

REGULATION IV  
PROHIBITIONS

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RULE 434 COATING OF METAL PARTS AND PRODUCTS

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*(Adopted 6-15-94; Revised 12-18-96 and 1-17-01).*

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PART 1 GENERAL

1.1 Purpose

The purpose of this Rule is to reduce volatile organic compound emissions from the application of coatings to metal parts and products.

1.2 Applicability

Except as otherwise provided for in Section 1.3, the provisions of this Rule are applicable to the use of surface coatings applied to metal parts and products.

1.3 Exemptions

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- 1.3.1 Coatings complying with the provisions of this Rule shall be exempt from provisions of District Rule 416. Note that cleanup and wipe down solvents are subject to the provisions of District Rule 416.
- 1.3.2 The provisions of this Rule shall not apply to aircraft or aerospace vehicle coatings, marine vessel exteriors, plastic coatings, magnetic wire coatings, motor vehicle coatings and mobile equipment coatings.
- 1.3.3 The provisions of this Rule shall not apply to stencil coatings, safety temperature-indicating coatings, powder coatings, and adhesives.
- 1.3.4 The provisions of this Rule shall not apply to any combination of coatings used for coating metal parts and products in a total volume less than 55 gallons/year (208 liters/year) per facility .
- 1.3.5 The provisions of this Rule shall not apply to coatings sold in non-refillable aerosol containers regulated under Sections 94520 - 94528 of Title 17 of the California Code of Regulations.
- 1.3.6 For purposes of this Rule, exempt compounds, as defined in Section 2.11, are not to be considered volatile organic compounds.

### 1.4 Effective Dates

The requirements of this Rule as most recently revised is effective January 17, 2001.

### 1.5 References

The requirements of this Rule arise from the requirements of Section 182(b)(2) of the federal Clean Air Act (Title 42 United States Code Section 7401 *et seq.*).

## PART 2 DEFINITIONS

### 2.1 Adhesive

Any substance that is used to bond surfaces together by attachment.

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2.2 Aerosol Container

A hand-held, non-refillable container which expels pressurized product ingredients by means of a propellant-induced force.

2.3 Aircraft or Aerospace Vehicle Coating

A coating applied to a fabricated part, an assembly of parts or completed unit of any aircraft, helicopter, missile or space vehicle.

2.4 Air-dried Coating

A coating that is cured at a temperature below 194°F (90°C) .

2.5 Baked Coating

A coating that is cured at a temperature at or above 194°F (90°C).

2.6 Camouflage Coating

A coating used to conceal equipment from detection.

2.7 Coating

A material which is applied to a surface and which forms a continuous film in order to beautify and/or protect such surface.

2.8 Combined Efficiency

The capture efficiency multiplied by the control efficiency, expressed as an overall weight percent.

2.9 Emissions Control Device

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A device which removes or destroys emissions of VOC to the atmosphere from the exhaust stream of a process.

2.10 Etching Filler

A coating that contains less than 23 percent solids by weight and at least 0.5 percent acid by weight, and is used instead of a pretreatment wash primer coating on a metal substrate, usually prior to a primer coating.

2.11 Exempt Compounds

As defined in District Rule 101 (Definitions).

2.12 Extreme-performance Coating

A coating used on a metal surface where the coated surface is, in its intended use, exposed to any of the following:

- 2.12.1 industrial-grade detergents, cleaners, or abrasive scouring agents;
- 2.12.2 unprotected shipboard conditions;
- 2.12.3 frequent or chronic exposure to salt water, corrosives, caustics, acids, or oxidizing chemicals;
- 2.12.4 other similar or harsher environmental conditions as determined in writing by the Air Pollution Control Officer of the Monterey Bay Unified Air Pollution Control District.

2.13 Heat-resistant Coating

A coating applied to a substrate that must withstand a temperature of at least 400°F (204°C) during normal use.

2.14 High-gloss Coating

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A coating which has a reflectance of 85 percent or more on a 60° meter, when tested in accordance with ASTM Test Method D-523-1980, or its successors as amended.

2.15 High-performance Architectural Coating

A coating used to protect architectural substrates fabricated in a shop and which is required to meet the specifications of the Architectural Aluminum Manufacturer Association's Publication number AAMA 605.2-1980.

2.16 High-temperature Coating

A coating applied to a substrate that must withstand a temperature of 1000°F (538°C) during normal use.

2.17 Metal Parts and Products

Components or complete units fabricated from metal, excluding marine vessel exteriors, aerospace vehicles and components, motor vehicles and mobile equipment.

2.18 Metallic Top Coating

A coating which contains more than 0.042 pounds of metal particles per gallon (5 grams of metal particles per liter) of coating, as applied, where such particles are visible in the dried film.

2.19 Mobile Equipment

Any equipment which may be drawn or is capable of being driven on a roadway, including, but not limited to, truck bodies, truck trailers, camper shells, mobile cranes, bulldozers, concrete mixers, street cleaners, golf carts, all terrain vehicles, implements of husbandry, and hauling equipment used at airports, docks, depots, and industrial and commercial plants, excluding utility bodies.

2.20 Mold-seal Coating

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The initial coating applied to a new mold or repaired mold to provide a smooth surface which, when coated with a mold release coating, prevents products from sticking to the mold.

2.21 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 elements.

2.22 Powder Coating

Any coating applied as dry finely divided solid (without solvent or other carrier) which, when melted and fused, adheres to the substrate as a paint film.

2.23 Pretreatment Wash Primer

A coating which contains no more than 12 percent solids by weight, and at least 0.5 percent acid, by weight, is used to provide surface etching, corrosion resistance, adhesion, and ease of stripping when applied to metal surfaces.

2.24 Repair Coating

A coating used to recoat portions of a product which has sustained mechanical damage to the coating following normal painting operations.

2.25 Safety Temperature-indicating Coating

A coating which changes physical characteristics, such as color, to indicate unsafe temperature conditions.

2.26 Silicone-release Coating

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Any coating which contains silicone resin and is intended to prevent food from sticking to metal surfaces such as baking pans.

2.27 Solar-absorbent Coating

A coating which has as its prime purpose the absorption of solar radiation.

2.28 Stencil Coating

A coating which is rolled or brushed onto a template or stamp in order to add identifying figures to metal parts and products.

2.29 Substrate

A part, substance, or foundation to be acted upon.

2.30 Textured Finish

A rough surface produced by spraying large drops of coating onto a previously applied coating.

2.31 Touch-up Coating

A coating used to cover minor coating imperfections appearing after the main coating operation.

2.32 Utility Body

A special purpose compartment or unit that will be bolted, welded, or affixed onto an existing cab and chassis. The compartment may serve as storage for equipment or parts.

2.33 Vacuum-metalizing Coating



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The undercoat applied to the substrate on which the metal is deposited or the overcoat applied directly to the metal film.

### 2.34 Volatile Organic Compound (VOC)

As defined in District Rule 101 (Definitions).

## PART 3 REQUIREMENTS AND STANDARDS

### 3.1 VOC Content of Coatings

A person shall not apply to affected metal parts and products any coating with a VOC content (including any VOC-containing materials added to the original coating supplied by the manufacturer), less water and less exempt compounds, in excess of the limits identified below. The VOC content shall be calculated in accordance with the method identified in Section 4.3.1.

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COATING LIMITS

Grams of VOC per Liter/Pounds per Gallon of Coating  
Less Water and Less Exempt Compounds

COATING CATEGORY	BAKED		AIR-DRIED	
	<u>grams/liter</u>	<u>lbs/gal</u>	<u>grams/liter</u>	<u>lbs/gal</u>
<i>GENERAL COATING LIMITS</i>	360	3.0	420	3.5
<i>SPECIALTY COATING LIMITS</i>				
Camouflage	360	3.0	420	3.5
Etching Filler	420	3.5	420	3.5
Extreme Performance	420	3.5	420	3.5
Heat-Resistant	420	3.5	420	3.5
High Gloss	360	3.0	420	3.5
High Performance-Architectural	420	3.5	420	3.5
High Temperature	420	3.5	420	3.5
Metallic	360	3.0	420	3.5
Mold-Seal	420	3.5	420	3.5
Pan Backing	420	3.5	420	3.5
Pretreatment Wash Primer	780	6.5	780	6.5
Silicone Release	420	3.5	420	3.5
Solar-Absorbent	360	3.0	420	3.5
Vacuum-Metalizing	420	3.5	420	3.5

3.2 Add-on Controls Alternative

In lieu of complying with the VOC content limitations in Section 3.1, add-on controls may be used provided:

- 3.2.1 the combined efficiency of capture and control of the system is not less than 90 percent by weight in reducing volatile organic compounds;
- 3.2.2 The Air Pollution Control Officer issues written approval for such equipment in the form of an Authority to Construct and Permit to Operate containing monitoring requirements including but not limited to:

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- 3.2.2.1 Monitoring equipment shall be used in accordance with vendor or manufacturer specifications.
- 3.2.2.2 When operating a thermal incinerator, combustion temperature shall be continuously monitored.
- 3.2.2.3 When operating a catalytic incinerator, exhaust gas and inlet gas temperature shall be continuously monitored.
- 3.2.2.4 When operating a carbon adsorber or emission control system other than a thermal or catalytic incinerator, daily emission control device efficiency shall be monitored.

3.3 Extreme-Performance Coating Qualification

A person shall apply to and receive approval from the Air Pollution Control Officer (APCO) to have a coating classified as an extreme-performance coating prior to application of such coating. The APCO may classify a coating as an extreme performance coating provided that the petitioner demonstrates that the intended use of each coated object requires an extreme-performance coating and has successfully demonstrated that general coating limits contained in Section 3.1 are unsuitable. This classification shall be effective for one year. Such classification must be renewed annually.

PART 4 ADMINISTRATIVE REQUIREMENTS

4.1 Record-keeping Requirements

4.1.1 Record-keeping of Use of Coatings Identified in Section 3.1.

- 4.1.1.1 Any person subject to this Rule shall maintain written monthly records necessary to demonstrate compliance. Information to be collected shall include at least the items identified below. The information shall be available for review by District personnel. The District may request that additional information be provided if it is necessary to determine compliance with the rule.

- 4.1.1.1.1 types of all coatings used;

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- 4.1.1.1.2 name of each coating and manufacturer;
- 4.1.1.1.3 VOC content of each coating;
- 4.1.1.1.4 VOC, water and exempt compound content of reducers;
- 4.1.1.1.5 mix ratios of coatings and reducers;
- 4.1.1.1.6 applicable coating category for each coating used, as indicated in Section 3.1.

4.1.2 Record-keeping for Claiming Exemptions to this Rule

4.1.2.1 Any person claiming the 55 gallon per year exemption pursuant to Subsection 1.3.4 of this Rule and using only materials complying with VOC content limits in Section 3.1 shall maintain monthly records containing the following information:

- 4.1.2.1.1 types of all coatings used;
- 4.1.2.1.2 name of each coating and manufacturer;
- 4.1.2.1.3 VOC content of each coating;
- 4.1.2.1.4 volume of all coatings;
- 4.1.2.1.5 VOC, water and exempt compound content of reducers;
- 4.1.2.1.6 mix ratios of coatings and reducers;
- 4.1.2.1.7 applicable coating category for each coating used, as indicated in Section 3.1.

4.1.2.2 Any person claiming the 55 gallon per year exemption pursuant to Subsection 1.3.4 of this Rule shall maintain daily records containing the following information for each day that coatings are used that exceed the VOC content limits of Section 3.1:

- 4.1.2.2.1 types of all coatings used;
- 4.1.2.2.2 name of each coating and manufacturer;

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- 4.1.2.2.3 VOC content of each coating;
- 4.1.2.2.4 volume of all coatings;
- 4.1.2.2.5 VOC, water and exempt compound content of reducers;
- 4.1.2.2.6 mix ratios of coatings and reducers;
- 4.1.2.2.7 applicable coating category for each coating used, as indicated in Section 3.1.

4.1.3 Record-keeping for Add-on Controls Alternative

- 4.1.3.1 Any person complying with the add-on control alternative technology provision of this Rule pursuant to Section 3.2 shall keep the following written daily records:

- 4.1.3.1.1 Capture and control system and monitoring equipment log of operating time.
- 4.1.3.1.2 Capture and control system and monitoring equipment, log detailing all routine and non-routine maintenance performed, including dates and durations of any equipment outages.
- 4.1.3.1.3 Daily records of the applicable monitoring information required by Sections 3.2.2.1, 3.2.2.2, 3.2.2.3, and 3.2.2.4 to demonstrate the continuous, compliant operation of the emission control device during periods of emission producing activities.

- 4.1.4 All written records required by Section 4.1 shall be maintained for a minimum of five (5) years and be available for inspection by the APCO.

4.2 Test Methods

4.2.1 VOC Content

- 4.2.1.1 The VOC content of any water-based coating subject to this Rule shall be determined using Bay Area Air Quality Management District Method

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31 (Determination of Volatile Organic Compounds in Paint Strippers, Solvent Cleaners and Low-Solids Coatings).

4.2.1.2 The VOC content of any other coating subject to the provisions of this Rule shall be determined using EPA Method 24 (Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings) in 40 Code of Federal Regulations Part 60, Appendix A.

4.2.2 Exempt Compounds Content

4.2.2.1 The quantity of exempt compounds and water in water-based coatings subject to this Rule shall be determined using Bay Area Air Quality Management District Method 31 (Determination of Volatile Organic Compounds in Paint Strippers, Solvent Cleaners and Low-Solids Coatings).

4.2.2.2 The quantity of exempt compounds in any other class of coatings subject to this Rule shall be performed in accordance with ASTM D-4457-85 (Solvents and Coatings), or its successors as amended, and be consistent with the provisions set forth in the Federal Register (FR, Vol. 56, No. 52, March 18, 1991).

4.2.3 Acid Content

Measurement of acid content shall be conducted and reported in accordance with ASTM Test Method D 1613-85, or its successors as amended.

4.2.4 Metal Content

Measurement of metal content shall be conducted and reported in accordance with the South Coast Air Quality Management District's Method 318, or its successor as amended.

4.2.5 Solids Content of Etching Fillers

The solids content of etching fillers shall be determined using EPA Reference Method 24 (40 CFR 60, Appendix A).

4.2.6 Initial Boiling Point of Liquid Containing VOC

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Determinations of the initial boiling point of liquid containing VOC shall be performed in accordance with ASTM D 1078-86, or its successors as amended.

4.2.7 Capture Efficiency

The capture efficiency of an emissions control device shall be determined according to EPA's technical document, "Guidelines for Determining Capture Efficiency," January 9, 1995.

4.2.8 Control Efficiency

The control efficiency of air an emissions control device shall be determined using EPA Methods 2, 2A, 2C, or 2D for measuring flow rates and EPA Methods 25, 25A, or 25B for measuring the total gaseous organic concentrations at the inlet and outlet of the emissions control device as contained in 40 Code of Federal Regulations Part 60, Appendix A.

4.2.9 Volumetric Flow Rate

Volumetric flow rate shall be determined by EPA Methods 2, 2A, 2C and 2D.

4.3 Method for Calculation of Grams of VOC per Liter

4.3.1 Grams of VOC Per Liter of Coating Less Water and Less Exempt Compounds is the weight of VOC per combined volume of VOC and coating solids and is calculated by the following equation:

Grams of VOC per liter of Coating Less Water and Less Exempt Compounds

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

Where:

- $W_s$  = weight of volatile compounds, in grams
- $W_w$  = weight of water, in grams
- $W_{es}$  = weight of exempt compounds, in grams
- $V_m$  = volume of coating material, in liters
- $V_w$  = volume of water, in liters
- $V_{es}$  = volume of exempt compounds, in liters

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