

**PLACER COUNTY
AIR POLLUTION CONTROL DISTRICT**

**DRAFT
STAFF REPORT**

**PROPOSED NEW RULE 249,
SURFACE COATING OF PLASTIC PARTS AND PRODUCTS**

August 8, 2013

SUMMARY

The District is required to adopt volatile organic compounds (VOCs) standards at least as stringent as contained in the U.S. EPA “Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings” (CTG), September 2008. Rule 245, Surface Coating of Metal Parts and Products was amended August 20, 2009 to meet the requirements for metal parts. Adoption of this proposed new Rule 249, Surface Coating of Plastic Parts and Products would meet the requirements for plastic parts.

BACKGROUND

Clean Air Act (CAA) section 172(c)(1) provides that state implementation plans (SIPs) for nonattainment areas must include “reasonably available control measures” (RACM), including “reasonably available control technology” (RACT), for sources of emissions. Section 182(b)(2)(A) provides that for certain nonattainment areas, states must revise their SIPs to include RACT for each category of volatile organic compound (VOC) sources covered by a control techniques guidelines (CTG) document issued between November 15, 1990 and the date of attainment.

The United States Environmental Protection Agency (EPA) defines RACT as “the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.

DISCUSSION OF PROPOSED RULE AMENDMENTS

Placer County currently has only one minor source, Freedom Refinishing, under permit which would be required to meet the requirements of this rule. The owner indicates that he occasionally coats plastic parts and the total plastic parts coated amounts to approximately 2% of his business. He uses the same paint to coat plastic as he uses for metal parts. The company is currently in compliance with the proposed rule.

Applicability:

The rule applies throughout all of Placer County.

Exemptions:

Section 104 contains a low usage exemption for non-compliant coatings used in quantities of less than 55 gallons.

Section 105 contains the exemptions for operations and coating which are covered by other specific rules.

Section 106 contains partial exemptions for coating operations used for repair and touchup. These operations are exempt only from the application method section 302. Coating operations used for stencil, safety indicating, solid film lubricating, electrical insulating, thermal conduction, and magnetic data storage are not exempt from most requirements of the rule except the surface

preparation and cleanup standards, recordkeeping requirements of section 501, and work practices in section 304.

Definitions:

The definitions were based on definitions used in other District Rules or in EPA’s CTG.

Standards:

The VOC limits are listed in Table 1 of Section 301. The limits are expressed in both grams per liter and pounds per gallon (lb/gal).

The coating categories covered are general one component, general multi-component, and specialty coating categories of: electric dissipating and shockfree coating, extreme performance (2 pack), metallic, military specification (1 pack), military specification (2 pack), mold seal, multi-colored, optical and vacuum metalizing.

Administrative:

The administrative requirements contain prohibition of specification, product information requirements for sellers, formula for determining the VOC Content of the coatings, formula for determining the VOC Content per Liter of Coating Removers (Strippers), surface preparation materials, and cleanup materials.

Monitoring and Records:

Standard recordkeeping is required, including a monthly record of the volume of each product used.

Records must be retained for at least 3 years, unless the source is a Title V source subject to Rule 507, Federal Operating Permit Program.

FINDINGS

FINDING	DEFINITION	REFERENCE
Authority	The District is permitted or required to adopt, amend, or repeal the rule by a provision of law or a state or federal regulation.	California Health and Safety Code, Section 40702 and Section 41010; 1990 Federal Clean Air Act, Section 110(a) (2) (H) and Section 182(d).
Necessity	The District has demonstrated that a need exists for the rule, or for its amendment or repeal.	The adoption of proposed new Rule 249 is necessary to satisfy the requirement that U.S. Environmental Protection Agency “Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings” (CTG) be implemented.
Clarity	The rule is written or displayed so that its	There is no indication at this time

	meaning can be easily understood by the persons directly affected by it.	that the rule is not written in such a manner that the person affected by the rule can easily understand it.
Consistency	The rule is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations.	The District has found that the rule is consistent with existing state and federal guidelines.
Non-duplication	The rule does not impose the same requirements as an existing state or federal regulation, unless the District finds that the requirements are necessary or proper to execute the powers and duties granted to, and imposed upon the District.	There are no other duplicate requirements in federal law. The limits came from the CTG, which is a guideline to agencies.
Reference	Any statute, court decision, or other provision of law that the District implements, interprets, or makes specific by adopting, amending, or repealing the rule. An example of this would be the 1988 EPA State Implementation Plan call to revise District rules.	This rule is being proposed because of the requirements of the Federal Clean Air Act Amendments of 1990.

SUMMARY

District staff recommends the District Board adopt the proposed new Rule 249, Surface Coating of Plastic Parts and Products, with standards for plastic parts and products as contained in the U.S. EPA “Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings” (CTG), September 2008.

Attachment #1:

ATTACHMENT #1

SUBJECT:

Proposed New Rule 249, Surface Coating of Plastic Parts and Products

RULE 249 SURFACE COATING OF PLASTIC PARTS AND PRODUCTS

Adopted 8-8-13

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100 GENERAL

101 PURPOSE: To limit the emission of volatile organic compounds from the application of coatings, coating removers (strippers), surface preparation materials, and cleanup materials in plastic parts and products coating operations.

102 APPLICABILITY: The provisions of this rule apply to all of Placer County.

103 SEVERABILITY: If any section, subsection, sentence, clause, phrase, or portion of this rule is, for any reason, held invalid, unconstitutional or unenforceable by any court of competent jurisdiction, that portion shall be deemed as a separate, distinct, and independent provision, and the holding shall not affect the validity of the remaining portions of the rule.

104 EXEMPTIONS, LOW USAGE OF MATERIALS EXCEEDING VOC CONTENT LIMITS:

104.1 Low Usage of Non-Compliant Coating Materials: The VOC requirements of Sections 301 of this rule shall not apply to coating operations where (1) the total volume of such non-compliant coatings is less than 55 gallons per calendar year, if substitute compliant coatings are not available, and (2) the requirements of Sections 401 and 501 are met.

105 EXEMPTIONS, SPECIFIC OPERATIONS AND COATINGS: This rule shall not apply to:

105.1 Coating of prefabricated architectural components or structures not coated in a shop environment and which are regulated by Rule 218, Architectural Coatings.

105.2 Motor vehicles including automotive, truck and heavy equipment which are regulated by Rule 234, Automotive Refinishing Operations.

105.3 Coating of metal cans, which is regulated by Rule 223, Metal Container Coating.

105.4 Coating of metal parts and products which are regulated by Rule 245, Surface Coating of Metal Parts and Products.

105.4 Adhesives and other materials which are regulated by Rule 235, Adhesives.

105.5 Polyester resin operations which is regulated by Rule 243, Polyester Resin Operations.

105.6 Coatings sold in non-refillable aerosol containers having a capacity of 1 liter (1.1 quarts, or 34 fluid ounces), or less.

105.7 Powder coatings.

106 PARTIAL EXEMPTIONS:

106.1 Coating operations used for repair and touchup are exempt from all sections of the rule except the application method requirements of Section 302, surface preparation and cleanup of Section 303, the work practices requirements of Section 304, and the recordkeeping requirements of Section 501 shall apply.

106.2 Coating operations used for stencil, safety indicating, solid film lubricating, electric insulating, thermal conduction, and magnetic data storage, are exempt from all sections of the rule except the application method requirements of Section 302, surface preparation and cleanup of Section 303, the work practices requirements of Section 304, and the recordkeeping requirements of Section 501

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shall apply.

200 DEFINITIONS

- 201 ADHESIVE:** Any substance that is used to bond one surface to another by attachment.
- 202 AEROSOL CONTAINER:** A hand-held, nonrefillable container which expels pressurized product ingredients by means of a propellant-induced force.
- 203 APPLICATION EQUIPMENT:** A device used to apply coatings or used in preparing a coating material, such as stir sticks or funnels.
- 204 CLEANUP MATERIAL:** A VOC-containing material used to clean parts and application equipment used in miscellaneous plastic parts and products coating operations.
- 205 CLOSED CONTAINER:** A container whose cover meets with the main body of the container without any visible gaps between the cover and the main body of the container.
- 206 ELECTRIC DISSIPATING COATING AND SHOCK-FREE COATING:** A coating that rapidly dissipates a high voltage electric charge.
- 207 EXEMPT COMPOUNDS:** For a current listing of exempt compounds, see Rule 102, Definitions.
- 208 EXTREME PERFORMANCE (2 PACK):** A coating applied to a plastic surface where the coated surface, in its intended use, is frequently or chronically exposed to any of the following:
- 208.1 Corrosive, caustic or acidic agents, chemicals, chemical fumes, chemical mixtures or solution.
 - 208.2 Repeated exposure to temperatures in excess of 250°F (121°C).
 - 208.3 Repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial grade solvents, cleansers or scouring agents.
- 209 FLOW COAT:** A coating method which is applied by flowing a stream of coating over an object and allowing any excess material to drain.
- 210 HAND COATING:** The application of coatings by manually-held, non-mechanically operated equipment. Such equipment includes paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers and sponges.
- 211 HIGH VOLUME, LOW PRESSURE (HVLP) APPLICATION EQUIPMENT:** Equipment used to apply coatings by means of a gun which is designed to be operated, and which is operated between 0.1 and 10 psig air pressure, measured dynamically at the center of the air cap and at the air horns.
- 212 KEY SYSTEM OPERATING PARAMETER:** A variable that is critical to the operation of an emission control system and that ensures both operation of the system within the system manufacturer's specifications, and compliance with the overall system efficiency standard required by Section 305. Such variables may include, but are not limited to, hours of operation, temperature, flow rate and pressure.
- 213 LOW VOLUME, LOW PRESSURE (LVLP) APPLICATION EQUIPMENT:** Equipment

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used to apply coatings by means of a gun which is designed to be operated, and which is operated between 0.1 and 10 psig air pressure, with air volume less than 15.5 cfm per spray gun, and which operates at a maximum fluid delivery pressure of 50 psig.

- 214 MAINTENANCE CLEANING:** The cleaning of tools, forms, molds, jigs, machinery and equipment, and the cleaning of work areas where maintenance or manufacturing occurs.
- 215 METALLIC COATING:** A coating which contains more than 0.042 lb/gal (5.0 g/l) of metal particles, as applied, where such particles are visible in the dried film.
- 216 MILITARY SPECIFICATION:** A coating which has a formulation approved by a United States Military Agency for use on military equipment.
- 217 MOLD-SEAL COATING:** The initial coating applied to a new mold or repaired mold and associated tooling to provide a smooth surface which, when coated with a mold release material, prevents products from sticking to the mold or to the tooling.
- 218 MULTI-COLORED COATING:** A coating which exhibits more than one color when applied, and which is packaged in a single container and applied in a single coat.
- 219 MULTI COMPONENT COATING:** A coating requiring the addition of a separate reactive resin, commonly known as a catalyst or hardener, before application to form an acceptable dry film.
- 220 ONE-COMPONENT COATING:** A coating that is ready for application as it comes out of its container to form an acceptable dry film. A thinner, necessary to reduce the viscosity, is not considered a component.
- 221 OPTICAL COATING:** A coating applied to an optical lens.
- 222 PLASTIC PARTS AND PRODUCTS:** Any components or complete units fabricated from plastic, except those subject to the provisions of other District source-specific rules
- 223 TRANSFER EFFICIENCY:** The ratio of the weight or volume of coating solids adhering to an object, to the total weight or volume, respectively, of coating solids used in the application process, expressed as a percentage.
- 224 VACUUM-METALIZING COMPOUND:** The undercoat applied to the substrate on which the metal is deposited, or the overcoat applied directly to the metal film. Vacuum metalizing/physical vapor deposition (PVD) is the process whereby metal is vaporized and deposited on a substrate in a vacuum chamber.
- 225 VOLATILE ORGANIC COMPOUND (VOC):** For the purposes of this rule, “volatile organic compound” has the same meaning as in Rule 102, Definitions.
- 226 VOLATILE ORGANIC COMPOUND (VOC) AS APPLIED:** For the purposes of this rule, “volatile organic compound as applied” means the VOC content including thinners, reducers, hardeners, retarders, catalysts and additives, calculated pursuant to Sections 403 or 404, as applicable.

300 STANDARDS

- 301 LIMITS: VOC CONTENT OF COATINGS FOR PLASTIC PARTS AND PRODUCTS:** Except for materials and processes listed in Sections 104 or 105, no person shall apply any coatings to a Plastic part or product, or use VOC-containing solvents, if such materials have a VOC content exceeding the applicable limits specified in the following Table 1. The VOC content of coating materials shall be determined in accordance with

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Section 403. The VOC content of solvents, strippers and cleanup materials, shall be determined in accordance with Sections 404.

Table 1 – VOC Content Limits for Coatings and Materials Used to Coat Plastic Parts and Products

	VOC As Applied Limit, grams/liter (lb/gal), (Less water and exempt compounds)
General One Component	275 (2.3)
General Multi-Component	420 (3.5)
Specialty Coatings	
Electric Dissipating and Shock-free	800 (6.7)
Extreme Performance (2 pack)	420 (3.5)
Metallic	420 (3.5)
Military Specification (1 pack)	335 (2.8)
Military Specification (2 pack)	420 (3.5)
Mold Seal	755 (6.3)
Multi-colored	680 (5.7)
Optical	800 (6.7)
Vacuum Metalizing	800 (6.7)

302 APPLICATION METHODS: A person shall not apply coatings to Plastic parts and products subject to the provisions of this rule unless the coatings are applied using properly operated equipment, and by using either: one of the following application methods or any other high transfer efficiency application method which has been approved in advance, in writing, by the Air Pollution Control Officer and United States Environmental Protection Agency:

- 302.1 Electrostatic attraction, operated in accordance with manufacturer's recommendations.
- 302.2 High-Volume, Low-Pressure (HVLP) spray system operated in accordance with manufacturer's recommendations.
- 302.3 Low-Volume, Low-Pressure (LVLP) spray system operated in accordance with manufacturer's recommendations.
- 302.4 Flow Coat
- 302.5 Dip Coat
- 302.6 Hand Coat
- 302.7 Roll Coat

303 SURFACE PREPARATION AND CLEAN-UP REQUIREMENTS:

- 303.1 A person shall not use materials which have a VOC content in excess of 200 grams per liter (1.67 pounds/gallon) of material, as defined in Section 404, for stripping any coating governed by this rule.
- 303.2 A person shall not perform cleanup of application equipment (including spray gun

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nozzles), product cleaning, or surface preparation, with a material containing VOC in excess of 50 grams per liter (0.42 pounds per gallon), as defined in Section 404.

304 WORK PRACTICE REQUIREMENTS:

304.1 Spillage of VOC-containing materials shall be minimized.

304.2 VOC-containing materials and used shop towels or sponges shall be stored and disposed of in closed containers. Storage and disposal containers must be kept closed, except when depositing or removing the materials. Disposal shall be conducted in a manner that the VOC are not emitted to the atmosphere.

304.3 VOC-containing materials shall be conveyed in closed containers or pipes.

305 EMISSION CONTROL EQUIPMENT: As an alternative to using materials that meet the VOC limits in Sections 301, a person may comply with the VOC provisions of this rule by using an emission control equipment system approved by the District, the California Air Resources Board and the U.S. Environmental Protection Agency. Such compliance may be demonstrated by a system to capture and control emissions, which will reduce VOC emissions by at least 90% by weight.

400 ADMINISTRATIVE REQUIREMENTS

401 PROHIBITION OF SPECIFICATION: No person shall require for use or specify the application of any coating subject to the provisions of this rule that does not meet the limits and requirements of this rule. The prohibition of this Section shall apply to all written or oral contracts under the terms of which any coating is to be applied to any Plastic parts or product at any physical location within the District.

402 PRODUCT INFORMATION REQUIREMENTS FOR SELLERS: Any person who sells any coating, coating remover (stripper), surface preparation or cleanup material subject to this rule, shall provide the following information on material data sheets made available to the purchaser at the time of sale:

402.1 The material type by name/code/manufacturer.

402.2 For coating materials, the maximum VOC content of the material, as applied, after any mixing or thinning as recommended by the manufacturer: VOC content shall be displayed as grams per liter (pounds per gallon) of coating, excluding water and exempt compounds, pursuant to Section 403.

402.3 For coating removers (strippers), surface preparation and cleanup materials, the maximum VOC content of the material, as applied, after any mixing or thinning as recommended by the manufacturer: VOC content shall be displayed as grams per liter (pounds per gallon) of material, including water and exempt compounds, pursuant to Section 404.

402.4 For all materials, recommendations regarding thinning, reducing, or mixing with any VOC-containing material.

402.5 For all materials, VOC content may be calculated using product formulation data, or may be determined using the test method in Section 503.1.

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- 403 DETERMINATION OF VOC CONTENT OF COATINGS, LESS WATER AND EXEMPT COMPOUNDS:** The weight of VOC per combined volume of VOC and coating solids shall be calculated by the following equation:

$$G = \frac{W_v - W_w - W_{ec}}{V_m - V_w - V_{ec}}$$

- Where: G = Weight of VOC per liter of coating, less water and exempt compounds
 W_v = Weight of volatile compounds, in grams
 W_w = Weight of water, in grams
 W_{ec} = Weight of exempt compounds, in grams
 V_m = Volume of coating material, in liters
 V_w = Volume of water in liters
 V_{ec} = Volume of exempt compounds, in liters.

- 404 DETERMINATION OF VOC CONTENT PER LITER OF COATING REMOVERS (STRIPPERS), SURFACE PREPARATION MATERIALS, AND CLEANUP MATERIALS:** The weight (in grams) of VOC per liter of coating materials shall be calculated by the following equation:

$$G = \frac{W_v - W_w - W_{ec}}{V_m}$$

- Where: G = Weight of VOC per total volume of material, in grams per liter.
 W_v = Weight of all volatile compounds, in grams
 W_w = Weight of water, in grams
 W_{ec} = Weight of exempt compounds, in grams
 V_m = Volume of coating material, including any added VOC-containing solvents or reducers, but excluding any colorants added to tint the base, in liters.

- 405 OPERATION AND MAINTENANCE PLAN:** A person using an emission control system pursuant to Section 305, as a means of alternate compliance with this rule, must submit an Operation and Maintenance Plan for the emission control system to the Air Pollution Control Officer for approval. A person proposing to install a new emission control system as a means of alternate compliance with this rule shall submit in addition to an Operation and Maintenance Plan, an application for Authority to Construct, pursuant to Rule 501, General Permit Requirements. The plan shall specify operating and maintenance procedures which will demonstrate continuous operation of the emission control system during periods of emission-producing operations. The Plan shall also specify which records must be kept to document these operating and maintenance procedures. These records shall comply with the requirements of Sections 501. The plan shall be implemented upon approval of the Air Pollution Control Officer.

500 MONITORING AND RECORDS

- 501 RECORDKEEPING:** In addition to any applicable record-keeping requirements of either Rule 502, New Source Review, Rule 507, Federal Operating Permit Program, Rule 511, Potential To Emit, or any other District Rule which might be applicable, any person applying coating products, surface preparation solvents, cleanup solvents, or strippers

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subject to any provision of this rule shall maintain the following records for non-exempt materials in order to evaluate compliance:

501.1 Product Data: A list of currently used coating products, surface preparation solvents, cleanup solvents or strippers subject to this rule. This list shall include all of the following data for each material used:

501.1.1 The material's manufacturer, product name and product number or code.

501.1.2 Classification according to the terminology used in Sections 301, 302 and 303.

501.1.3 The material's VOC content as applied, determined according to Sections 403 and 404, when used in the mixing ratios recommended by the manufacturer.

501.1.4 The actual mixing ratio, if different from the manufacturer's recommendation, used in applying the material.

501.2 Product Usage and Frequency: Any person using materials regulated by this rule shall record and maintain records of the volume used per month of each individual material as listed pursuant to Section 501.1. The quantity of each non-compliant coating usage which qualifies for an exemption under Section 104.1 shall be recorded on a daily basis.

501.3 Emission Control Equipment Records:

501.3.1 A person using emission control equipment as a means of alternate compliance pursuant to Section 305, shall maintain records on a daily basis, showing the type and volume of coatings and solvents used.

501.3.2 A person using emission control equipment as a means of alternate compliance with this rule pursuant to Section 305, shall maintain daily records of key system operating parameters and maintenance procedures which will demonstrate continuous operation and compliance of the emission control system during periods of emission-producing activities. Key system operating parameters are those necessary to ensure compliance with the requirements of Section 305.

501.4 Retention of Records: All records required by this rule shall be retained for at least three years, except for sources subject to Rule 507, Federal Operating Permit Program, which shall be retained for at least five years. Such records shall be made available to the Air Pollution Control Officer, upon request.

502 VOC EMISSION THRESHOLD: If VOC emissions from all emission units at the facility for any calendar year exceed 10,000 pounds, additional recordkeeping documentation will be required per Rule 511, Potential To Emit.

503 TEST METHODS:

503.1 Determination of VOC Content: VOC content of coatings, solvents, strippers and surface preparation materials shall be determined in accordance with United States Environmental Protection Agency (USEPA) Method 24 or Method 24A.

503.2 Determination of Compounds Exempt From VOC Definition: Exempt compounds referenced in Section 208 and listed in Rule 102, Definitions, shall be determined in accordance with ASTM D 4457-85 "Standard Test Method for Determination of

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Dichloromethane and 1,1,1-Trichloroethane in Paints and Coatings by Direct Injection into a Gas Chromatograph” or California Air Resources Board Method 432 “Determination of Dichloromethane and 1,1,1-Trichloroethane in Paints and Coatings”. If any perfluorocarbons or volatile cyclic and linear methyl siloxanes are being claimed as exempt compounds, the person making the claim must state in advance which compounds are present and the USEPA-approved test method used to make the determination of these compounds.

- 503.3 Determination of Control Efficiency: Control efficiency of emissions control equipment referenced in Section 305, shall be determined in accordance with USEPA Method 25 or 25A: and USEPA Method 2 or 2C (whichever is applicable). USEPA Method 18 or CARB Method 422 “Determination of Volatile Organic Compounds in Emissions from Stationary Sources” may be used to determine emissions of exempt compounds.
- 503.4 Determination of Collection Efficiency: Collection efficiency of the control equipment referenced in Section 305 shall be determined in accordance with U.S. EPA’s “Guidelines for Determining Capture Efficiency, January 9, 1995”. Individual collection efficiency test runs subject to the U.S. EPA’s technical guidelines shall be determined by:
- 503.4.1 40 CFR 51, Appendix M, Methods 204-204F; or
- 503.4.2 The South Coast AQMD “Protocol for Determination of Volatile Organic Compound (VOC) Capture Efficiency”; or
- 503.4.3 Any other method approved by the USEPA, the California Air Resources Board, and the Air Pollution Control Officer.
- 503.5 Emissions From Spray Gun Cleaning Systems: Determination of emissions of VOC from spray gun cleaning systems shall be made using South Coast Air Quality Management District “General Method for Determining Solvent Losses From Spray Gun Cleaning Systems”, October 1989.
- 503.6 Transfer Efficiency: Determination of transfer efficiency shall be made using South Coast Air Quality Management District Test Method “Spray Equipment Transfer Efficiency Test Procedure for Equipment Users”, May 24, 1989.
- 503.7 Multiple Test Methods: When more than one test method or a set of test methods is specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of this rule.