PLEASURE CRAFT SURFACE COATING VOC CONTENTS LIMITS:

<u>Coating category</u>	<u>g. VOC/l. coating (ACA)</u>	<u>lbs VOC/gal.coating</u>
<u>Extreme High Gloss Topcoat</u>	<u>490</u>	<u>4.1</u>
<u>High Gloss Topcoat</u>	<u>420</u> (600)	<u>3.5</u>
<u>Pretreatment Wash Primers</u>	<u>780</u>	<u>6.5</u>
<u>Finish Primer/Surfacer</u>	<u>420</u> (600)	
<u>High Build Primer Surfacer</u>	<u>340</u>	<u>2.8</u>
<u>Aluminum Substrate Anti-foulant Coating</u>	<u>560</u>	<u>4.7</u>
<u>Other Substrate Anti-foulant Coating</u>	<u>330</u> (400)	<u>2.8</u>
<u>All other Pleasure craft surface coatings for metal or plastic</u>	<u>420</u>	
<u>Antifouling Sealer/Tie Coat (new category)</u>	<u>420</u>	<u>3.5</u>



Polyester Resin and Boat Manufacturing Operations, Miscellaneous Surface Coating, Industrial Adhesives and Primers Operations

Thank you for participating in the rulemaking process!

EROP

<http://www.maricopa.gov/aq/>

“Follow the Regulatory Process”

“Air Quality”

“Follow the Regulatory Process”

AQ-2015-005: Rule 336 Surface Coating Operations

Corky Martinkovic

Planning & Analysis Division Manager

602-506-6731

CorkyMartinkovic@mail.maricopa.gov

Kathleen Sommer

Planning & Analysis Division Rulewriter

602-506-6706

KathleenSommer@mail.maricopa.gov



Maricopa County

Air Quality Department

*Thank you.



Maricopa County
Air Quality Department

Rev 9/22/2015



Enhanced Regulatory Outreach Program
Maricopa County Air Quality Department

Stakeholder Workshop: Summary
AQ-2015-005-Rule 336 (Surface Coating Operations)
September 3, 2015

Attendees:

13 Stakeholders attended: SRP, Earl's Fiberglass Inc, Phoenix Fiberglass, APS, NA Composites, Sav-On Plating, JKM Holding, AEM Consulting, Pinal County, City of Phoenix, Gila River Power, American Coatings Association

7 Staff attended: Scott Treece-Permitting Division, Kristi Beck-Compliance Division, Yvonne Bishara-Compliance Division, Geoff Sylvester-P&A Division, Corky Martinkovic-P&A Division, Kathleen Sommer-P&A Division, and Johanna Kuspert-P&A Division

Comments:

Regarding Applicability:

1. Clarify Rule 336 applies to "manufacturing" of both the complete structure and individual parts as well as the "repair and maintenance" of the structure or parts
2. Industrial adhesives: Are industrial adhesives regulated in any other county rule or are adhesives addressed only in this Rule 336?
3. Are there "industrial adhesives" specific for "manufacturing"? Reviewing the Control Techniques Guideline (CTG) re: "maintenance adhesives" and "manufacturing"

Regarding Exemptions:

4. Reorganize and separate out for easy reference all exemptions that are based on material usage (lb/gal) or total facility usage (annual usage) as opposed to a specific operational type of exemption
5. Section 103: Clarify when exemptions are from only the VOC limits or from everything in the rule including things like work practices, etc.
6. Sections 102.3 and 103.3: Clarify and define "industrial adhesives" vs. "adhesives"
7. Sections 103.2(l) & 103.3(e): Clarify the aerosol adhesive exemption and the aerosol can exemption for surface coating
8. Section 103.3(f): Are sources being asked to track use of adhesives in their Maintenance Departments?
9. Section 103.3(f): Are caulking tubes exempt?
10. Section 103.2(l): 22 ounces is the current limit for aerosol can exemption but businesses offer 25 ounces. Do businesses still have to track use?
11. Section 103.2(m): Clarify low-usage facility, if using less than 55 gallons per year for surface coating and explain if surface coating operations for maintenance are considered "trivial"

Regarding Standards:

12. National Emission Standards for Hazardous Air Pollutants (NESHAPs) & Maximum Achievable Control Technology (MACT) - HAPs and/or VOCs: How do they compare for these operations, for example, fiberglass boat MACT and CTG limits are comparable but what about the other operations?

13. Polyester Resin VOC limits are from the California rules but Region 9 rules are far more stringent; CTGs do not address polyester resin operations. If we are addressing the “reasonable” aspect of Reasonably Available Control Technology (RACT), then why should we have the strictest rule in the country for polyester resin operations? Per the Stakeholders, if Maricopa County adopted MACT, they could live with it
14. Adhesive – plastic to wood: Is this regulated by Rule 336?
15. Section 301.1, Tables 1- 3: Polyester resin limits are from the California rules with the same attainment area designation as Phoenix
16. Table 336-3: Reviewing the NESHAP composite limits for HAPS (tooling resin) (55% monomer) and comparing to (39% monomer) in Table 336-3
17. Section 302.1, Tables 4-13: Format of surface coating VOC limits encourages low VOC material usage as well as allows use of higher VOC products with an Emissions Control System (ECS)
18. Only two of the surface coating limits from the CTG are lower than what is in current Rule 336 - large appliances and paper coatings
19. Section 304: 90% capture and control - Emission Control System (ECS) is stricter than what is in the current rule and is required by the CTGs
20. Section 305.3: Will be moved to “Exemptions” section
21. Section 306: Solvents (for cleaning operations) are 0.21 lbs per gallon which is lower than the current limit
22. Section 306.1(e): Spray gun cleaning requirements apply to polyester resin operations for touch-up and repair
23. Section 401: Compliance schedule is upon Board of Supervisors’ adoption of Rule 336; if materials are left on-site, then rule will build-in a transition schedule for having such materials removed from the site and no longer used on-site
24. Tables 1 – 3: This rule applies to manufacturing after-market devices for a boat. Would it be inconsistent with the Maximum Achievable Control Technology (MACT) and which limits apply? The CTG does not address this
25. Table 336-2: American Coatings Association commented that some of the limits are too low
26. Table 336-4: Define the terms “architectural high performance”, “prefabricated architectural”, “metal parts”, and “contact adhesives”

Next Steps:

In addition to re-drafting the rule to address text changes mentioned at the workshop, Maricopa County will do the following:

- RACT: Maricopa County will do more research re: RACT to determine if the limits in the tables are beyond RACT
- VOC limits: Maricopa County will benchmark other agencies to see how they regulate VOCs re: surface coating operations, polyester resin operations, or adhesives and what their VOC limits are
- CTGs: Maricopa County will prepare a chart that shows the text from the CTGs that was written into the draft rule and where in the draft rule such text was written