

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

RULE 4610 -- GLASS COATING OPERATIONS

(Adopted May 16, 2002)

1.0 Purpose

The purpose of this rule is to limit volatile organic compounds (VOCs) emissions from the coating of glass products.

2.0 Applicability

The requirements of this rule shall apply to major source facilities, which coat glass products with VOC containing materials.

3.0 Definitions

3.1 Aerosol Coating Product: any 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.

3.2 Clear Coating: a colorless coating, which contains binders, but no pigment, and is formulated to form transparent film.

3.3 Coating: a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

3.4 Coating Application Equipment: any equipment used to apply coating to a substrate. Coating application equipment includes coating distribution lines, coating hoses, pressure-pots, spray guns, and hand-application equipment.

3.5 Curtain/Flow Coater: a type of coating application equipment that coats an object by flowing a stream of coating over the object and draining off any excess coating.

3.6 Dip Coater: a type of application equipment that coats an object by submerging the object in a vat of coating, and subsequently withdrawing the object and draining off the excess coating.

3.7 Electric Dissipating Coating: a coating that rapidly dissipates a high-voltage electric charge.

3.8 Electrostatic Application: a method of applying coating whereby atomized paint droplets are charged and subsequently deposited on the substrate by electrostatic attraction.

- 3.9 Grams Of VOC Per Liter Of Coating, Less Water and Less Exempt Compounds: a weight of VOC per combined volume of VOC and coating solids and can be calculated by the following equation:

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

Where:

W_s = 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 material in liters

V_w = volume of water in liters

V_{ec} = volume of exempt compounds in liters

- 3.10 Grams Of VOC Per Liter Of Material: a weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{W_s - W_w - W_{ec}}{V_m}$$

Where:

W_s = 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 material in liters

- 3.11 Hand Application Methods: any method used to apply coating to substrate by manually held, non-mechanically operated equipment. Such equipment includes paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges.
- 3.12 High-Volume, Low-Pressure (HVLP) Spray: a coating application system which is operated at air pressure between 0.1 and 10 pounds per square inch gauge (psig).
- 3.13 Ink: a fluid that contains dyes and/or colorants, and is used to make markings but not to protect surfaces.
- 3.14 Major Source: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).
- 3.15 Metallic Coating: a coating, which contains more than 5 grams of metal particles per liter of coating as, applied.
- 3.16 Metal Particles: any pieces of a pure elemental metal or a combination of elemental metals.

- 3.17 Mirror Backing: a coating applied over the silvered surface of a mirror.
- 3.18 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
- 3.19 Optical Coating: a coating applied to an optical lens.
- 3.20 Repair Coating: a coating used to re-coat portions of a previously coated product, which has sustained mechanical damage to the coating following normal coating operations.
- 3.21 Roll Coater: a type of coating application equipment that utilizes a series of mechanical rollers to form a thin coating film on the surface of a roller, which is then applied to a substrate by moving the substrate underneath the roller.
- 3.22 Shock-Free Coating: a coating applied to electrical components to protect the user from electric shock. The coating has characteristics of being of low capacitance and high resistance, and having resistance to breaking down under high voltage.
- 3.23 Stencil Coating: an ink or a coating which is rolled or brushed onto a template or stamp in order to add identifying letters and/or numbers.
- 3.24 Touch-up Coating: a coating used to cover minor imperfections appearing after the main coating operation.
- 3.25 Transfer Efficiency: a 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.
- 3.26 Translucent Coating: a coating, which contains binders and pigment, and is formulated to form a colored, but not opaque, film.
- 3.27 Two-component Coating: a coating requiring the addition of a separate reactive resin, commonly known as a catalyst, before application to form an acceptable dry film.
- 3.28 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).

4.0 Exemptions

The provisions of this rule shall not apply to the following:

- 4.1 Touch-up and repair coatings;
- 4.2 Stencil coatings applied on clear or transparent substrates;

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

4.4 Aerosol coating products.

5.0 Requirements

5.1 A person shall not apply on glass any coating, which exceeds the VOC content limit specified below:

COATING	VOC LIMITS	
	Less Water and Less Exempt Compounds Effective on and after 12/1/2002	
	g/L	lb/gal
General Coatings		
One-component	275	2.3
Two-component	420	3.5
Mirror Backing		
Curtain Coated	500	4.2
Roll Coated	430	3.6
Optical Coatings	800	6.7
Electric Dissipating Coatings and Shock-Free Coatings	360	3.0
Metallic Coatings	420	3.5

5.2 Prohibition of Specification

A person shall not specify the use, in the District, of any coating to be applied to any glass subject to the provisions of this rule that does not meet the limits and requirements of this rule. The requirements of this paragraph shall apply to all written or oral contracts.

5.3 Solvent cleaning operations and the storage and disposal of VOC-containing materials are subject to the provisions of Rule 4663 (Organic Solvent Cleaning, Storage and Disposal).

5.4 Transfer Efficiency

A person shall not apply coatings unless the coating is applied with equipment operated according to the manufacturer's specifications, and by the use of one of the following methods:

- 5.4.1 electrostatic application; or
- 5.4.2 curtain/flow coater; or
- 5.4.3 roll coater; or
- 5.4.4 dip coater; or

- 5.4.5 hand application methods; or
- 5.4.6 high-volume, low-pressure (HVLP) spray

5.5 Air Pollution Control Equipment

A person may comply with the provisions in Sections 5.1 and 5.4 by using air pollution control equipment, provided that the VOC emissions from such operations or materials are reduced in accordance with provisions of sections 5.5.1 and 5.5.2 below:

- 5.5.1 The owner/operator demonstrates that the system has a capture efficiency of at least 90 percent of the VOC emissions generated by the sources of emissions.
- 5.5.2 The control device shall reduce VOC emissions from an emission collection system by at least 95 percent.

6.0 Administrative Requirements

6.1 Recordkeeping

Any person subject to the requirements of Section 5.0 of this rule shall maintain records which show on a daily basis, the following information:

- 6.1.1.1 type of coating;
- 6.1.1.2 the VOC content of each coating, as applied, less water and exempt compounds
- 6.1.1.3 the VOC content of each material, as applied, including water and exempt compounds;
- 6.1.1.4 the specific mixing ratio for the coating, hardeners, catalysts, solvents, diluents, and thinners, if applicable;
- 6.1.1.5 the method of application and substrate type;
- 6.1.1.6 oven temperature (for coating operations), if applicable.

6.2 Records of disposed waste solvent or waste solvent residues shall be kept in accordance with Rule 4663.

6.3 Effective on or after May 16, 2002, records shall be maintained for a minimum of five years and made available for inspection to the APCO upon request.

6.4 Any person using an add-on emission control system as a means of complying with the provisions in Section 5.0 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 VOC limits. The parameters may include, but are not limited to, temperatures, pressures, and flow rates.

6.2 Test Methods

6.2.1 The VOC content of materials subject to the provisions of this rule shall be determined by the following USEPA Test Methods or any other method approved by the USEPA, the California Air Resources Board, and the APCO:

6.2.1.1 United States Environmental Protection Agency (USEPA) Test Method 24 (Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings, Code of Federal Regulations Title 40, Part 60, Appendix A).

6.2.1.2 Exempt VOC compounds' content shall be determined by SCAQMD Method 303 (Determination of Exempt Compounds) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

6.2.2 Determination of Efficiency of Emission Control System

Capture efficiency specified in Section 5.5, shall be determined by the following USEPA Test Methods or any other method approved by the USEPA, the California Air Resources Board, and the APCO:

6.2.2.1 USEPA Method 204A (VOCs in Liquid Input Stream),

6.2.2.2 Method 204B (VOCs in Captured Stream),

6.2.2.3 Method 204C (VOCs in Captured Stream Dilution Technique),

6.2.2.4 Method 204D (Fugitive VOCs from Temporary Total Enclosure),

6.2.2.5 Method 204E (Fugitive VOCs from Building Enclosure),

6.2.2.6 Method 204F (VOCs in Liquid Input Stream Distillation), and

6.2.2.7 USEPA Method 204 (Permanent or Temporary Total Enclosure (TTE) for Determining Capture Efficiency).

6.2.2.8 The efficiency of the control device of the emission control system as specified in Section 5.5 and the VOC content in the control device exhaust gases, measured and calculated as carbon,

shall be determined by the USEPA Test Method 25, or 25A. USEPA Test Method 18 or ARB Method 422 shall be used to determine emissions of exempt compounds.

6.2.3 Demonstration of transfer efficiency shall be conducted in accordance with SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989", or any other method approved by the USEPA, the California Air Resources Board, and the APCO.

6.2.4 Multiple Test Methods

VOC emissions and overall capture and control efficiency determined to exceed any limits established by this rule through the use of any of the above-referenced test methods and/or equations shall constitute a violation of the rule. All test methods referenced in this section shall be the most recently approved version.

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