

(Adopted: 07/08/83; Amended: 12/05/86; Amended: 02/06/87;
Amended: 04/03/87; Amended: 08/07/87; Amended: 12/02/88;
Amended: 02/03/89; Amended: 04/07/89; Amended: 03/02/90;
Amended: 11/02/90; Amended: 12/07/90; Amended: 08/02/91;
Amended: 01/10/92; Amended: 03/08/96; Amended: 02/14/97)

RULE 1145

Plastic, Rubber, And Glass Coatings

(a) Purpose and Applicability

The purpose of Rule 1145 is to reduce volatile organic compounds (VOC) emissions from the application of coatings to any plastic, rubber or glass products.

(b) Definitions

For the purposes of this rule, the following definitions shall apply:

- (1) AEROSOL COATING PRODUCT is 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.
- (2) AIR BRUSH OPERATIONS are conducted with a type of coating application equipment that operates at air pressure between 25 psi and 116 psi and an air volume of .7 cfm and 1.75 cfm respectively. These operations apply a very thin film of coating to a substrate from a paint reservoir of eight ounces or less.
- (3) CARPET BACKING is the material applied to the unnapped surface of a carpet.
- (4) CLEAR COATING is a colorless coating which contains binders, but no pigment, and is formulated to form a transparent film.
- (5) COATING means a layer of material applied on a substrate that forms a film.
- (6) COATING APPLICATION EQUIPMENT is 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.
- (7) DIP COATER is 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.
- (8) ELECTRIC DISSIPATING COATING is a coating that rapidly dissipates a high-voltage electric charge.

- (9) **ELECTROSTATIC APPLICATION** is a method of applying coating whereby atomized paint droplets are charged and subsequently deposited on the substrate by electrostatic attraction.
- (10) **EMI/RFI SHIELDING** is a coating used on electrical or electronic equipment to provide shielding against electromagnetic interference, radio frequency interference, or static discharge.
- (11) **EXEMPT COMPOUNDS** (See Rule 102-Definition of Terms).
- (12) **FLOW COATER** is 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.
- (13) **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 can be calculated by the following equation:

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

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 material in liters
 V_w = volume of water in liters
 V_{es} = volume of exempt compounds in liters

- (14) **GRAMS OF VOC PER LITER OF MATERIAL** is the weight of VOC per volume of material and can be calculated by the following equation:

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

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 material in liters

- (15) **HAND-APPLICATION METHODS** are the methods 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.

- (16) HIGH-VOLUME, LOW-PRESSURE (HVLP) SPRAY is a coating application system which is operated at air pressure between 0.1 and 10 pounds per square inch gauge (psig)
- (17) HIGHWAY CONES are cones used to regulate traffic.
- (18) INK is a fluid that contains dyes and/or colorants, and is used to make markings but not to protect surfaces.
- (19) MASK COATING is thin film coating applied through a template to coat a small portion of a substrate.
- (20) METALLIC COATING is a coating which contains more than 5 grams of metal particles per liter of coating as applied.
- (21) METAL PARTICLES are pieces of a pure elemental metal or a combination of elemental metals.
- (22) MILITARY SPECIFICATION COATING is a coating which has a formulation approved by the United States Military Agency for use on military equipment.
- (23) MIRROR BACKING is the coating applied over the silvered surface of a mirror.
- (24) MOLD SEAL COATING is the initial coating applied to a new mold or a repaired mold to provide a smooth surface which, when coated with a mold release coating, prevents products from sticking to the mold.
- (25) MOTOR VEHICLE is a passenger car, light-duty truck, medium-duty vehicle, or heavy-duty vehicle as defined in Section 1900, Title 13, California Administrative Code.
- (26) MULTI-COLORED COATING is a coating which exhibits more than one color when applied, and which is packaged in a single container and applied in a single coat.
- (27) ONE-COMPONENT COATING is 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.
- (28) OPTICAL COATING is a coating applied to an optical lens.
- (29) REPAIR COATING is a coating used to re-coat portions of a previously coated product which has sustained mechanical damage to the coating following normal coating operations.
- (30) ROLL COATER is 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.

- (31) **SHOCK-FREE COATING** is 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.
- (32) **STENCIL COATING** is an ink or a coating which is rolled or brushed onto a template or stamp in order to add identifying letters and/or numbers.
- (33) **TOUCH-UP COATING** is a coating used to cover minor imperfections appearing after the main coating operation.
- (34) **TRANSFER EFFICIENCY** is 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.
- (35) **TRANSLUCENT COATING** is a coating which contains binders and pigment, and is formulated to form a colored, but not opaque, film.
- (36) **TWO-COMPONENT COATING** is a coating requiring the addition of a separate reactive resin, commonly known as a catalyst, before application to form an acceptable dry film.
- (37) **VACUUM METALIZING** is the process whereby metal is vaporized and deposited on a substrate in a vacuum chamber.
- (38) **VOLATILE ORGANIC COMPOUND (VOC)** is any compound which contains the element carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds.

(c) **Requirements**

- (1) **Prohibition of Specifications**

A person shall not specify the use, in the District, of any coating to be applied to any glass, rubber, or plastic 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.

- (2) A person shall not apply on plastics, glass, or rubber any coatings which are applied with a VOC content in excess of the limits specified below:

COATING

VOC LIMITS

	<u>Less Water and Less Exempt Compounds</u>			
	<u>Current</u>		<u>On and After 1-1-98</u>	
	<u>g/L</u>	<u>lbs/gal</u>	<u>g/L</u>	<u>lbs/gal</u>
General Coatings				
One-component	275	2.3	275	2.3
Two-component	420	3.5	420	3.5
Military Spec. Coating				
One-component	340	2.8	340	2.8
Two-component	420	3.5	420	3.5
Multi-Colored Coatings	685	5.7	685	5.7
Mold Seal Coatings	750	6.3	750	6.3
Vacuum Metalizing Coatings	800	6.7	800	6.7
Mirror Backing				
Curtain Coated	500	4.2	500	4.2
Roll Coated	430	3.6	430	3.6
Optical Coatings	800	6.7	800	6.7
Electric Dissipating Coatings and Shock-Free Coatings	800	6.7	360	3.0
Metallic Coatings	420	3.5	420	3.5

(3) Solvent Cleaning Operations; Storage and Disposal of VOC-containing Materials. Solvent cleaning operations and the storage and disposal of VOC-containing materials are subject to the provisions of Rule 1171 - Solvent Cleaning Operations.

(4) Notwithstanding the provisions of paragraph (c)(2), a person shall not apply on plastics, rubber, or glass any automotive coating used to match the existing coating of motor vehicles, including any VOC-containing materials added to the original coating as supplied by the manufacturer, in excess of the limits specified in Table 1 of subparagraph (c)(1)(A) of Rule 1151 for parts to be used on Group I Vehicles, as defined in Rule 1151, and in Table 2 of subparagraph (c)(1)(B) of Rule 1151 for parts to be used on Group II Vehicles, as defined in Rule 1151.

The provisions of this paragraph shall apply provided that the applicator submits a petition, in writing, to the Executive Officer which demonstrates the need to apply such coatings and receives written approval from the Executive Officer prior to the application of such coatings.

(5) 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:

(A) electrostatic application; or

- (B) flow coater; or
- (C) roll coater; or
- (D) dip coater; or
- (E) hand application methods; or
- (F) high-volume, low-pressure (HVLP) spray; or
- (G) such other coating application methods as are demonstrated to the Executive Officer to be capable of achieving at least 65 percent transfer efficiency, and for which written approval of the Executive Officer and the USEPA has been obtained.

(6) Air Pollution Control Equipment

A person may comply with the provisions of paragraph (c)(2), (c)(4), or (c)(5) by using air pollution control equipment, provided that the VOC emissions from such operations or materials are reduced in accordance with provisions of (A) and (B) below:

- (A) The control device shall reduce VOC emissions from an emission collection system by at least 95 percent, by weight, or the concentration of VOC in the output of the air pollution control device shall be less than 50 PPM calculated as carbon with no dilution.
- (B) The owner/operator demonstrates that the system collects at least 90 percent, by weight, of the VOC emissions generated by the sources of emissions.

(d) Recordkeeping Requirements

Records shall be maintained pursuant to Rule 109.

(e) Compliance Test Methods

For the purpose of this rule, the following test methods shall be used:

- (1) The VOC content of materials subject to the provisions of this rule shall be determined by:

- (A) The United States Environmental Protection Agency (USEPA) Reference 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). The exempt 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 or,
- (B) SCAQMD Method 304 [Determination of Volatile Organic Compounds (VOC's) in Various Materials] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.
- (C) Exempt Perfluorocarbon Compounds

The following classes of compounds: cyclic branched, or linear, completely fluorinated alkanes; cyclic, branched, or linear, completely fluorinated ethers with no unsaturations; cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine, will be analyzed as exempt compounds for compliance with paragraph (c), only at such time as manufacturers specify which individual compounds are used in the coating formulations and identify the United States Environmental Protection Agency, California Air Resources Board, and the SCAQMD approved test methods, used to quantify the amount of each exempt compound.

(2) Determination of Efficiency of Emission Control System

- (A) Capture efficiency specified in paragraph (c)(6), shall be determined by the procedures presented in the USEPA technical guidance document, "Guidelines for Determining Capture Efficiency, January 9, 1995." Notwithstanding the test methods specified by the Guidelines, any other method approved by the USEPA, the California Air Resources Board, and the SCAQMD Executive Officer may be substituted.
- (B) The efficiency of the control device of the emission control system as specified in paragraph (c)(6) and the VOC content in the control device exhaust gases, measured and calculated as carbon, shall be determined by the USEPA Test Method 25, 25A, or SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) as applicable. USEPA Test Method 18, or ARB Method 422 shall be used to determine emissions of exempt compounds.

(3) Multiple Test Methods

When more than one test method or set of methods are 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 the rule.

(4) Demonstration of transfer efficiency shall be conducted in accordance with SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989."

(5) All test methods referenced in this section shall be the most recently approved version.

(f) Alternative Emission Control

A person may achieve compliance with paragraph (c)(2) or (c)(4) by means of an Alternative Emission Control Plan pursuant to Rule 108.

(g) Rule 442 Applicability

Any coating, coating operation, or facility which is exempt from all or a portion of this rule shall comply with the provisions of Rule 442.

(h) Exemptions

(1) The provisions of paragraph (c)(2) shall not apply to the following:

(A) Touch-up and repair coatings;

(B) Stencil coatings applied on clear or transparent substrates;

(C) Clear or translucent coatings, except for those subject to paragraph (c)(4);

(D) Coatings applied at a paint manufacturing facility while conducting performance tests on the coatings;

(E) Any individual coating category used in volumes less than 50 gallons in any one year, if substitute compliant coatings are not available- provided that the total usage of all such coatings does not exceed 200 gallons per year, per facility;

(F) Reflective coating applied to highway cones;

- (G) Mask coatings.
 - (i) Coatings that are less than 0.5 millimeter thick (dried) and the area coated is less than 25 square inches; or
 - (ii) Coatings that are less than 0.5 millimeter thick (dried) and/or the area coated is more than 25 square inches, and provided that a written petition is submitted to the Executive Officer which demonstrates, to the satisfaction of the Executive Officer, that compliant coatings are not available, and written approval is granted by the Executive Officer;
 - (H) EMI/RFI shielding coatings; and
 - (I) Heparin-benzalkonium chloride (HBAC)-containing coatings applied to medical devices, provided that the total usage of all such coatings does not exceed 100 gallons per year, per facility.
- (2) The provisions of this rule shall not apply to aerosol coating products.
 - (3) The provisions of paragraph (c)(5) shall not apply to airbrush operations using 5 gallons or less per year.

[SIP: Submitted as amended 2/14/97 on 8/1/97; Submitted as amended 3/8/96 on 7/23/96; Approved 12/20/93, 58 FR 66286, 40 CFR 52.220(c)(191)(i)(A)(1); Approved 10/3/84, 49 FR 39057, 40 CFR 52.220(c)(148)(vi)(B)]

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