

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

**RULE 345
MOTOR VEHICLE AND MOBILE EQUIPMENT COATING**

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

**RULE 345
MOTOR VEHICLE AND MOBILE EQUIPMENT COATING**

SECTION 100 – GENERAL

101 PURPOSE: To limit emissions of volatile organic compounds (VOCs) from motor vehicle and mobile equipment coating and surface preparation operations.

102 APPLICABILITY:

102.1 The provisions of this rule apply to any owner or operator, who leases, operates or controls a motor vehicle and/or mobile equipment coating operation that applies coatings to motor vehicles and/or mobile equipment. The provisions of this rule do not apply to automobile and light duty truck assembly coating operations.

102.2 NSPS & NESHAP: In addition to this rule, facilities may be subject to New Source Performance Standards (NSPS) in Rule 360 of these rules and/or to National Emission Standards for Hazardous Air Pollutants (NESHAP) [40 CFR Part 63, Subpart 6-H] in Rule 370 of these rules.

102.3 Coating Individual Parts: An owner or operator who exclusively coats separate motor vehicle parts or mobile equipment parts that have never been installed since manufacture or remanufacture are subject to Rule 336 (Surface Coating Operations) of these rules. Replacement for a defective/missing vehicle body part installed in the course of refinishing the vehicle body is subject to Rule 345.

103 EXEMPTIONS:

103.1 Use of Low VOC Materials: This rule does not apply to an owner or operator who uses a coating or solvent that has a VOC content, minus exempt compounds, less than 0.15 lbs VOC per gallon (18 g VOC/liter).

103.2 Coating with an Aerosol Spray Can Coating: An owner or operator who uses an aerosol spray can coating is not subject to the VOC limits (Section 301 of this rule) and application requirements (Section 303 of this rule). Aerosol spray can coating records shall be kept according to Section 501.7 of this rule.

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 Definitions) 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 AEROSOL SPRAY CAN COATING:** A coating sold in a hand-held, pressurized, non-refillable container of less than 22 fluid ounces (0.66 liter) capacity and that is expelled from the container in a finely divided form when a valve on the container is depressed.
- 202 AIRLESS AND AIR-ASSISTED AIRLESS SPRAY:** Any paint spray technology that relies solely on the fluid pressure of the paint to create an atomized paint spray pattern and does not apply any atomizing compressed air to the paint before it leaves the paint nozzle. Air assisted airless spray uses compressed air to shape and distribute the fan of atomized paint, but still uses fluid pressure to create the atomized paint.
- 203 AUTOMATIC SPRAY GUN CLEANING MACHINE (GUN CLEANER):** A machine which, after being loaded, cleans paint spray guns without the assistance of a person.
- 204 BUS:** Motor vehicle designed primarily for the transportation of persons with a manufacturer's gross vehicle weight of greater than 8600 pounds and a design capacity of over 12 persons.
- 205 CLEAR COATING (LIGHT & HEAVY DUTY VEHICLES):** Any coating without pigments that is labeled and formulated for application over a color coating or another clear coating.
- 206 COLOR COATING (LIGHT & HEAVY DUTY VEHICLES):** Any pigmented automotive coating which contains the visual properties of color and effects and is usually the coating referred to as the paint or "Single-stage process" for purposes of this rule.
- 207 COATING AS APPLIED:** A coating at the time immediately prior to its application, including any final addition to the coating before such coating is applied.
- 208 COATING COMPONENT:** Any portion of a coating, such as a reducer, thinner, hardener, diluent or additive recommended (by the manufacturer or importer) to distributors or end-users for motor vehicle refinishing. The raw materials, such as polyurethane resin, used to produce the coating component which are mixed by the end user to prepare a coating for application are not considered coating components.
- 209 DAY:** A period of 24 consecutive hours beginning at midnight.
- 210 DETAILING GUNS AND TOUCH-UP GUNS:** Small air spray devices, including air brushes, that operate at no greater than 6 cfm (170 liters per minute) air flow and no greater than 50 psig (3.4 bar) air pressure and are used to coat small areas.
- 211 DILUENT:** Any fluid in or added to a coating such as thinner, retarder, reducer, solvent, or drying accelerator which solubilizes, adjusts concentration, viscosity, flow, or drying rates and which evaporates as the coating film solidifies and cures.
- 212 ELECTROSTATIC APPLICATION:** A method of applying coating by electrically charging coating droplets or particles with an electrical device, causing their deposition onto a substrate by electrostatic attraction.

- 213 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 VOC. Such system consists of an emissions collection subsystem and an emissions processing subsystem.
- 214 ENAMEL:** Any non-lacquer coating.
- 215 FLEXIBLE PLASTIC:** A surface or part made of solid (non-rubber) polymer designed to withstand significant deformation without damaging it for its intended use.
- 216 HARDENER:** A coating component specifically designed to promote a faster cure of an enamel finish.
- 217 HEAVY DUTY VEHICLE:** A vehicle with a manufacturer's gross vehicle weight rating of more than 8600 lbs that is licensable for highway travel and consists of the following categories:
- 217.1** Large trucks;
 - 217.2** Buses;
 - 217.3** Construction equipment, such as earthmovers, tractors, diggers, mobile cranes, bulldozers, and concrete mixers;
 - 217.4** Motor homes;
 - 217.5** Farm machinery, such as forklifts, tractors, and plows; and
 - 217.6** Miscellaneous equipment, such as street cleaners and recreational vehicles.
- 218 HIGH-VOLUME, LOW PRESSURE (HVLP) SPRAY GUN:** Spray equipment that is used to apply coating by means of a spray gun that operates at 10 psig of atomizing air pressure or less at the center of the air cap. A permanently affixed manufacturer's gun identification or manufacturer's gun literature shall identify and be proof of an HVLP gun.
- 219 IN-USE:** 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.
- 220 LACQUER:** A coating which becomes or remains soft when subjected to heat (thermoplastic), which dries primarily by solvent evaporation, and which is resoluble in its original solvent.
- 221 LIGHT DUTY VEHICLE:** A vehicle with a manufacturer's gross vehicle weight rating less than or equal to 8600lbs that is licensable for highway travel and consists of the following categories:
- 221.1** Automobiles (transport and capacity less than 12 persons);
 - 221.2** Small and medium-sized trucks and vans;
 - 221.3** Motorcycles; and
 - 221.4** Mobile equipment.

- 222 MIXING INSTRUCTIONS:** The manufacturer's specification of the quantities of coating components for mixing a coating, to combine two or more coating components to make one coating that is the same throughout or to combine two or more substances to make a different substance
- 223 MOBILE EQUIPMENT:** A light duty vehicle that is physically capable of being driven or drawn upon a highway and that is not eligible as or considered an automobile used for transportation on roads or highways, even if such mobile equipment is self-propelled. Mobile equipment includes, but is not limited to, the following types of equipment:
- 223.1** Hauling equipment, such as truck trailers, utility bodies, and camper shells;
 - 223.2** Miscellaneous equipment, such golf carts, all-terrain vehicles (ATVs), and mopeds; and
 - 223.3** Equipment used at airport, on docks, in depots, and industrial and commercial plants.
- 224 MOTOR VEHICLE:** A self-propelled vehicle for use on the public roads and highways of the State of Arizona and required to be registered under the Arizona State Uniform Motor Vehicle Act. Motor vehicles included but not limited to both light and heavy duty vehicles including any non-motorized attachments.
- 225 MOTOR VEHICLE AND/OR MOBILE EQUIPMENT COATING OPERATION:** Spray application of coatings for refinishing of assembled motor vehicles and/ or mobile equipment. It does not include the surface coating of motor vehicle or mobile equipment parts or subassemblies at a vehicle assembly plant or parts manufacturing plant.
- 226 MOTORCYCLE:** A motor vehicle, other than a tractor, having a seat or saddle for the use of the rider and designed to travel on not more than three wheels in contact with the ground and weighing less than 1500 pounds, except that four wheels may be in contact with the ground when two of the wheels are a functional part of a sidecar.
- 227 MULTI-COLORED PROCESS (LIGHT & HEAVY DUTY VEHICLES):** A process that exhibits more than one color when applied, is packaged in a single container, camouflages surface defects on areas of heavy use, and is applied over a primer or adhesion promoter.
- 228 PAINT STRIPPING:** The removal of dried coatings from wood, metal, plastic, and other substrates. A single source may have multiple paint stripping operations.
- 229 PRETREATMENT COATING:** Any coating that contains a minimum of one-half (0.5) percent acid by weight and not more than 16 percent solids by weight necessary to provide surface etching and is labeled and formulated for application directly to bare metal surfaces to provide corrosion resistance and adhesion.
- 230 PRIMER (HEAVY DUTY VEHICLES):** Any coating, including both sealers and surfacers, which is labeled and formulated for application to a substrate to provide:
- 230.1** A bond between the substrate and subsequent coats;

- 230.2 Corrosion resistance;
 - 230.3 A smooth substrate surface; or
 - 230.4 Resistance to penetration of subsequent coats, and on which a subsequent coating is applied. Primers may be pigmented.
- 231 **PRIMER-SEALER (LIGHT DUTY VEHICLES):** Any coating applied prior to the application of a final coating for the purpose of corrosion resistance, adhesion of the coating, and/or color uniformity and to promote the ability of an undercoat to resist penetration by the coating.
- 232 **PRIMER-SURFACER (LIGHT DUTY VEHICLES):** Any coating applied prior to the application of a final coating for the purpose of filling surface imperfections in the substrate, corrosion resistance, and/or adhesion of the coating.
- 233 **REDUCER:** Any solvent used to thin coatings.
- 234 **REFINISH, REFINISHING:** Recoating of previously paint-finished parts of a motor vehicle.
- 235 **SINGLE-STAGE PROCESS (LIGHT & HEAVY DUTY VEHICLES):** Any pigmented automotive coating, excluding automotive adhesion promoters, primers and multi-color coatings, specifically labeled and formulated for application without a subsequent clear coating and that is applied over an adhesion promoter, a primer.
- 236 **SPECIALTY COATING:** Any coating that is specifically designated by the coating manufacturer as being one or more of the following:
- 236.1 **Adhesion Promoter:** A coating designed to facilitate the bonding of a primer or coating on surfaces such as trim moldings, door locks, and door sills, where sanding is impracticable, and on plastic parts and the edges of sanded areas.
 - 236.2 **Bright Metal Trim Repair Coating:** A coating applied directly to chrome plated or other bright metal surface(s) to attain a desired appearance.
 - 236.3 **Cut-In, or Jambing, Clearcoat:** A fast-drying, ready-to-spray clearcoat applied to surfaces such as door jambs and trunk and hood edges to allow for quick closure.
 - 236.4 **Elastomeric Coating:** A coating designed for application over flexible parts, such as elastomeric bumpers.
 - 236.5 **Impact-Resistant Coating:** A specialty coating used on the lower 12 inches (31.6 cm) of a quarter-panel, door, or fender to resist chipping caused by road debris.
 - 236.6 **Low-Gloss Coating:** A coating which exhibits a gloss reading less than or equal to 25 on a 60° glossmeter.
 - 236.7 **Radar Dispersing Coating:** A coating designed to disperse radar signals, applied to any part of a military vehicle or military mobile equipment.
 - 236.8 **Truck Bed Liner Coating:** Any coating, excluding clear, color, multi-color, and single stage coatings, labeled and formulated for application to a truck bed to protect it from surface abrasion.

- 236.9 Underbody Coating:** A coating designed for protection and sound deadening that is typically applied to the wheel wells and underbody of an automobile.
- 236.10 Uniform Finish Blenders:** Any coating that is applied for the purpose of blending a paint overspray (“feathered”) area of a repaired coating to match the appearance of an adjacent existing coating.
- 236.11 Water Hold-Out Coating:** A coating applied to the interior cavity areas of doors, quarter panels and rocker panels for the purpose of corrosion resistance to prolonged water exposure.
- 236.12 Weld-Through Primer:** A primer that is applied to an area before welding is performed, and that provides corrosion resistance to the surface after welding has been performed.
- 237 SPOT REPAIR ON A HEAVY DUTY VEHICLE:** A repair of a damaged or uncoated area of a heavy duty vehicle in which not more than a total of 1 liter (1.1 quart) of coatings and a total of 1 liter of primers are used and such coatings are applied from a reservoir that can hold no more than 1.2 liters when completely full.
- 238 SPRAY-APPLIED COATING OPERATIONS:** 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:
- 238.1** Surface coating applications 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;
- 238.2** 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.
- 239 STRIPPABLE BOOTH COATING (LIGHT & HEAVY DUTY VEHICLES):** A temporary coating that is applied to a paint booth wall to provide a protective film to receive overspray during finishing operations and that is subsequently peeled off and disposed of.
- 240 STRIPPERS:** Powerful solvents used to dissolve permanent, cured coatings, usually to attain a bare substrate.
- 241 SURFACE PREPARATION FLUIDS:** VOC-containing fluids that are used to prepare a surface for further operations by aiding the removal of grime, greases, waxes, unwanted deposits and embedded particles from the surface. These materials include solvents used for surface preparation or cleaning.
- 242 THINNER:** Any solvent used to reduce the viscosity or solids content of a coating.
- 243 THREE-STAGE PROCESS (LIGHT & HEAVY DUTY VEHICLES):** A process composed of a pigmented color coating, a midcoat, and a transparent clearcoat.

- 244 **TOUCH-UP COATING:** A coating applied by brush, air-brush, or non-refillable aerosol can to cover minor surface damage.
- 245 **TRANSFER EFFICIENCY:** The ratio of the weight or volume of coating solids adhering to the part being coated to the weight or volume of coating solids as applied in the application process, expressed as a percentage.
- 246 **TWO-STAGE PROCESS (LIGHT & HEAVY DUTY VEHICLES):** A process consisting of a pigmented color coating and a transparent clear coating.
- 247 **VOC ACTUAL:** The weight of volatile organic compounds minus the weight water and minus the weight of exempt organic compounds divided by the total volume of the materials. Units of VOC actual are in pounds of VOC per gallon (or grams per liter) of material and shall be calculated using the following equation:

$$\text{VOC actual} = \frac{W_s - W_w - W_{es}}{V_m}$$

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 organic compounds in pounds (or grams)

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

- 248 **VOC CONTENT:** The organic chemicals in a material that have a vapor pressure at ordinary room temperature. This vapor pressure results from a low boiling point, which causes large numbers of molecules to evaporate or sublime from the liquid or solid form of the compound and enter the surrounding air. The term VOC content is a general term used throughout the rule and includes VOC actual and VOC regulatory.
- 249 **VOC REGULATORY:** The weight of volatile organic compounds minus the weight of water and minus the weight of exempt compounds divided by the volume of material minus the volume of water and minus the volume of exempt compounds. Units of VOC regulatory are in pounds of VOC per gallon (or grams per liter) of material and shall be calculated using the following equation:

$$\text{VOC regulatory} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

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 organic 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 organic compounds in gallons (or liters)

SECTION 300 – STANDARDS

301 VOC LIMITS, AS APPLIED:

301.1 Vehicle Coating:

- a. VOC content calculations are in Section 503 of this rule.
- b. Compliance will be determined based on the VOC content limit expressed in either metric units (grams VOC /l) or English units (lbs VOC/gal).
- c. **Spot Repair on Heavy Duty Vehicles:**
 - (1) The coating shall be applied from a reservoir having a gross volume not exceeding 1.2 liters (5 cups) and containing no more than 1 liter (1.1 qt.) of coating.
 - (2) The application of pretreatment coatings shall not exceed more than 1 liter.
 - (3) The application of primers shall not exceed more than 1 liter.
 - (4) The application of coatings shall not exceed more than 1 liter.
- d. **Uncoated Vehicle Surfaces:** New or never coated surfaces shall comply with the VOC limits of Table 345-3 of this rule, except that pretreatment acid etchant wash shall conform to the VOC limits of pretreatment coating as listed in Tables 345-1 and 345-2 of this rule.
- e. **Mixing Requirements:** An owner or operator who adds VOC-containing thinner, reducer, or diluent to any refinish coating regulated by Tables 345-1, 345-2, or 345-3 of this rule shall meet the applicable VOC limits found in such tables.

301.2 Light Duty Vehicle and Mobile Equipment Coating: An owner or operator shall not apply coating on a previously finished light duty vehicle or mobile equipment in Maricopa County unless the coating’s VOC content complies with the applicable limits in Table 345-1 of this rule, except if an owner or operator choses to use an ECS that reduces VOC emissions as provided in Section 302.3 of this rule.

**TABLE 345-1
VOC LIMITS (REGULATORY) FOR REFINISHES (COATINGS) APPLIED TO
LIGHT DUTY VEHICLES AND MOBILE EQUIPMENT**

Coating Category	Grams VOC per liter	Pounds VOC per gal
Clear coatings	600	5.0
Multi-colored processes	680	5.7
Pretreatment coatings	780	6.5
Primer sealers	550	4.6
Primer surfacers	580	4.8
Single-stage processes	600	5.0
Specialty coatings	840	7.0
Strippable booth coatings	420	3.5

Coating Category	Grams VOC per liter	Pounds VOC per gal
Three-stage processes or more	630	5.2
Two-stage processes	600	5.0

301.3 Heavy Duty Vehicle Coating: An owner or operator shall not apply coating on a previously finished heavy duty vehicle in Maricopa County unless the coating's VOC content complies with the applicable limits in Table 345-2 of this rule, except if an owner or operator chooses to use an ECS that reduces VOC emissions as provided in Section 302.3 of this rule.

**TABLE 345-2
VOC LIMITS (REGULATORY) FOR REFINISHES (COATINGS) APPLIED TO
HEAVY DUTY VEHICLES**

Coating Category	Grams VOC per liter	Pounds VOC per gal
Clear coatings	420	3.5
Multi-colored processes	680	5.7
Pretreatment coatings	780	6.5
Primers	480	4.0
Single-stage processes	420	3.5
Specialty coatings	840	7.0
Spot repair	546	4.6
Strippable booth coatings	240	2.0
Three-stage processes or more	480	4.0
Two-stage processes	420	3.5

**TABLE 345-3
VOC LIMITS (REGULATORY) FOR COATING AS APPLIED TO NEW OR NEVER
COATED VEHICLE SURFACES**

COATING ON METAL SURFACES		
The following includes Coating, Adhesive, & Adhesive Primer	Grams VOC per liter	Pounds VOC per gal
Air-Dried Coating	420	3.5
Baked Coating [above 200°F (93°C)]	360	3.0
COATING ON FABRIC SURFACES	350	2.9
COATING FLEXIBLE PLASTIC SURFACES (Not Vinyl)		
- Primer	490	4.1
- Color Coating	450	3.8
- Color Coating/Clear Coat (Combined System)	540	4.5
COATING PLASTIC SURFACES (Not Defined as Flexible)	420	3.5
COATING ON VINYL SURFACES	450	3.8

302 OPERATING REQUIREMENTS:

- 302.1 Surface Preparation Fluids:** An owner or operator shall use surface preparation fluids with a VOC content as applied of no more than 1.4 lbs. VOC per gallon as calculated according to Section 503.3 of this rule.
- a. Surface preparation fluids containing VOC shall not be applied in a mist or finely atomized spray.
 - b. Dip cleaning requirements for motor vehicle or mobile equipment surfaces are described in Rule 331 (Solvent Cleaning) of these rules.
- 302.2 Paint Stripping:** An owner or operator using a tank for stripping off coatings or for cleaning objects shall:
- a. Cover tanks when not in-use; and
 - b. Minimize solvent dragout by tilting or rotating the object to drain off any pools of solvent before removing the object from the tank.
- 302.3 Emission Control System (ECS):** As an alternative to meeting the VOC regulatory limits, as applied, pursuant to Tables 345-1, 345-2, and 345-3 of this rule, an owner or operator is allowed to operate an ECS that reduces VOC emissions by at least 85% pursuant to Section 504 of this rule.
- 302.4 Maintenance:** An owner or operator subject to this rule shall operate and maintain in proper working order all production and cleaning equipment in which VOC-containing materials are used or stored.
- 302.5 Storage and Disposal of VOC and VOC-Containing Material:** An owner or operator subject to this rule shall:
- a. Store all VOC-containing materials including, but not limited to, waste coatings, waste solvents and their residues, and rags in closed containers.
 - b. Post a legible label identifying all VOC container's contents (greater than one gallon) in clear view on the container.
 - c. Keep all VOC containers closed except when contents are added or removed.
 - d. Dispose of waste or surplus VOC-containing materials in a manner that minimizes VOC evaporation including, but not limited to, disposing of them in covered containers.
 - e. Collect all VOC solvent used to manually clean spray guns in a container and close the container immediately after all of the solvent has been collected.

303 APPLICATION REQUIREMENTS:

- 303.1** An owner or operator shall use one of the following methods for spray-applied coating operations that use coatings containing more than 2.0 lb VOC/gal (240 g/l):
- a. An HVLP spray gun;
 - b. An electrostatic application;
 - c. A system that atomizes principally by hydraulic pressure, including "airless", "air-assisted airless"; or

- d. Any specific system which is approved by the Administrator as HVLPEquivalent.
- 303.2** An owner or operator is allowed to use an application method other than that described in Section 303.1 of this rule under any of the following conditions:
- a. When conducting a spray-applied coating operation that uses a coating that is less than or equal to 2.0lb VOC/gal (240 g/l);
 - b. If spray guns are designed and used solely for detailing, spot repair, and/or touch-up, and have a maximum reservoir capacity of 250 cc (8.8 fluid ounces); or
 - c. When spray applying adhesives.
- 303.3 Spray Gun Cleaning Requirements:** An owner or operator subject to this rule shall minimize VOC emission from cleaning spray guns by ensuring that equipment cleaning is performed without atomizing the solvent and all spent solvent is captured in closed containers.
- a. **Spray Gun Cleaning Machine:** An owner or operator subject to this rule shall use a spray gun cleaning machine that complies with the following requirements unless the owner or operator complies with the manual spray gun cleaning requirements in Section 303.3(b) of this rule.
 - (1) **General Requirements for Spray Gun Cleaning Machine:** The spray gun cleaning machine shall meet all of the following requirements:
 - (a) Be designed to clean spray guns; and
 - (b) Have at least one pump which drives solvent through and over the spray gun; and
 - (c) Have a basin which permits containment of the solvent; and
 - (d) Be kept in proper repair and free from liquid leaks; and
 - (e) Be fitted with a cover; and
 - (f) Be located on-site where the spray application occurs.
 - (2) **Automatic Spray Gun Cleaning Machine:** An automatic spray gun cleaning machine shall meet all of the following requirements:
 - (a) Have a self-closing cover or other self-enclosing feature for use when not loading or unloading. The cover's closed position allows no gaps exceeding 1/8 inch (3 mm) between the cover and the cabinet; and
 - (b) Be designed and maintained to prevent operation of its mechanical cleaning feature(s) unless it is completely covered or enclosed to the gap limits specified in Section 303.3(a)(2)(a) of this rule.
 - (3) **Non-Automatic Remote Reservoir Spray Gun Cleaning Machine:** A non-automatic remote reservoir spray gun cleaning machine shall meet all of the following requirements
 - (a) Drain solvent from the sink/work-space quickly into a remote reservoir when work-space is not in-use; and

- (b) The machine reservoir shall contain VOC vapors and not have a cumulative total opening, including the drain opening(s), exceeding two square inches; and
- (c) Allow a machine design in which the base of the sink/work-space functions as the reservoir's top surface, as long as the fit/seal between sink base and reservoir container allows the reservoir to meet the opening limits specified in Section 303.3(b)(3)(b) of this rule.

b. Manual Spray Gun Cleaning Requirements: Manual cleaning of spray guns shall comply with all of the following requirements:

- (1) Disassembled spray guns shall be cleaned by hand in a bucket or vat with non-mechanical, hand-held equipment including, but not limited to, paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges. For the purposes of this rule, brushes shall not be composed of porous materials such as wood or leather; and
- (2) All solvent used to manually clean spray guns shall be collected into a container which shall be immediately closed after all the solvent has been collected; and
- (3) Disassembled spray guns shall be cleaned with water or a solvent that is more than ½ water by weight or volume and calculated according to Section 503.3 of this rule.

303.4 Line Cleaning: All solvent used for line cleaning shall be pumped or drained into a container and kept closed when not in-use. Line cleaning shall not be conducted by spraying or atomizing a solvent with a gun.

304 STORAGE AND DISPOSAL OF VOC-CONTAINING MATERIAL:

304.1 An owner or operator subject to this rule shall store all VOC-containing materials including, but not limited to, waste coatings, waste solvents and their residues, and rags in closed containers at all times except when such materials are in-use.

304.2 A container must have a legible label identifying the container's contents.

304.3 Convey VOC-containing coating and cleaning materials from one location to another in closed containers.

304.4 Disposal-of waste or surplus VOC-containing materials (used for both coating and cleaning) shall be kept in closed containers at all times except when depositing or removing these materials. These materials shall be removed from the site in sealed containers.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

401 EMISSIONS CONTROL SYSTEM (ECS) SCHEDULE: Any owner or operator intending to install an ECS in a facility to comply with requirements of this rule shall complete the requirements of Section 504 of this rule.

402 COMPLIANCE SCHEDULE: An owner or operator subject to this rule shall meet all applicable provisions of this rule by November 2, 2016.

SECTION 500 – MONITORING AND RECORDS

501 RECORDKEEPING AND REPORTING: An owner or operator subject to this rule shall keep the following records. Records shall express VOC content in either English units (pounds of VOC per gallon) or metric units (grams of VOC per liter), less water, non-precursor organic compounds, and exempt compounds.

501.1 VOC-Containing Materials: An owner or operator shall keep the quantity of the VOC coatings and solvents used in the following form:

- a. Material name and manufacturer.
- b. Coating type (as listed in Tables 345-1, 345-2, and 345-3 of this rule) and mix ratio specific to the coating.
- c. VOC content for coatings calculated as defined in “VOC Regulatory” of this rule.
- d. VOC content for cleaners.

501.2 Alternative Application Method Transfer Efficiency Documentation: Retain records of any specific system which is approved by the Administrator as HVLP-equivalent.

501.3 HVLP Spray Gun Transfer Efficiency Documentation: Retain records of the HVLP spray gun transfer efficiency and/or demonstration of transfer efficiency.

501.4 Sufficient Documentation: Sufficient documentation includes any of the following:

- a. Purchase or usage documentation that gives VOC content, such as invoices and/or receipts identifying the coating type (as listed in Section 501.1 of this rule).
- b. Current, dated manufacturer’s publications such as charts or lists which show VOC content, with the products used in the facility highlighted or otherwise clearly marked.

501.5 Records Retention: Records showing the volume of each VOC-containing material purchased or used shall be retained for five (5) years and be made available to the Control Officer upon request, without delay during normal business hours. Records may be kept in either electronic or paper format.

501.6 Aerosol Spray Can Coatings: Maintain purchase or usage records for aerosol spray cans, including VOC content.

501.7 VOC Material Accountability: The Control Officer may account as VOC emissions to the atmosphere any VOC that is not accounted for by adequate records of disposal or of reuse within a facility.

502 COMPLIANCE DETERMINATION:

502.1 Measurement of VOC Content of Coating Materials Subject to this Rule: EPA Test Method 24 (as incorporated by reference in Section 505 of this rule) shall be used to determine VOC content of coating materials with the following restrictions for multi-component, polymerizing coatings:

- a. Method 24 shall be modified to eliminate the post-mixing dilution step (that employs toluene or other solvent) for the multi-component, polymerizing coatings.
- b. Method 31 (amended 5/18/2005) California's Bay Area Air Quality Management District shall be used as a guide for the multi-component, polymerizing coating measurement. The VOC measurement requires a specific technique of spreading a thin layer over the entire bottom of a foil pan used for the measurements. Refer to Section 505.2(a) of this rule as a guide for application of this method.

502.2 Low or No-Solids Materials: The VOC content of solutions, dispersions, and emulsions that have no solids or less than 5% solids shall be determined by either of the following methods as incorporated by reference in Section 505 of this rule:

- a. Method 313-91-South Coast Air Quality Management District.
- b. Method 31 of California's Bay Area Air Quality Management District.

502.3 Spray Gun Transfer Efficiency Measurement: The measurement of air pressure of an air atomized spray gun shall be demonstrated by any of the following methods:

- a. 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 gauge, (psig) air atomizing pressure measurement is made dynamically at the center of the air cap. The measurement shall be performed upon request by the Control Officer; or
- b. Providing documentation with manufacturer's technical literature on letterhead of the manufacturer of the spray gun confirming maximum air cap pressure; or
- c. In accordance with the provisions of Section 505.2(d) of this rule.

502.4 Pretreatment Coatings: ASTM D1613-06 as incorporated by reference in Section 505.2(c) of this rule shall be used determine the acid weight percent of a pretreatment coating, with the following exceptions:

- a. The pigment in a pretreatment coating prevents the use of this test method for determining the acid weight percent of the coating, then the test method shall be used for the non-pigmented component of the coating; and
- b. The acid weight percent shall be calculated based on the acid content and the mixing ratio of the non-pigmented component and compared to the remaining components recommended by the regulated entity.

502.5 ECS Testing:

- a. **EPA Method 18 or EPA Method 25 and its Submethod(s):** These methods, incorporated by reference in Section 505 of this rule, shall be used to determine VOC content of gaseous emissions entering and exiting an ECS.
- b. Capture efficiency of an ECS shall be determined either by EPA Method 204 and its submethods, or by using mass balance calculation methods in concert with EPA Methods 2, 2a, 2c, and 2d, as are incorporated by reference in Section 505 of this rule.

503 VOC CONTENT CALCULATIONS: For the purpose of determining compliance with the VOC regulatory limits in Table 345-1 of this rule, an owner or operator shall determine the VOC content of a coating using the procedures described in Section 503.2 of this rule for a single-stage process or as follows for the VOC content of a multi-stage process.

503.1 VOC Multi-Stage Calculation: $VOC_{multi} = \frac{VOC_{bc} + \sum_{i=0}^m VOC_{mc_i} + (2VOC_{cc})}{M+3}$

Where:

VOC_{multi} = VOC regulatory of multi-stage process, in grams VOC/liter (lbs/gal) of coating;

VOC_{bc} = VOC regulatory of the color coating, as determined in Section 503.2 of this rule;

VOC_{mc_i} = VOC regulatory of midcoat i, as determined in Section 503.2 of this rule;

VOC_{cc} = VOC regulatory of the clear coating, as determined in Section 503.2 of this rule; and

M = Number of midcoats.

In a situation where a “ground coat” is used prior to a color coating, use of the equation shall be adjusted as follows: The ground coat will be considered the color coating and the color coating will be considered one of the midcoats.

503.2 VOC Single-Stage Calculation: Each single-stage process shall be calculated as follows:

Pounds of VOC per Gallon (Grams/liter) of Coating = $\frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$

Where:

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

W_w = weight of water in pounds (or grams)

W_{es} = weight of all non-precursor organic 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 non-precursor organic compounds in gallons (or liters)

503.3 VOC Content of Cleaners and Reducers (Material VOC-Content):

$$\begin{aligned} & \text{VOC Content of Cleaners or Reducers} \\ & = \frac{W_s - W_w - W_{es}}{V_m} \end{aligned}$$

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 organic compounds in pounds (or grams)

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

504 EMISSION CONTROL SYSTEM (ECS) AND RELATED SYSTEM OPERATING REQUIREMENTS:

504.1 ECS Requirements: To meet the requirements pursuant to Section 302.3 of this rule, an ECS shall be operated as follows:

- a. The emissions-processing subsystem of the ECS shall reduce the VOC entering it by at least 90 percent.
- b. Throughout the period when the VOC content exceeds the applicable VOC limits, the ECS shall be operated to control VOC emissions.
- c. Materials that exceed the applicable VOC-limits shall be clearly identified such that workers are informed an ECS must be used.

504.2 Recordkeeping for an ECS:

- a. On each day that an ECS is used to comply pursuant to Section 302.3 of this rule, an owner or operator shall record the amount and VOC content of the material for which the ECS was used.

b. ECS Operation and Maintenance Records:

- (1) On each day an ECS is used, make a permanent record of the operating parameters of the key systems as required by the Operations & Maintenance (O&M) Plan.
- (2) For each day or period in which the O&M Plan requires that maintenance be performed, a permanent record shall be made of the maintenance actions taken within 24 hours of maintenance completion.

504.3 ECS Schedule: Any owner or operator of a facility first intending to install and commence to use an ECS pursuant to Section 302.3 of this rule, shall submit for the Control Officer's approval an emission control plan describing the following:

- a. Within three months that such facility has become subject to the ECS requirement, the owner or operator shall submit the ECS plan to the Control Officer;
- b. The ECS plan shall show how the ECS is to be used to achieve full compliance;
- c. The plan shall specify dates for completing increments of progress, such as the contractual arrival date of new control equipment;
- d. The Control Officer may require a person submitting such ECS plan to submit subsequent reports on progress in achieving compliance; and
- e. Any and all ECS used to achieve such compliance shall be in operation within 15 months after the facility becomes subject to the ECS requirement.

504.4 Operation and Maintenance (O&M) Plan Required for ECS: For any ECS used to meet the requirements of this rule:

- a. An owner or operator shall provide and maintain (an) O&M Plan(s) for the ECS and any ECS monitoring device.
- 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.
- c. The owner or operator shall comply with all the identified actions and schedules provided in each O&M Plan.

504.5 Providing and Maintaining ECS Monitoring Devices: Any owner or operator 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.

504.6 O&M Plan Responsibility: An owner or operator of a facility that is required to have an O&M Plan pursuant to Section 504.4 of this rule 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.

505 COMPLIANCE DETERMINATION-TEST METHODS INCORPORATED BY REFERENCE: The following test methods are approved for use for the purpose of determining compliance with this rule. The test methods are incorporated by reference in Appendix G of the Maricopa County Air Pollution Control Regulations. Alternative test methods as approved by the Administrator or other EPA-approved test methods may be used upon prior written approval from the Control Officer. When more than one test method is permitted for the same determination, an exceedance under any method will constitute a violation. Copies of test methods referenced in this section are available at the Maricopa County Air Quality Department.

505.1 EPA Test Methods:

- a. 40 CFR Part 60, APPENDIX A-1:
 - (1) Method 2-Determination of stack gas velocity and volumetric flow rate (Type S pitot tube);
 - (2) Method 2A-Direct measurement of gas volume through pipes and small ducts;
 - (3) Method 2C-Determination of stack gas velocity and volumetric flow rate in small stacks or ducts (standard pitot tube);
 - (4) Method 2D-Measurement of gas volume flow rates in small pipes and ducts;
- b. 40 CFR Part 60, APPENDIX A:

Method 18-Measurement of Gaseous Organic Compound Emissions by Gas Chromatography and its submethods.
- c. 40 CFR Part 60, APPENDIX A-7:

Method 24-Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings.

d. 40 CFR Part 60, APPENDIX A:

Method 25-Determination of Total Gaseous Nonmethane Organic Emissions as Carbon and its submethods.

e. 40 CFR Part 51, APPENDIX M:

Methods 204, 204a, 204b, 204c, 204d, 204e and 204f-Criteria for and Verification of a Permanent or Temporary Total Enclosure.

505.2 Other Test Methods (Not EPA):

- a.** California's Bay Area Air Quality Management District (BAAQMD) Method 31 (April 15, 1992; Amended May 18, 2005), "Determination of Volatile Organic Compounds in Paint Strippers, Solvent Cleaners, and Low Solids Coatings".
- b.** California's South Coast Air Quality Management District (SCAQMD) Method 313-91 (April, 1997).
- c.** ASTM D1613-06 (2012), Standard Test Method for Acidity in Volatile Solvents and Chemical Intermediates Used in Paint, Varnish, Lacquer, and Related Products.
- d.** California's South Coast Air Quality Management District (SCAQMD) "Guidelines for Demonstrating Equivalency with District Approved Transfer Efficient Spray- Guns" (September 26, 2002).
- e.** California's South Coast Air Quality Management District (SCAQMD) "Spray Equipment Transfer Efficiency Test Procedure for Equipment User" (May 24, 1989).