

VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT

**RULE 74.12 - SURFACE COATING OF METAL PARTS AND PRODUCTS**

*(Adopted 11/19/85, Revised 8/26/86, 5/16/89, 11/17/92, 1/10/95, 9/10/96, 11/11/03)*

A. Applicability

The provisions of this rule apply to any person who applies or specifies the use of surface coatings to metal parts or products.

Any person who applies or specifies the application of surface coatings to either stationary structures or their appurtenances is subject to Rule 74.2 instead of this rule.

Any person who applies or specifies the application of surface coatings to aerospace vehicles or components is subject to Rule 74.13 instead of this rule.

Any person who applies or specifies the application of surface coatings to motor vehicles or mobile equipment or their parts or components is subject to Rule 74.18 instead of this rule.

Any person who applies or specifies the application of surface coatings to marine or fresh water vessels or their parts or components is subject to Rule 74.24 instead of this rule.

B. Requirements

1. Coating Reactive Organic Compounds (ROC) Content Limits: No person shall apply any coating with an ROC content in excess of the following limits, as applied:

Limits  
Grams of ROC Per Liter, or Pounds per Gallon (lb/gal)  
of Coating, Less Water  
and Exempt Organic Compounds

<u>COATING</u>	<u>AIR</u> <u>DRIED</u>	<u>lb/gal</u>	<u>BAKED</u>	<u>lb/gal</u>
All coatings except for the following:	340	2.8	275	2.3
Camouflage	420	3.5	360	3.0
Extreme Performance	420	3.5	360	3.0
Etching Filler	420	3.5	420	3.5
Heat Resistant	420	3.5	360	3.0
High Gloss	420	3.5	360	3.0

<u>COATING</u>	<u>AIR</u>		<u>BAKED</u>	
	<u>DRIED</u>	<u>lb/gal</u>	<u>lb/gal</u>	<u>lb/gal</u>
High Performance Architectural	420	3.5	420	3.5
High Temperature	420	3.5	420	3.5
Laboratory Furniture	340	2.8	340	2.8
Metallic	420	3.5	360	3.0
Mold Seal	420	3.5	420	3.5
Pan Backing	420	3.5	420	3.5
Pretreatment Wash				
Primer	340	2.8	275	2.3
Silicone Release	420	3.5	420	3.5
Solar Absorbent	420	3.5	360	3.0
Vacuum Metalizing	420	3.5	420	3.5

2. Add-on Control Equipment Option: In lieu of complying with the coating ROC content limits specified in Subsection B.1, air pollution control equipment may be used provided:

- a. The combined capture and control efficiency reduces emissions by at least 85 percent by weight, and
- b. The Air Pollution Control Officer (APCO) issues written approval for such equipment in the form of an Authority to Construct and Permit to Operate, and
- c. When operating a thermal incinerator, the combustion temperature of the incinerator is continuously monitored.
- d. When operating a catalytic incinerator, the exhaust and inlet gas temperatures of the incinerator are continuously monitored, and
- e. When operating a carbon adsorber or control system other than a thermal or catalytic incinerator, the control device efficiency is continuously monitored, and
- f. The equipment and monitors are used in accordance with vendor or manufacturer specifications.

3. Transfer Efficiency: No person shall apply coatings subject to this rule except by using properly operated equipment and by using one or more of the following:

- a. Electrostatic application, operated at a minimum of 60 kV;
- b. Flow coat application;

- c. Dip coat application;
  - d. High volume, low pressure application (HVLP);
  - e. Hand application methods;
  - f. Any other application method that is demonstrated to achieve at least 65 percent transfer efficiency.
4. Surface Preparation and Cleanup:
- a. No person shall use any material which contains more than 70 grams of ROC per liter of material for substrate surface cleaning. Substrate surface cleaning performed in a vapor degreaser shall not be subject to this ROC content limit.
  - b. No person shall use organic solvent for cleanup unless:
    - 1) An enclosed gun washer or "low emission spray gun cleaner" that has been approved in writing by the APCO is properly used for spray equipment cleaning, and
    - 2) The ROC composite partial pressure of organic solvent used for cleanup, including spray equipment cleaning, is less than 45 mm Hg at 20 °C.
5. All ROC containing materials, including, but not limited to surface coatings, cleanup solvents, or surface preparation materials shall be stored in closed containers which are nonabsorbent and do not leak.
6. Coating Compliance Statement: The manufacturer of coatings subject to this rule shall designate on product labels or data sheets, the ROC content or the Volatile Organic Compounds (VOC) content of coatings including coating reducers and catalysts, as supplied. This designation shall include recommendations regarding thinning, reducing, or mixing with any other ROC containing materials, and express the coating ROC or VOC content on an as applied basis when used in accordance with the manufacturer's recommendations. All letters and numbers used to designate ROC or VOC content on product labels shall be visible and legible.
7. Liquid Cleaning Material Compliance Statement: The manufacturer of liquid cleaning materials used in coating operations shall designate on product labels or data sheets the ROC content and ROC Composite Partial Pressure of cleaning materials as supplied. This designation shall include recommendations regarding mixing with any other ROC containing materials, and express the cleaning material ROC content when used in accordance with the manufacturer's

recommendations. All letters and numbers used to designate ROC or VOC content on product labels shall be visible and legible.

8. Prohibition of Specifications: No person shall specify, solicit or require the application of any coating to any metal part or product, or the use of any equipment cleaning solvent, if such application or use would violate this rule. This prohibition applies to all written and oral contracts for which any coating subject to this rule is to be applied to any metal part or product at any location in Ventura County.
9. Any person wishing to use a coating having an ROC content greater than that specified on his permit to operate shall apply for a permit modification. Such coating shall not have an ROC content exceeding the applicable limit specified in Subsection B.1.

C. Exemptions

1. Subsection B.1 of this rule does not apply to any one coating provided:
  - a. No complying coatings are available, and
  - b. Total usage of all noncomplying coatings has not exceeded 55 gallons in any calendar year.

Any person claiming this exemption shall demonstrate the lack of available coatings to the APCO on an annual basis.

2. This rule does not apply to:
  - a. Aircraft or aerospace vehicle coating operations
  - b. Marine vessel exteriors
  - c. Motor vehicle and mobile equipment coating.
  - d. Aerosol coating products.
3. This rule, except section B.8, shall not apply to any stationary source that emits less than 200 pounds of ROC in every rolling period of 12 consecutive calendar months from metal parts and products coating operations. Any person claiming this exemption shall maintain monthly records to substantiate this claim. Emissions from aerosol products, cold cleaners, and vapor degreasers shall not be included in this determination.
4. Subsection B.4.a does not apply to any metal parts coating operation where total usage of noncomplying substrate surface cleaners does not exceed five gallons per

rolling 12-month period. Any person claiming this exemption shall maintain monthly operational records to substantiate this claim.

D. Recordkeeping Requirements

1. Any person subject to this rule shall:
  - a. Maintain a current list of all coatings that provides all information necessary to evaluate compliance, including the following, as applicable:
    - 1) The name and manufacturer of each coating and any catalysts and reducers used with each coating
    - 2) Mix ratio of components used in coatings
    - 3) ROC content of coatings, as applied
    - 4) Coating category from Subsection B.1 of each coating used.
  - b. Maintain records which show the following for each ROC containing material used for cleanup, including equipment cleaning, and each ROC containing material used for substrate surface cleaning:
    - 1) Type
    - 2) ROC content in grams per liter of material
    - 3) Composite ROC partial pressure of organic solvent (cleaning materials only).
  - c. Maintain records of the monthly volume of each complying coating and ROC containing liquid used for equipment clean-up and surface preparation and daily volume of each noncompliant coating used.
  - d. Any person using an emission control system as a means of complying with this rule shall maintain daily records of key system operating and maintenance procedures which will demonstrate continuous operation and compliance of the emission control device during periods of emission producing activities. Key system operating parameters are those necessary to ensure compliance with subsection B.2 such as temperatures, pressures and flow rates.
2. All lists and records shall be maintained for a minimum of two (2) years from the date of each entry and shall be available to District personnel upon request.

E. Test Methods

1. The reactive organic compounds content of coatings and liquid cleaning materials, shall be determined using EPA Reference Method 24 (40 CFR 60, Appendix A).
2. Transfer efficiency shall be determined in accordance with the South Coast Air Quality Management District method entitled "Spray Equipment Transfer Efficiency Test Procedure for Equipment Users".
3. ROC composite pressure of a solvent shall be calculated using a widely accepted published source such as: Boublik, T., V. Fried and E. Hala, "The Vapor Pressure of Pure Substances," Elsevier Scientific Publishing Co., New York (1973), Perry's Chemical Engineer's Handbook, McGraw-Hill Book Company, CRC Handbook of Chemistry and Physics, Chemical Rubber Publishing Company (1986-87), and Lange's Handbook of Chemistry, John A. Dean, editor, McGraw-Hill Book Company (1985). The true vapor pressure of a component in a solvent mix may be determined by ASTM Method D2879-86. The ROC composite pressure of a solvent mix consisting entirely of ROC may be determined by ASTM Method D2879-86.
4. The capture and control efficiency of air pollution control equipment shall be determined according to EPA's technical document, "Guidelines for Determining Capture Efficiency," January 9, 1995, and methods in 40 CFR 52.741 (a)(4)(iv) Control Device Efficiency Testing and Monitoring.
5. The acid content of pretreatment wash primers and etching fillers shall be determined by ASTM D1613-85.
6. The solids content of etching fillers shall be determined using EPA Reference Method 24.
7. The metal content of metallic coatings shall be determined by Spectrographic Method 311 in the South Coast Air Quality Management District manual, "Laboratory Methods of Analysis for Enforcement Samples".
8. The active and passive solvent losses from spray gun cleaning systems shall be determined using South Coast Air Quality Management District's "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems" dated October 3, 1989. The test solvent for this determination shall be any lacquer thinner with a minimum vapor pressure of 105 mm Hg at 20° C. The minimum test temperature shall be 15° C.

F. Violations

Failure to comply with any provision of this rule, including the maintenance of records, is a violation of this rule.

G. Definitions

1. "Active Solvent Losses": Emissions during all steps of a spray gun equipment cleaning operation, expressed as grams of solvent loss per cleaning cycle.
2. "Aerosol Coating Product"; A pressurized coating product containing pigments or resins that dispenses product ingredients by means of a propellant, and is packaged in a disposable can for hand held application, or for use in specialized equipment for ground traffic/marketing applications.
3. "Aircraft or Aerospace Vehicle": A fabricated part, assembly of parts or completed unit of any aircraft, helicopter, missile or space vehicle.
4. "Air-Dried Coating": Any coating which is not heated above 90°C (194°F) for the purpose of curing or drying.
5. "Baked Coating": Any coating which is cured or dried in an oven where the oven air temperature exceeds 90°C (194°F).
6. "Camouflage Coating": A coating that functions to conceal equipment from detection.
7. "Carbon Adsorber": A device that adsorbs ROC from a gaseous stream onto the surface of activated carbon.
8. "Catalytic Incinerator": A device that burns ROC in air using a material that increases the rate of combustion without itself undergoing a net chemical change in the process. Common catalyst materials include but are not limited to, platinum alloys, chromium, copper oxide, and cobalt.
9. "Cleanup": The removal of uncured coating from any surface.
10. "Coating": A material applied to a metal surface as a film to beautify and/or protect the surface.
11. "Control Device Efficiency": The percentage by weight of ROC entering a control device that is not emitted to the atmosphere.
12. "Electrostatic Application": The charging of atomized paint droplets to cause deposition by electrostatic attraction.

13. "Etching Filler": A coating that contains less than 23 percent solids by weight and at least 1/2 percent acid by weight, and is used instead of a pretreatment wash primer on a metal substrate prior to a primer.
14. "Exempt Organic Compounds": As defined in Rule 2, Definitions, of these rules.
15. "Extreme Performance Coating": Any coating except a zinc filled primer, a laboratory furniture coating, or a pretreatment coating that is exposed to any of the following conditions:
  - a. Industrial-grade detergents, cleaners, or abrasive scouring agents.
  - b. Unprotected shipboard conditions.
  - c. Frequent or chronic exposure to salt water, corrosives, caustics, acids, or oxidizing chemicals.
  - d. Other similar or more harsh environmental conditions as determined in writing by the APCO.
16. "Grams of ROC per liter of coating, less water and exempt organic compounds": The weight of ROC per combined volume of ROC and coating solids calculated as follows:

$$\text{Grams of ROC per Liter of Coating Less Water and Less Exempt Organic Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where:

$W_s$	=	Weight of volatile compounds (grams)
$W_w$	=	Weight of water (grams)
$W_{es}$	=	Weight of exempt organic compounds (grams)
$V_m$	=	Volume of material (liters)
$V_w$	=	Volume of water (liters)
$V_{es}$	=	Volume of exempt organic compounds (liters)

17. "Grams of ROC per liter of material": The weight of ROC per volume of material calculated as follows:

$$\text{Grams of ROC per liter of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where:

$W_s$	=	Weight of volatile compounds (grams)
$W_w$	=	Weight of water (grams)
$W_{es}$	=	Weight of exempt organic compounds
$V_m$	=	Volume of material (liters)

18. "Gun Washer": Electrically or pneumatically operated system that is designed to clean spray application equipment while enclosed. A gun washer may also be considered a gun cleaning system that consists of spraying solvent into an enclosed container using a snug fitting.
19. "Hand Application Methods": The application of coatings by nonmechanical hand-held equipment including but not limited to paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags and sponges.
20. "Heat Resistant Coating": Any applied coating that, after curing, must withstand a temperature of at least 204° C (400° F) during normal use.
21. "High Gloss Coating": Any coating which when tested in accordance with ASTM Test Method D523-89 has a reflectance of 85 percent or more on a 60 degree meter.
22. "High Performance Architectural Coating": Any coating used to protect architectural subsections and which is required to meet the specifications of the Architectural Aluminum Manufacturer Association's publication number AAMA 605.2-1992.
23. "High Temperature Coating": Any coating that after curing, must withstand a temperature of at least 538 °C (1000 °F) during normal use.
24. "High Volume Low Pressure Application (HVLP)": Spray equipment which uses a high volume of air delivered at pressures between 0.1 and 10 psig and which operates at a maximum fluid delivery pressure of 50 psig.
25. "Leak": The dripping of three or more drops per minute of ROC containing liquids.
26. "Low Emissions Spray Gun Cleaner": Any properly used spray equipment cleanup device which has passive solvent losses of no more than 0.6 grams per hour and has active solvent losses of no more than 15 grams per operating cycle as determined by the test method in Subsection E.8.
27. "Metallic Coating": Any coating, except zinc filled primer, which contains 5 grams of metal particles per liter of coating, as applied, where such particles are visible in the dried film.
28. "Metal Part or Product": Any component or complete unit fabricated from metal, not including stationary structures or their appurtenances, marine vessel exteriors, aerospace vehicles and components, and motor vehicles and mobile equipment.
29. "Mold-Seal Coating": The initial coating applied to a new or repaired mold to prevent products from sticking to the mold.

30. "Operation": The coating, surface preparation, and cleaning of metal parts or products and any associated activities including but not limited to the cleaning of coating application equipment.
31. "Pan Backing Coating": Any coating applied to the surface of pots, pans, or other cooking utensils that are exposed directly to a flame or other heating elements.
32. "Passive Solvent Losses:" Emissions resulting from natural vaporization of solvent from spray gun cleaning equipment not being used in a cleaning cycle.
33. "Powder Coating": Any coating applied as fine particle solids with less than 4 percent by weight ROC or other liquid carriers.
34. "Pretreatment Wash Primer": Any coating which contains at least one half percent acid by weight to provide surface etching, corrosion resistance, adhesion, and ease of stripping when applied to a metal surface.
35. "Reactive Organic Compounds": As defined in Rule 2, Definitions, of these rules.
36. "ROC Composite Partial Pressure": The sum of the partial pressures of the compounds defined as ROCs. ROC composite partial pressure is calculated as follows:

$$PP_c = \frac{\sum_{i=1}^n \left( \frac{W_i}{MW_i} \right) (VP_i)}{\left( \frac{W_w}{MW_w} \right) + \sum_{e=1}^n \left( \frac{W_e}{MW_e} \right) + \sum_{i=1}^n \left( \frac{W_i}{MW_i} \right)}$$

Where:

- $W_i$  = Weight of the "i"th ROC compound, in grams  
 $W_w$  = Weight of water, in grams  
 $W_e$  = Weight of the "e"th exempt organic compound, in grams  
 $MW_i$  = Molecular weight of the "i"th ROC compound, in g/(g-mole)  
 $MW_w$  = Molecular weight of water, in g/(g-mole)  
 $MW_e$  = Molecular weight of the "e"th exempt compound, in g/(g-mole)  
 $PP_c$  = ROC composite partial pressure at 20 C, in mm Hg  
 $VP_i$  = Vapor pressure of the "i"th ROC compound at 20 C, in mm Hg.

37. "ROC Content": For coatings, ROC (VOC) content means the grams of ROC per liter of coating, less water and less exempt organic compounds. For liquid cleaning materials and other ROC containing materials, ROC content means the grams of ROC per liter of material.
38. "Silicone Release Coating": Any coating which contains silicone resin and functions to prevent food from sticking to metal surfaces such as baking pans.

39. "Solar Absorbent Coating": Any coating which has as its prime purpose the absorption of solar radiation.
40. "Substrate Surface Cleaning": Cleaning of a substrate to remove dirt, oils, and other contaminants. Substrate surface cleaning is typically done prior to the application of surface coatings, adhesive bonding materials, or sealants.
41. "Thermal Incinerator": A device that burns ROC in air by direct application of heat. Thermal incinerators are usually equipped with burners, refractory lined chambers, heat recovery equipment, and process controllers.
42. "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.
43. "Vacuum Metalizing Coating": Any undercoat applied to a substrate prior to application of a metal film, or an overcoat applied directly to the metal film.
44. "Volatile Organic Compounds (VOC)": Reactive organic compounds (ROC).
45. "Zinc Filled Primer": Any coating which has an elemental zinc content of not less than 240 grams/liter (2.0 pounds per gallon) as applied.