

## **Rule 228 Surface Coating of Metal Parts and Products**

### **1.0 General**

#### **1.1 Applicability**

Provisions of this Rule shall apply to surface coating of metal parts or products in portions of the Northern Sierra Air Quality Management District that are designated as Non-attainment for any federal ambient air quality standard for ozone.

#### **1.2 Exemptions**

1.2.1 Requirements of this Rule, except for Subsection 4.2 (Record Keeping) shall not apply to any combination of coatings, provided total uncontrolled facility VOC emissions from use of all coatings does not exceed 15 pounds in any one day. Once a facility exceeds this emissions threshold, it shall become subject to requirements of this Rule.

1.2.2 Requirements of Subsection 3.3 (Application Equipment Requirements) of this Rule shall not apply to touch-up, repair, or stenciling of identification numbers and letters.

1.2.3 Requirements of this Rule shall not apply to application of coatings to automobiles, light duty trucks, aircraft, aerospace vehicles, marine vessels, cans, coils, or magnetic wire or to powder coatings, except the rule does apply to the customized top coating of automobiles and trucks with production of 35 or more vehicles per day.

#### **1.3 Effective Date**

This regulation shall become effective January 1, 2009.

### **2.0 Definitions**

2.1 Air Dried Coating: A coating that is cured at a temperature below 194 degrees F (90 degrees C).

2.2 Baked Coating: A coating that is cured at a temperature at or above 194 degrees F (90 degrees C).

2.3 Camouflage Coating: A coating used to conceal items or equipment from visual detection.

2.4 Clear Coating: A coating that either lacks color and opacity, or is transparent, and uses the surface to which it is applied as a reflective base or undertone color.

2.5 Exempt Compounds: Any compound specifically excluded from the definition of Volatile Organic Compound (VOC) in the Federal Register.

2.6 Extreme-Performance Coating: A coating used on a metal surface where the coating is, in its intended use, exposed to any of the following:

2.9.1 Industrial-grade detergents, cleaners, abrasive scouring agents, solvents, strong chemical agents, or petrochemical materials; or

2.9.2 Unprotected shipboard conditions; or

2.9.3 Water, waste water, or sewage; or

2.9.4 Other similar environmental conditions as determined by the Air Pollution Control Officer (APCO).

2.7 High-Performance Architectural Coating: A coating used to protect architectural subsections and which meets the requirements of the Architectural Aluminum Manufacturers Association's publication number AAMA 605.2-1980.

2.8 High Temperature Coating: A coating that is certified to withstand a temperature of 1000 degrees F (538 degrees C) for 24 hours.

2.9 High-Volume, Low-Pressure Application (HVLP): Spray equipment which is designed to operate and is operated using a high volume of air delivered at atomized air pressures between 0.1 to 10.0 psig measured dynamically at the center of the air cap and at the air horns and which operates at a maximum fluid delivery pressure not exceeding the manufacturer's recommended inlet air pressure.

2.10 Metal Parts and Products: Any metal parts or products except for those subject to coating requirements of other source-specific rules.

2.11 Metallic Coating: Any coating except zinc filled primer which contains five (5) grams or more of metal particles per liter of coating as applied.

2.12 Pretreatment Wash Primer: Any coating which contains a minimum of 0.5 % acid by weight, is necessary to provide surface etching, and is applied directly to bare metal surfaces to provide corrosion resistance and promote adhesion for subsequent coatings.

2.13 Repair: Recoating portions of previously coated product due to mechanical damage to the coating following normal painting operations.

2.14 Silicone-Release Coating: Any coating which contains silicone resin and is intended to prevent food from sticking to surfaces such as baking pans.

2.15 Transfer Efficiency: The ratio of the weight of coating solids which adhere to the object being coated to the weight of coating solids used in the application process, expressed as a percentage.

2.16 Volatile Organic Compound (VOC): As defined in the Federal Register.

2.17 Zinc Filled Primer: Any coating which has an elemental zinc content of not less than 240 grams/liter (2.0 pounds/gallon) of coating as applied.

### **3.0 Requirements**

#### **3.1. VOC Content Limits**

Except as provided by Subsection 3.2, no person shall apply to any metal part or product any coating with a VOC content in excess of the following limits as applied:

#### **VOC Content Limits (Grams of VOC per Liter Of Coating, Less Water and Less Exempt Compounds)**

	<u>Baked</u>	<u>Air-Dried</u>
All Coatings Except Those Listed Below	360 g/l (3.0 lb/gal)	420 g/l (3.5 lb/gal)
Camouflage	420 g/l (3.5 lb/gal)	420 g/l (3.5 lb/gal)
Clear Coating	520 g/l (4.3 lb/gal)	420 g/l (3.5 lb/gal)

Extreme-Performance	420 g/l (3.5 lb/gal)	420 g/l (3.5 lb/gal)
High Performance Architectural	420 g/l (3.5 lb/gal)	420 g/l (3.5 lb/gal)
High Temperature	420 g/l (3.5 lb/gal)	420 g/l (3.5 lb/gal)
Metallic Topcoat	420 g/l (3.5 lb/gal)	420 g/l (3.5 lb/gal)
Pretreatment Wash Primer	420 g/l (3.5 lb/gal)	420 g/l (3.5 lb/gal)
Silicone Release	420 g/l (3.5 lb/gal)	420 g/l (3.5 lb/gal)

### 3.2 Alternate Emissions Control

In lieu of complying with VOC content limits specified in Subsection 3.1, air pollution control equipment with a VOC capture efficiency of at least 85% and a control device efficiency of at least 90% may be used.

### 3.3 Application Equipment Requirements

No person shall coat any metal part or product subject to provisions of this Rule unless one of the following methods is used:

- 3.3.1 Brush, dip, or roll coating conducted in accordance with equipment manufacturer's recommendations,
- 3.3.2 Electrostatic or electrodeposition application conducted in accordance with manufacturer's recommendations,
- 3.3.3 High Volume Low Pressure (HVLP) spray equipment operated in accordance with equipment manufacturer's recommendations,
- 3.3.4 Other application method demonstrated to achieve at least 65% transfer efficiency, for example, flow or continuous coating.

### 3.4 Surface Preparation and Equipment Cleanup Requirements

No person shall conduct surface preparation or equipment cleanup for activities subject to provisions of this Rule unless the following VOC limits are met and methods are used:

- 3.4.1 Surface Cleaning: No material shall be used containing VOC in excess of 200 grams per liter (1.7 lb/gal) of material to remove dirt, oils, or other contaminants prior to application of surface coatings or adhesives.
- 3.4.2 Stripping: No material shall be used containing VOC in excess of 200 grams per liter (1.7 lb/gal) of material to strip any coating.
- 3.4.3 Cleaning of Coatings Application Equipment: Solvents used for cleaning of coatings application equipment shall comply with both limits specified below:
  - a. Solvent shall have a VOC content of 950 grams or less per liter (7.9 lb/gal) of material; and
  - b. Solvent shall have a VOC composite partial pressure of 35 mm Hg or less at 20°C (68°F).

3.4.4 Cleaning of Polyester Resin Application Equipment: Solvents used for cleaning polyester resin application equipment shall comply with one of the limits specified below:

- a. Solvent shall have a VOC content of 200 grams or less per liter (1.7 lb/gal); or
- b. Solvent shall have a VOC content of 1100 grams or less per liter (9.2 lb/gal) and a VOC composite partial pressure of 1.0 mm Hg or less at 20°C (68°F).

3.4.5 Cleaning-Devices and Methods: No person shall perform solvent cleaning operations unless one of the following cleaning devices or methods is used:

- a. Wipe Cleaning.
- b. Spray bottles or containers with a maximum capacity of 16 fluid ounces from which solvents are applied without a propellant induced force.
- c. Cleaning equipment having a closed solvent container during cleaning operations, except when depositing and removing objects to be cleaned, and closed during nonoperation except during maintenance and repair of the cleaning equipment itself.
- d. Remote reservoir cold cleaner operated in conformance with Rule 410.3;
- e. System totally enclosing guns, cups, nozzles, bowls, and other parts during washing, rinsing, and draining procedures.
- f. Non-atomized solvent flow method collecting cleaning solvent in a container or a collection system closed except for solvent collection openings and, if necessary, openings to avoid excessive pressure build-up inside the container.
- g. Solvent flushing method discharging solvent into a closed container, except for solvent collection openings and, if necessary, openings to avoid excessive pressure build-up inside the container. Discharged solvent from such equipment shall be collected in containers without atomizing into open air. Solvent may be flushed through the system by air or hydraulic pressure, or by pumping.

### 3.5 Storage and Disposal Requirements

Regardless of VOC content, all VOC-containing materials used in solvent cleaning operations, such as solvents, and cloth and paper moistened with solvents, shall be stored in non-absorbent, non-leaking containers kept closed at all times except when filling or emptying.

### 3.6 Prohibition of Sale

No person shall offer for sale or sell within the District any coating if such product is prohibited by any provisions of this Rule. This prohibition shall apply to sale of any coating to be applied at any physical location within the District.

### 3.7 Prohibition of Specification

No person shall solicit or require for use or specify application of a coating on metal parts and products if such use or application results in a violation of provisions of this Rule. This prohibition shall apply to all written or oral contracts under terms of which any coating subject to provisions of this Rule is to be applied to any metal part or product at any physical location within the District.

## **4.0 Administrative Requirements**

### **4.1 Labeling Requirements**

4.1.1 VOC Content: Each container (or accompanying data sheet) of any coating subject to this Rule shall display maximum VOC content of the coating as applied, including coating components, and after any thinning as recommended by the manufacturer. VOC content shall be displayed as grams of VOC per liter less water and exempt compounds. VOC content displayed shall be determined using Subsection 5.1. test methods or calculated using product formulation data if U.S. EPA approves this as equivalent to Subsection 5.1.

4.1.2 Thinning Recommendations: Each container (or accompanying data sheet) of any coating subject to this Rule and manufactured after May 6, 1992 shall display a statement of manufacturer's recommendation regarding thinning of the coating. This requirement shall not apply to thinning of coatings with water.

### **4.2 Record Keeping Requirements**

Any person subject to Section 3 or exempt by Subsection 1.2.1 shall maintain and have available during an inspection:

A current list of VOC containing products in use containing all data necessary to evaluate compliance, including the following information, as applicable:

- 4.2.1 Material name and manufacturer's identification,
- 4.2.2 Application method,
- 4.2.3 Material type and specific use instructions,
- 4.2.4 Specific mixing instructions,
- 4.2.5 Maximum VOC content of coating as applied, including thinning solvents, hardeners, etc., excluding water and exempt compounds, and
- 4.2.6 Coating composition and density.

Daily coating and solvent use records, including the following information for each:

- 4.2.7 Volume used of each component and mix ratio,
- 4.2.8 VOC content in grams/liter (or pounds/gallon) as applied/used,
- 4.2.9 Volume in liters (or gallons) applied/used.

Capture and control equipment operating records, if applicable, including:

- 4.2.10 Periods of operation corresponding to use records kept for Subsection V.B.2. showing control equipment was used as necessary,
- 4.2.11 Key system operating parameters showing operation as required to comply with this Rule and as intended by manufacturer,
- 4.2.12 Date performed, and description of all control system maintenance.

Facilities exempt by Subsection III.A. may maintain records on an extended basis provided such records show emissions are less than 15 pounds for the entire extended period.

All records shall be retained and made available for inspection by the Control Officer for at least three years.

## **5.0 Test Methods**

### **5.1 Analysis of Samples**

Samples of VOC as specified in this Rule shall be analyzed by U.S. EPA Method 24 and analysis of halogenated exempt compounds shall be conducted using CARB Method 432, or ASTM D-4457-85 and be consistent with provisions set forth in the Federal Register (FR. Vol. 56, No. 52, March 18, 1991).

### **5.2 Determination of Emissions**

Emissions of VOC shall be measured by U.S. EPA Method 25, 25A, or 25B, as applicable.

### **5.3 Determination of Capture Efficiency**

Where add-on control equipment is utilized, capture efficiency shall be determined in accordance with 40 CFR 52.741.

### **5.4 Quantification of Metallic/Iridescent Topcoat**

Quantification of coating as a metallic/iridescent topcoat shall be determined by South Coast Air Quality Management District "Test Method 311-91, "Analysis of Percent Metals in Metallic Coatings by Spectrographic Method."

### **5.5 Measurement of Acid Content**

Acid content of Pre-Treatment Wash Primers shall be conducted and reported in accordance with ASTM D1613-85 Standard Test Method for Acidity in Volatile Solvents and Chemical Intermediates used in Paint, Varnish, Lacquer, and Related Products.

### **5.6 Demonstration of Transfer Efficiency**

Transfer efficiency shall be demonstrated using South Coast Air Quality Management District Method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User".

### **5.7 Determination of VOC Composite Partial Pressures**

VOC composite partial pressures shall be determined using either manufacturer's information regarding formulation or using ASTM methods E168-92, E169-93, or E260-91 for determination of mole fractions and then summing products of each VOC component's vapor pressure and its mole fraction. For materials containing no non-VOC components, VOC composite partial pressure can be measured directly by ASTM Method D2879-86.

### **5.8 Determination of VOC Emissions From Spray Gun Cleaning Systems**

VOC emissions from spray gun cleaning systems shall be made using South Coast Air Quality Management District "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems".

## **6.0 Compliance Schedule**

### **6.1 Existing Sources**

Any person becoming subject to requirements of this Rule by loss of exemption shall comply with the following increments of progress:

6.1.1 Within 6 months from date exemption is lost, submit a complete application for an Authority to construct control equipment, if necessary; and

6.1.2 Within 12 months from date exemption is lost, be in full compliance with requirements of this Rule.

### **6.2 New Sources**

Any new proposed surface coating of metal parts or products operation not exempt by Section 1.2 shall demonstrate its ability to comply with the requirements of this Rule prior to issuance of Authority to Construct.