

RULE 427 AUTOMOTIVE REFINISHING OPERATIONS  
(Adopted 9/14/99: Revised 02/23/2010)

A. General

A.1 Purpose

The purpose of this rule is to limit Volatile Organic Compound (VOC) emissions from coatings and solvents associated with the coating of motor vehicles, mobile equipment, and associated parts and components.

A.2 Applicability

A.2.a Except as provided in section A.2.b, this rule is applicable to any person who supplies, sells, offers for sale, manufactures, or distributes any automotive coating or associated solvent for use within the District, as well as any person who uses, applies, or solicits the use or application of any automotive coating or associated solvent within the District.

A.2.b This rule does not apply to:

A.2.b.1 Any Automotive coating or associated solvent that is offered for sale, sold, or manufactured for use outside of the District or for shipment to other manufacturers for reformulation or repackaging.

A.2.b.2 Any aerosol coating product

A.2.b.3 Any automotive coating that is sold, supplied, or offered for sale in 0.5 fluid ounce or smaller containers intended to be used by the general public to repair tiny surface imperfections.

A.2.b.4 Any coating applied to motor vehicles or mobile equipment, or their associated parts and components, during manufacture on an assembly line.

B. Definitions

The terms used in this Rule are defined in Rule 101 - Definitions:

For the purpose of this Rule the following definitions shall apply:

B.1 VOC Content

B.1.a “VOC regulatory for Coatings” means VOC in grams per liter of coating, excluding water and exempt compounds, and shall be calculated by the following equation:

$$\text{VOC regulatory content} = \frac{W_v - W_w - W_{ec}}{V_m - V_w - V_{ec}}$$

B.1.b “VOC actual for Coatings” means VOC in grams per liter of material shall be calculated using the following equation:

$$\text{VOC actual content} = \frac{W_v - W_w - W_{ec}}{V_m}$$

B.1.c “VOC content for Solvents” means VOC in grams per liter of material shall be calculated using the following equation:

$$\text{VOC content} = \frac{W_v - W_w - W_{ec}}{V_m}$$

Where:

VOC content = amount of volatile organic compounds in grams/liter

- $W_v$  = weight of volatiles in grams
- $W_w$  = weight of water in grams
- $W_{ec}$  = weight of exempt compounds in grams
- $V_m$  = volume of material (coating or solvent, as applicable) in liters
- $V_w$  = volume of water in liters
- $V_{ec}$  = volume of exempt compounds in liters

C. Standards

C.1 Coating Limits

No person shall apply to any motor vehicle, mobile equipment, or associated parts and components, any coating with a VOC regulatory content, as calculated pursuant to subsection B.1.a, in excess of the following limits, except as provided in section C.3:

| Coating Category  | VOC regulatory limit, as applied, in grams/liter (pounds per gallon*) |
|-------------------|---|
|                   | <b>Effective<br/>April 1, 2010</b>                                    |
| Adhesion Promoter | 540 (4.5)   |
| Clear Coating     | 250 (2.1)   |

| <b>Coating Category</b>      | <b>VOC regulatory limit, as applied, in grams/liter (pounds per gallon*)</b> |
|------------------------------|--|
|                              | <b>Effective<br/>April 1, 2010</b>   |
| Color Coating                | 420 (3.5)  |
| Multi-Color Coating          | 680 (5.7)  |
| Pretreatment Coating         | 660 (5.5)  |
| Primer                       | 250 (2.1)  |
| Primer Sealer                | 250 (2.1)  |
| Single-Stage Coating         | 340 (2.8)  |
| Temporary Protective Coating | 60 (0.5)   |
| Truck Bed Liner Coating      | 310 (2.6)  |
| Underbody Coating            | 430 (3.6)  |
| Uniform Finish Coating       | 540 (4.5)  |
| Any other coating type       | 250 (2.1)  |

\*English units are provided for information only.

#### C.2 Most Restrictive VOC Limit

If anywhere on the container of any automotive coating, or any label or sticker affixed to the container, or in any sales, advertising, or technical literature supplied by a person, any representation is made that indicates that the coating meets the definition of or is recommended for use for more than one of the coating categories listed in section C.1, then the lowest VOC content limit shall apply.

#### C.3 Alternative Compliance

Instead of complying with the VOC content limits specified in section C.1, a person may use an emission control system that has been approved, in writing, by the Executive Officer or Air Pollution Control Officer of the District and which achieves an overall control efficiency of at least 85 percent as determined pursuant to sections E.5 and E.6. Any approved system emission control must be maintained and used at all times in proper working condition.

#### C.4 Prohibition of Possession

No person shall possess at any automotive refinishing facility, any automotive coating that is not in compliance with section C.1 or C.3, as applicable. Effective April 1, 2010, no person shall possess at any automotive refinishing facility, any solvent with a VOC content greater than 25 grams per liter.

### C.5 Prohibition of Sale or Manufacture

No person shall manufacture, blend, repackage for sale, supply, sell, offer for sale, or distribute within the District any coating with a VOC content in excess of the limits specified in section C.1.

Notwithstanding the provisions of this section, a person may manufacture, blend, repackage for sale, supply, sell, offer for sale, or distribute a coating with a VOC content in excess of the limits specified in section C.1 under the following circumstances and provided all of the requirements of section D.6 are also met:

C.5.a The coating is for use exclusively within an emission control system as allowed in section C.3, or

C.5.b The coating is for use outside the District.

### C.6 Prohibition of Specification

No person shall solicit or require the use of, or specify the application or use of any coating or solvent on a motor vehicle or mobile equipment, or associated parts and components, if such use or application results in a violation of this rule. This prohibition shall apply to all written or oral contracts, including, but not limited to, job orders, under the terms of which any coating or solvent that is subject to the provisions of this rule is to be used or applied. This prohibition shall not apply to coatings that meet the criteria specified in section C.5.

### C.7 Coating Application Methods

No person shall apply any coating to any motor vehicle, mobile equipment, or associated parts and components unless one of the following application methods is used:

C.7.a Brush, dip or roller.

C.7.b Electrostatic spray.

C.7.c High-Volume Low-Pressure (HVLP) spray equipment

C.7.d Use of a spray gun: If a spray gun is used, the end user must demonstrate that the gun meets the HVLP definition found in Rule 101 Definitions in design and use. A satisfactory demonstration must be based on the manufacturer's published technical material on the design of the gun and by a demonstration of the operation of the gun using an air pressure

tip gauge from the manufacturer of the gun.

- C.7.e Any alternative method that achieves a transfer efficiency equivalent to, or higher than, the application methods listed in sections C.7.a, C.7.b, or C.7.c as determined per section E.9. Written approval from the Executive Officer or Air Pollution Control Officer shall be obtained for each alternative method prior to use.

Section C.7 does not apply to underbody coatings, graphic arts operations, truck bed liner coatings, or any coating use of less than one (1) fluid ounce (29.6 milliliters).

#### C.8 Solvent Limits and Evaporative Loss Minimization

- C.8.a Effective April 1, 2010, each solvent present at any automotive refinishing facility shall not exceed a VOC content of 25 grams per liter as calculated pursuant to section B.1.c.
- C.8.b Solvent-laden materials shall be stored in closed containers.
- C.8.c All automotive coating components, automotive coatings, and solvents shall be stored in closed vapor-tight containers.
- C.8.d No person shall clean spray equipment unless a closed system is used. However, equivalent control equipment can be used if the Executive Officer or Air Pollution Control Officer of the District approves it in writing prior to use.
- C.8.e All waste automotive coating components, automotive coatings, and solvents shall be stored in closed vapor-tight containers, except while adding to or removing them from the containers.

#### D. Administrative Requirements

##### D.1 Compliance Statement Requirement

- D.1.a For each individual automotive coating or automotive coating component, the manufacturer and repackager shall include the following information on product data sheets, or an equivalent medium:
  - D.1.a.1 The VOC actual for coatings and VOC regulatory for coatings, expressed in grams per liter;
  - D.1.a.2 The weight percentage of volatiles, water, and exempt

compounds;

D.1.a.3 The volume percentage of water and exempt compounds; and,

D.1.a.4 The density of the material (in grams per liter).

D.1.b For each individual ready to spray mixture (based on the manufacturer's and repackager's stated mix ration), the manufacturer and repackager shall include the following information on product data sheets, or an equivalent medium:

D.1.b.1 The VOC actual for coatings and VOC regulatory for coatings, expressed in grams per liter;

D.1.b.2 The weight percentage of volatiles, water, and exempt compounds;

D.1.b.3 The volume percentage of water and exempt compounds; and,

D.1.b.4 The density of the material (in grams per liter).

D.1.c The manufacturer and repackager of solvents subject to this rule shall include the VOC content as supplied, calculated pursuant to section B.1.c, expressed in grams per liter, on product data sheets, or an equivalent medium.

## D.2 Labeling Requirements

D.2.a The manufacturer and repackager of automotive coatings or automotive coating components shall include on all containers the applicable use category(ies), and the VOC actual for coatings and VOC regulatory for coatings, as supplied, expressed in grams per liter.

D.2.b The manufacturer and repackager of solvents subject to this rule shall include on all containers the VOC content for solvents, as supplied, expressed in grams per liter.

## D.3 Maintenance of Records.

Records required by this rule shall be retained for a minimum of three years and made available for inspection by District personnel upon request.

#### D.4 Record Keeping Requirements.

Any person who uses coatings or solvents subject to this rule shall maintain and have available at all times, on site, the following:

D.4.a A current list of all coatings and solvents used that are subject to this rule. This list shall include the following information for each coating and solvent:

D.4.a.1 Material name and manufacturer

D.4.a.2 Application method

D.4.a.3 Coating type (as listed in section C.1) and mix ratio specific to the coating

D.4.a.4 VOC actual for coatings and VOC regulatory for coatings, as applied, or VOC content for solvent.

D.4.a.5 Whether the material is a coating or solvent.

D.4.b Current manufacturer specification sheets, material safety data sheets, technical data sheets, or air quality data sheets, which list the VOC actual for coatings and VOC regulatory for coatings of each ready-to-spray coating (based on the manufacturer's stated mix ratio) and automotive coating components, and VOC content of each solvent.

D.4.c Purchase records identifying the coating type (as listed in section C.1), name, and volume of coatings and solvents.

#### D.5 Record Keeping Requirements for Emission Control Systems.

Any person using an emission control system shall maintain daily records of key system operating parameters which will demonstrate continuous operation and compliance of the emission control system during periods of VOC emission producing activities. "Key system operating parameters" are those parameters necessary to ensure or document compliance with section C.3, including, but not limited to, temperatures, pressure drops, and air flow rates.

#### D.6 Record Keeping Requirements for Prohibition of Sale.

Any person claiming an exception specified in section C.5 shall keep a detailed log of each automotive coating component and automotive coating manufactured, blended, repackaged for sale, supplied, sold,

offered for sale, or distributed showing:

- D.6.a The quantity manufactured, blended, repackaged for sale, supplied, sold, offered for sale, or distributed, including size and number of containers;
- D.6.b The VOC regulatory for coatings;
- D.6.c The VOC actual for coatings;
- D.6.d To whom they were supplied, sold, offered for sale, or distributed, or for whom they were manufactured, blended, or repackaged for sale including the name, address, phone number, retail tax license number, and valid district permit number; and,
- D.6.e The specific exception being utilized under section C.5.

#### E. Test Methods

The following test methods are incorporated by reference herein, and shall be used to test coatings and solvents subject to the provisions of this rule. A source is in violation of this rule if any measurement by any of the listed applicable test methods exceeds the standards of this rule.

##### E.1 Methyl Acetate, Acetone, and PCBTF Content.

The quantity of methyl acetate, acetone, and parachlorobenzotrifluoride (as specified in section B.1 and the Exempt Compounds found in Rule 101 Definitions "Volatile Organic Compounds" and "Exempt Compounds" shall be determined by using ASTM Method D6133-02: "Standard Test Method for Acetone, *p*-Chlorobenzotrifluoride, Methyl Acetate or *t*-Butyl Acetate Content of Solventborne and Waterborne Paints, Coatings, Resins, and Raw Materials by Direct Injection Into a Gas Chromatograph" (February 2003).

##### E.2 Acid Content.

Measurement of acid content (as specified in the definition of "Pretreatment Coating" found in Rule 101 Definitions) shall be determined by using ASTM D1613-03 "Standard Test Method for Acidity in Volatile Solvents and Chemical Intermediates Used in Paint, Varnish, Lacquer, and Related Products" (October 2003)

##### E.3 Alternative Test Methods.



The use of other test methods which are determined to be equivalent or better and approved, in writing, by the Executive Officer or Air Pollution Control Officer of the District, CARB, and U.S. EPA may be used in place of the test methods specified in this rule.

E.4 VOC Content of Coatings or Solvents.

VOC content (as specified in sections B.1, C.1, and C.8.a) shall be determined by U.S. EPA Method 24 as set forth in Appendix A of Title 40 of the Code of Federal Regulations (40 CFR) Part 60, "Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings".

E.5 Control Efficiency

When either U.S. EPA Method 25, 25A, or 25B is used to determine VOC emissions, control device equivalency (as specified in section C.3) shall be determined as specified in U.S. EPA's "Guidelines for Determining Capture Efficiency," (January 9, 1995) and 40 CFR 51, Appendix M, Methods 204-204f as applicable.

E.6 Determination of Alternative Compliance.

Alternative compliance (as specified in section C.3) shall be determined by U.S. EPA Method 25, 25A, or 25B, Title 40 Code of Federal Regulations, Part 60, Appendix A as applicable. A source is in violation if the measured VOC emissions, as measured by any of the test methods, exceed the standards specified in section C.3.

E.7 Metallic Content.

The metallic content of a coating (as specified in the definition for "Metallic/Iridescent Color Coating" found in Rule 101 Definitions) shall be determined by South Coast Air Quality Management District Method 318-95, "Determination of Weight Percent Elemental Metal in Coatings by X-ray" (July 1996).

E.8 Exempt Compound Content.

Exempt compound content, other than as determined pursuant to section E.1, (as specified in the definition for "Volatile Organic Compounds" found in Rule 101 Definitions for exempt compounds and section B.1) shall be determined by using CARB Method 432, "Determination of Dichloromethane and 1,1,1-Trichloroethane in Paints and Coatings" (September 12, 1998); CARB Method 422, "Determination of Volatile Organic Compounds in Emissions from Stationary Sources" (January 22,

1987); or South Coast Air Quality Management District (SCAQMD) Method 303-91, "Determination of Exempt Compounds" (February 1993).

E.9 Transfer Efficiency.

Spray equipment transfer efficiency (as specified in the definition for "Transfer Efficiency" found in Rule 101 Definitions and C.7.e) shall be determined by using South Coast Air Quality Management District "Spray Equipment Transfer Efficiency Test Procedures for Equipment User" (May 24, 1989).

E.10 HVLP Equivalency.

Spray equipment HVLP equivalency (as specified in section C.7.d) shall be determined by using South Coast Air Quality Management District "Guidelines for Demonstrating Equivalency with District Approved Transfer Efficient Spray Guns" (September 26, 2002).

F. Construction of Headings

Section and subsection headings do not in any manner affect the scope, meaning, or intent of the provisions of this Rule.

G. Severability

Each part of this Rule shall be deemed severable, and in the event that any part of this Rule is held to be invalid, the remainder of the Rule shall continue in full force and effect.