SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

RULE 4604 - CAN AND COIL COATING OPERATIONS

(Adopted April 11, 1991; Amended September 19, 1991; Amended May 21, 1992; Amended December 17, 1992; Amended December 20, 2001; Amended January 15, 2004)

1.0 Purpose

The purpose of this rule is to limit the emissions of volatile organic compounds (VOCs) from can and coil coating operations, and from organic solvent cleaning, storage and disposal associated with can coating and coil coating operations.

2.0 Applicability

This rule applies to can and coil coating operations, and to organic solvent cleaning, storage and disposal associated with can and coil coating operations.

3.0 Definitions

3.1 Aerosol Product: a hand-held, non-refillable container that expels a pressurized solvent-containing product by means of a propellant-induced force.

3.2 Application Equipment: a device, including, but not limited to, a spray gun, brush, or roller, used to apply adhesives, coatings, or inks.

3.3 Can and Coil Coating: a coating containing organic materials and applied by spray, roller or other means to the inside and/or outside surfaces of metal cans, drums, pails, or lids, or to the surface of flat metal sheets, strips, rolls, or coils for further industrial or commercial use.

3.4 Closure: a component which is used to close or seal a container.

3.5 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.

3.6 Coating Applicator: an apparatus used to apply a surface coating.

3.7 Coating Line: an operation or process for applying, drying, or baking and/or curing surface coatings, together with associated equipment including, but not limited to, a coating applicator, flash-off area, and oven.

3.8 Coil: a flat metal sheet or strip that is rolled or wound in concentric rings.

3.9 Composite Partial Pressure: the sum of the partial pressures of the VOC compounds in a solvent. The VOC composite partial pressure is calculated as follows:

$$PP_c = \frac{\sum_{i=1}^{n} \frac{(W_i)(VP_i)}{MW_i}}{\frac{W_w}{MW_w} + \sum_{e=1}^{k} \frac{W_e}{MW_e} + \sum_{i=1}^{n} \frac{W_i}{MW_i}}$$

Where:

W_i = Weight of the "i"th VOC compound, in grams

W_w = Weight of water, in grams

W_e = Weight of exempt compound, in grams

MW_i = Molecular weight of the "i"th VOC compound, in grams per gram-mole

MW_w = Molecular weight of water, in grams per gram-mole

MW_e = Molecular weight of the "e"th exempt compound, in grams per gram-mole

PP_c = VOC composite partial pressure at 20°C (68°F), in mm Hg

VP_i = Vapor pressure of the "i"th VOC compound at 20°C (68°F), in mm Hg

3.10 Container: a two-piece can, three-piece can, drum, pail, or tube.

3.11 Cured Adhesive, Cured Coating, or Cured Ink: an adhesive, coating, or ink that is dry to the touch.

3.12 Degreaser: as defined in Rule 4662 (Organic Solvent Degreasing Operations). An enclosed spray application equipment cleaning system is not a degreaser.

3.13 Dissolver: an organic solvent that is added to an adhesive, coating, or ink in order to melt or to liquefy solid particles.

3.14 Drum: a cylindrical metal shipping container larger than 12 gallons capacity but no larger than 110 gallons capacity.

3.15 End Coating: a coating applied to a container end or closure to provide protection to the metal, to provide a protective lining between the product and the container, or to provide a background for a lithographic or printing operation

3.16 End Seal Compound: a compound that is applied to can ends and functions as a gasket when the end is assembled onto the can.

3.17 Exempt Compound: an organic compound not classified as a volatile organic compound (VOC), as defined in Rule 1020 (Definitions).

3.18 Exterior Body Spray Coating: a coating sprayed on the exterior of the can body to provide a decorative or protective finish

3.19 Grams of VOC per liter of Material: the weight of VOC per volume of material and can be calculated by the following equation:

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

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

3.20 Grams of VOC per liter of Material Less Water and Exempt Compounds: the weight of VOC per combined volume of VOC and coating solids and can be calculated by the following equation:

$$\text{Grams of VOC per liter of material Excluding water and exempt compounds} = \frac{W_s - W_w - W_{ec}}{V_m - V_w - V_{ec}}$$

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

3.21 Hand Application Method: an application of coatings using manually held, non-automatic equipment. Examples of this method include, but are not limited to, application by paintbrush, hand roller, trowel, spatula, dauber, rag, and sponge.

3.22 High-Volume, Low-Pressure (HVLP) Spray: a coating application system which is designed to be operated at air pressures between 0.1 and 10.0 pounds per square inch gauge (psig) at the air cap of the spray gun.

3.23 Interior Body Spray: a coating sprayed on the interior of the can body to provide a protective film between the product and the can.

3.24 Key System Operating Parameter: a parameter necessary to ensure compliance of the emission control system with VOC emission limits. Examples of key system operating parameters include, but are not limited to, temperatures, pressures, and flow rates.

3.25 Lid: a container's cap, or closure.

3.26 Liquid Leak: a visible solvent leak from a container at a rate of more than three drops per minute, or a visible liquid mist.

3.27 Maintenance Cleaning: the cleaning of tools, forms, molds, jigs, machinery, and equipment, and the cleaning of work areas where maintenance or manufacturing occurs.

3.28 Manufacturing Process: the process of making goods or articles by hand or by machine.

3.29 Non-Absorbent Container: a container made of non-porous material that does not allow the migration of solvents through it.

3.30 Non-Atomized Solvent Flow: a solvent in the form of a liquid stream without the introduction of any propellant.

3.31 Non-Leaking Container: a container without liquid leak.

3.32 Organic Solvent: the same as "Solvent."

3.33 Organic Solvent Cleaning: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

3.34 Over-varnish: a coating applied directly over a design coating to fulfill one or more of the following functions: reduce the coefficient of friction, provide gloss or protect the finish against abrasion and corrosion.

3.35 Pail: a metal container from one (1) gallon capacity to twelve (12) gallon capacity and constructed of 29 gauge or heavier material.

3.36 Permanent Total Enclosure (PTE): a permanently installed enclosure that completely surrounds a source of emissions such that all VOC emissions are captured and contained for discharge to a control device.

3.37 Propellant: a gas, including air, in a pressure container for expelling the contents when the pressure is released.

3.38 Repair Cleaning: a solvent cleaning operation or activity carried out during a repair process.

3.39 Repair Coating: a coating for post-formed convenience ends (easy-open) to provide additional protection in the scored areas by covering breaks at the score location or to provide an additional layer of protective coating on the interior or exterior of the end for corrosion resistance.

3.40 Repair Process: the process of returning a damaged object or an object not operating properly to good condition.

3.41 Sheet Base Coating: a coating applied to a flat sheet to provide protection to the metal, to provide a protective lining between the product and the container, or to provide a background for a lithographic or printing operation.

3.42 Side Seam Coating: a coating applied on the interior and/or exterior of a welded, cemented, or soldered seam to protect the exposed metal.

3.43 Solvent: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

3.44 Solvent Flushing: the use of a solvent to remove uncured adhesives, uncured inks, uncured coatings, or contaminants from the internal surfaces and passages of equipment by flushing solvent, by a non-atomized solvent flow, through the equipment.

3.45 Stationary Source: as defined in Rule 2201 (New and Modified Stationary Source Review Rule).

3.46 Stripping: the use of solvent to remove material such as cured adhesives, cured inks, cured or dried paint, cured or dried paint residue or temporary protective coating.

3.47 Surface Preparation: the removal of contaminants from a surface prior to the application of coatings, inks, or adhesives or before proceeding to the next step of a manufacturing process.

3.48 Thinner: a solvent that is added to an adhesive, coating, or ink to make it less viscous.

3.49 Viscosity Reducer: an organic solvent that is added to an adhesive, coating or ink to make it less viscous.

3.50 Volatile Organic Compound (VOC): defined in Rule 1020 (Definitions).

3.51 Waste Solvent Material: a solvent which may contain dirt, oil, metal particles, sludge, and/or waste products, or wiping material containing VOCs including, but not limited to, paper, cloth, sponge, rag, or cotton swab used in organic solvent cleaning.

3.52 Wipe Cleaning: a solvent cleaning activity performed by hand rubbing with an absorbent material such as a rag, paper, sponge, brush, or cotton swab containing solvent.

4.0 Exemptions

4.1 Until January 31, 2005, the provisions of Section 5.1 through Section 5.2 of this rule shall not apply to stationary sources which use three (3) gallons per day or less of coatings. The provisions of Section 5.3 through Section 5.5 and the applicable provisions of Section 6.0 shall still apply. This exemption will no longer be in effect on and after February 1, 2005.

4.2 On and after February 1, 2005, the provisions of Section 5.1 through Section 5.2 of this rule shall not apply to stationary sources that use 55 gallons or less of the aggregate of coatings (as applied) and cleaning solvent (as applied) per rolling 12-month period. The provisions of Section 5.3 through Section 5.5 and the applicable provisions of Section 6.0 shall still apply.

4.3 The lubricants applied by the spray mister to the can end seal compound application nozzle and the lubricants applied to the can body during the can body forming process shall be exempt from all the provisions of this rule.

4.4 The provisions of this rule shall not apply to stripping of cured coatings, cured adhesives, and cured inks, except the stripping of such materials from spray application equipment.

4.5 The cleaning solvent VOC limit provisions of Table 5 shall not apply to the cleaning in laboratory tests and analyses, or bench scale or research and development projects.

5.0 Requirements

5.1 On any coating line, a person shall not use or apply any coating with a VOC content in excess of the following limits, expressed as grams of VOC per liter of coating, as applied, excluding water and exempt compounds:

Table 1 – Two-Piece Can Coating Operations

Coating Type	Application Method	Effective until January 31, 2006 g/l	Effective on and after February 1, 2006 g/l
Interior Sheet Base Coating	Any	225	225
Interior Body Spray	Spray	510	420
Exterior Sheet Base Coating	Any	250	250
Exterior Body Spray	Spray	510	420
Interior Overvarnish	Any	225	225
Exterior Overvarnish	Any	250	250
End Coating (Interior or Exterior)	Spray or roll coat	510	420
End Seal Compound	Any	440	20
Repair Coating	Spray	750	750

Table 2 – Three Piece Can Coating Operations

Coating Type	Application Method	Effective until January 31, 2006 g/l	Effective on and after February 1, 2006 g/l
Sheet Base Coating (Interior or Exterior)	Any	225	225
Interior Body Spray	Spray	510	360
Exterior Body Spray	Spray	510	420
Overvarnish (Interior or Exterior)	Any	225	225
End Coating (Interior or Exterior)	Spray or roll coat	510	225
Side Seam Coating	Spray	660	660
End Seal Compound	Any	440	20
Repair Coating	Spray	750	750

Table 3 – Drums, Pails and Lids Coating Operations

Coating Type	Application Method	Effective until January 31, 2006 g/l	Effective on and after February 1, 2006 g/l
Sheet Base Coating (Interior or Exterior)	Any	225	225
Interior Body Spray	Spray		
New		510	420
Reconditioned		510	510
Exterior Body Spray	Spray		
New		510	340
Reconditioned		510	420
Overvarnish (Interior or Exterior)	Any	225	225
Interior End Coating	Spray or roll coat		
New		510	420
Reconditioned		510	510
Exterior End Coating	Spray or roll coat		
New		510	340
Reconditioned		510	420
Side Seam Coating	Spray	660	660
End Seal Compound	Any	440	60

Table 4 Coil Coating Operations

Coating Type	g/l
Prime and topcoat or single coat operation	200

5.2 Approved VOC Emission Control System

5.2.1 The use of coatings with VOC contents in excess of the applicable limits specified in Table 1, Table 2, Table 3, or Table 4 shall be allowed, provided emissions of VOC to the atmosphere are controlled by an

APCO-approved VOC emission control system that complies with the requirements of Section 5.2.

5.2.2 The VOC emission control system shall have an overall capture and control efficiency of at least 90 percent by weight; and

5.2.3 The VOC emission control system shall reduce VOC emissions, at all times, to a level that is not greater than the emission level which would have been achieved through the use of materials compliant with the applicable requirements of Section 5.1 and Section 5.4.

5.2.4 The VOC emission control system shall comply with the requirements of Sections 5.2.2 and 5.2.3 during periods of emission-producing activities.

5.2.5 The VOC emission control system used to comply with the provisions of this rule shall be under District permit.

5.2.6 A person using a VOC emission control system to comply with provisions of this rule shall monitor key system operating parameters.

5.2.7 A person using a VOC emission control system to comply with the provisions of this rule shall implement an Operation and Maintenance Plan pursuant to Section 6.5 within 10 days of APCO approval of the plan.

5.2.8 Source Testing Requirements for VOC Emission Collection Devices and VOC Emission Control Devices

A person using collection devices and control devices of an emission control system used as a means of complying with this rule shall comply with the following source testing requirements:

5.2.8.1 Source Testing of VOC Emission Collection Devices that are Permanent Total Enclosures (PTEs)

5.2.8.1.1 A person shall source test/certify initially a PTE to demonstrate that the PTE complies with the requirements of a PTE pursuant to Section 6.7.2.

5.2.8.1.2 A VOC emission collection device used to comply with this rule that has already been tested or certified as compliant with the requirements of a PTE as of February 1, 2004 does not need to be retested or re-certified to comply with the requirements of Section 5.2.8.1.1, except if the collection device has undergone a change that would affect the collection device's ability to

comply with the requirements of a PTE since the initial source test/certification or if a re-test/re-certification is requested by the APCO.

5.2.8.2 Source Testing of VOC Emission Collection Devices that are not PTEs (non-PTEs)

5.2.8.2.1 A person shall source test each non-PTE at least once every twelve (12) months to determine the capture efficiency of the collection device. Source testing shall use the appropriate test method listed in Section 6.7.2.

5.2.8.2.2 A non-PTE shall be source tested under conditions representative of normal operating conditions using non-compliant coating and under conditions specified in the Permit-To-Operate, and

5.2.8.2.3 The source test for a non-PTE shall occur within 24 hours of the source test for the VOC control device to which the non-PTE is connected.

5.2.8.3 Source Testing of VOC Emission Control Devices

5.2.8.3.1 A person shall source test each VOC emission control device at least once every twelve (12) months to determine the control efficiency of the VOC emission control device. Source testing shall use the appropriate test method listed in Section 6.7.2.

5.2.8.3.2 The source test for a VOC emission control device connected exclusively to one or more PTEs shall be conducted under conditions representative of normal operating conditions using non-compliant coating and under conditions specified in the Permit-To-Operate.

5.2.8.3.3 The source test for a VOC emission control device connected to one or more non-PTE collection devices shall be conducted under conditions representative of normal operating conditions using non-compliant coating and under conditions specified in the Permit-To-Operate, and

5.2.8.3.4 The source test for a VOC emission control device connected to one or more non-PTE collection devices shall occur within 24 hours of the source test for the connected non-PTE collection devices.

5.2.8.4 A person with a VOC emission control system used to comply with the provisions of this rule with an active Permit-To-Operate on February 1, 2004 shall perform the source tests for the VOC emission control system pursuant to Section 5.2.8.2 for non-PTE VOC emission collection devices and Section 5.2.8.3 for VOC emission control devices no later than January 31, 2005. A source test of the VOC emission control system is not required for an inactive VOC emission control system until 180 days before start-up. A period of shorter than 180 days may be allowed if it can be shown that the equipment will be started up sooner than expected.

5.2.8.5 A person shall demonstrate that the overall capture and control efficiency of the VOC emission control system as calculated using the capture efficiency and control efficiency determined pursuant to Section 5.2.8.1 through Section 5.2.8.3 complies with the requirements of Section 5.2.2 and Section 5.2.3.

5.2.9 For a VOC emission control system that consists of a single VOC control device and a single VOC collection point and the operation includes a single coating only, one way to calculate the minimum overall capture and control efficiency of an emission control system at which an equivalent or greater level of VOC emissions reduction will be achieved is by using the following equation:

$$CE = \left\langle 1 - \left[\frac{VOC_{LWc}}{VOC_{LWn,Max}} \times \frac{\left[1 - \left(\frac{VOC_{LWn,Max}}{D_{n,Max}} \right) \right]}{\left[1 - \left(\frac{VOC_{LWc}}{D_c} \right) \right]} \right] \right\rangle \times 100$$

Where:

CE	=	Overall Capture and Control Efficiency, percent
VOC_{LWc}	=	VOC Limit less water and less exempt compounds in g/l
$VOC_{LWn,Max}$	=	Maximum VOC content of noncompliant coating used in conjunction with a control device, less water and less exempt compounds in g/l
$D_{n,Max}$	=	Density of solvent, reducer, or thinner contained in the noncompliant coating, containing the maximum VOC content of the multi-component coating in g/l

D_c = Density of corresponding solvent, reducer, or thinner used in the compliant coating system in g/l.

5.3 Prohibition of Specification and Sale

5.3.1 The provisions of Section 5.3 shall be in effect on and after February 1, 2005.

5.3.2 A person shall not solicit or require any other person in the District to use any can and coil coating or combination of can and coil coatings subject to the provisions of this rule that does not meet the limits and requirements of Section 5.1 through Section 5.2 or that causes the operation utilizing the coating or combination of coatings to be out of compliance with this rule.

5.3.3 The requirements of Section 5.3.2 above shall apply to all written or oral agreements executed, entered into, or renewed (including options), on or after February 1, 2005.

5.3.4 A person shall not sell or offer for sale for use within the District any coating that contains VOCs in excess of the limits specified in this rule for any application governed by this rule unless the label on the product or the data sheets for the product clearly bear the warning that the coating shall not be used unless compliance with the rule can be achieved, either with compliant coatings or with an approved VOC emission control system.

5.4 Organic Solvent Cleaning, Storage and Disposal Requirements

5.4.1 Section 5.4 shall be effective on and after November 15, 2002, unless otherwise indicated.

5.4.2 From November 15, 2002, through November 14, 2003, for cleaning operations, a person shall not use organic solvents that exceed the VOC content limits and composite partial pressure limits specified as being "Effective November 15, 2002 through November 14, 2003" in Table 5.

5.4.3 On and after November 15, 2003, for cleaning operations, a person shall not use organic solvents that exceed the VOC content limits specified as being "Effective November 15, 2003" in Table 5. On and after November 15, 2003, the composite partial pressure of solvents used for cleaning operations will not be regulated.

Table 5 VOC Limits for Organic Solvents Used in Cleaning Operations

Type of Solvent Cleaning Operation	Effective November 15, 2002 through November 14, 2003		Effective November 15, 2003
	VOC Content Limit Grams of VOC/liter of material (lb/gal)	VOC Composite Partial Pressure Limit, mm Hg at 20°C (68°F)	VOC Content Limit Grams of VOC/liter of material (lb/gal)
A. Product Cleaning During Manufacturing Process or Surface Preparation for Coating Application	70 (0.58)	no limit	50 (0.42)
B. Repair and Maintenance Cleaning	50 (0.42)	no limit	50 (0.42)
C. Cleaning of Coating Application Equipment	950 (7.9)	35	550 (4.6)

5.4.4 The provisions of Sections 5.4.5 through 5.4.8 of this rule shall only apply to a person that uses any solvent for organic solvent cleaning containing more than 50 grams of VOC per liter of material.

5.4.5 Cleaning activities that use solvents shall be performed by one or more of the following methods:

5.4.5.1 Wipe cleaning; or

5.4.5.2 Application of solvent from hand-held spray bottles from which solvents are dispensed without a propellant-induced force; or

5.4.5.3 Non-atomized solvent flow method in which the cleaning solvent is collected in a container or a collection system which is closed except for solvent collection openings and, if necessary, openings to avoid excessive pressure build-up inside the container; or

5.4.5.4 Solvent flushing method in which the cleaning solvent is discharged into a container that is closed except for solvent collection openings and, if necessary, openings to avoid excessive pressure build-up inside the container. The discharged solvent from the equipment must be collected into containers without atomizing into the open air. The solvent may be flushed through the system by air or hydraulic pressure, or by pumping.

5.4.6 Solvent shall not be atomized into the open air unless it is vented to a VOC emission control system that complies with Section 5.2. This provision shall not apply to the cleaning of nozzle tips of automated spray equipment systems, except for robotic systems, and cleaning with spray bottles or containers described in Section 5.4.5.2.

5.4.7 A person shall not use VOC-containing materials to clean spray equipment used for the application of coatings, adhesives, or ink, unless an enclosed system or equipment that is proven to be equally effective at controlling emissions is used for cleaning. If an enclosed system is used, it must totally enclose spray guns, cups, nozzles, bowls, and other parts during washing, rinsing and draining procedures, and it must be used according to the manufacturer's recommendations and must be closed when not in use. To determine solvent losses, a person shall use the test method in Section 6.7.4.

5.4.8 A person cleaning coating application equipment corresponding to Table 5 - Category C (Cleaning of Coating Application Equipment) that is not spray application equipment may use an alternative cleaning method other than those specified in Section 5.4.5, if the alternative cleaning method is approved by the APCO and EPA.

5.4.9 A person shall store or dispose of fresh or spent solvents, waste solvent cleaning materials such as cloth, paper, etc.; coatings; adhesives; catalysts; and thinners in closed, non-absorbent and non-leaking containers. The containers shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty.

5.4.10 In lieu of complying with the requirements in Table 5 – Category C (Cleaning of Coating Application Equipment), a person may operate an APCO-approved VOC emission control system that meets the requirements of Section 5.2.

5.5 Application Equipment

5.5.1 The requirements of Section 5.5 shall be effective on and after February 1, 2005.

5.5.2 A person shall not apply any coating unless:

5.5.2.1 The coating is applied with properly operating coating application equipment, and

5.5.2.2 The coating application equipment is operated according to operating procedures specified by the equipment manufacturer, and

5.5.2.3 The coating application equipment complies with the requirements of Section 5.5.3.

5.5.3 A person shall not apply any coating except by use of one or more of the following methods:

5.5.3.1 Electrostatic Application

5.5.3.2 Flow Coater

5.5.3.3 Roll Coater

5.5.3.4 Dip Coater

5.5.3.5 Hand Application Methods

5.5.3.6 HVLP Spray

5.5.3.6.1 For HVLP spray guns manufactured prior to January 1, 1996, the end user shall demonstrate that the gun meets HVLP spray equipment standards. Satisfactory proof will be either in the form of a manufacturer's published technical material or by a demonstration using a certified air pressure tip gauge, measuring the air atomizing pressure dynamically at the center of the air cap and at the air horns.

5.5.3.6.2 A person shall not sell or offer for sale for use within the District any HVLP spray gun without a permanent marking denoting the maximum inlet air pressure in psig at which the gun will operate. Limits are between 0.1 psig and 10.0 psig of air atomizing pressure.

5.5.3.7 Any other application method that demonstrates, to the satisfaction of the APCO and EPA, a coating transfer efficiency of at least 65 percent (≥ 65%) as measured using a test method pursuant to Section 6.7.5.

5.5.4 In lieu of complying with Section 5.5.3, a person may operate an APCO-approved VOC emission control system that controls the emissions from the source operation pursuant to the requirements of Section 5.2.

6.0 Administrative Requirements

6.1 A person who performs a can coating or coil coating operation subject to any part of Section 5.0 or is exempt by Section 4.1 or Section 4.2 of this rule or performs solvent cleaning operations associated with Section 5.4 shall comply with the recordkeeping requirements of Section 6.2 through Section 6.5:

6.2 Coatings Records

6.2.1 Coatings Materials List – A person shall maintain and have available on site, a current list of coatings in use which provides all of the coating data necessary to evaluate compliance including the following information as applicable:

6.2.1.1 Specific manufacturer's name of coatings, catalysts and thinners used.

6.2.1.2 Mix ratio of components used.

6.2.1.3 VOC content of each coating, as applied in g/l or lb/gal.

6.2.1.4 VOC content of each catalyst and thinner used g/l or lb/gal.

6.2.2 Coatings Usage Records – A person shall maintain records that include the following information:

6.2.2.1 Specific coating used and mix ratio of components added to the coating material prior to application.

6.2.2.2 Volume of coatings applied (gallons).

6.2.2.3 Specific solvents, catalysts and thinners used.

6.2.2.4 Volume of each solvent, catalyst and thinner (gallons).

6.2.3 A person shall maintain coatings usage records on a daily basis, except a person who keeps records pursuant to Section 6.2.4 or Section 6.2.5.

6.2.4 A person claiming exemption pursuant to Section 4.1 may maintain coatings usage records on an extended basis, not to exceed monthly, provided the records substantiate coatings used are less than three (3) gallons per day for each day of the entire extended period. The provision of Section 6.2.4 will no longer apply on and after February 1, 2005.

6.2.5 A person claiming exemption pursuant to Section 4.2 may maintain coatings usage records on an extended basis not to exceed monthly provided the records substantiate claim of exemption for the entire extended period.

6.2.5.1 If a person claiming exemption pursuant to Section 4.2 is already performing can or coil coating operations before January 31, 2005, the initial rolling 12-month period shall begin on February 1, 2005.

6.2.5.2 If a person claiming exemption pursuant to Section 4.2 begins can or coil coating operations on or after February 1, 2005, the initial rolling 12-month period shall begin on the first day that coating or cleaning solvent are used.

6.2.6 Coatings materials lists and coatings usage records shall be retained for a minimum of five (5) years and made available for inspection upon request of the APCO.

6.3 Cleaning Solvents Records

6.3.1 Cleaning Solvents Materials List – A person shall maintain and have available on site, a current list of cleaning solvents in use that provides all of the data necessary to evaluate compliance including the following information, as applicable:

6.3.1.1 The name of the cleaning solvent and its manufacturer's name.

6.3.1.2 The VOC content of the solvent expressed in g/l or lb/gallon, as applied.

6.3.1.3 On and before November 14, 2003, the composite partial pressure of the cleaning solvent. The composite partial pressure of the solvent shall be expressed in mm Hg at 20^{o}C (68^{o}F). On and after November 15, 2003, the composite partial pressure of solvents used for cleaning operations will not be regulated, but records from before November 15, 2003 must still be retained for five (5) years from date of record.

6.3.2 Cleaning Solvent Usage List - A person shall maintain records that include the following information:

6.3.2.1 Name of cleaning solvent used.

6.3.2.2 When the solvent is a mixture of different materials that are blended by the operator, the mix ratio of the batch would be

recorded in order to determine compliance with the specified limits of VOC content and/or the VOC composite partial pressure, as applied. On and after November 15, 2003, the composite partial pressure of solvents used for cleaning operations will not be regulated. Records from before November 15, 2003 must still be retained on-site for five (5) years from date of record.

6.3.2.3 Through November 14, 2003, the composite partial pressure of the solvent expressed in mm Hg at 20°C (68°F). On and after November 15, 2003, the composite partial pressure of solvents used for cleaning operations will not be regulated. Records from before November 15, 2003 must still be retained on-site for five (5) years from date of record.

6.3.2.4 Volume of each cleaning solvent used (gallons).

6.3.2.5 The type of cleaning activity for each solvent that is being used in accordance with the applicable cleaning category specified in Section 5.4, Table 5 of this rule.

6.3.3 A person shall maintain cleaning solvent usage records on a daily basis, except a person who keeps records pursuant to Section 6.3.4 or Section 6.3.5.

6.3.4 A person claiming exemption pursuant to Section 4.2 may maintain cleaning solvent usage records on an extended basis not to exceed monthly, provided the records substantiate claim of exemption for the entire extended period.

6.3.4.1 If a person claiming exemption pursuant to Section 4.2 is already performing can or coil coating operations before January 31, 2005, the initial rolling 12-month period shall begin on February 1, 2005.

6.3.4.2 If a person claiming exemption pursuant to Section 4.2 begins can or coil coating operations on or after February 1, 2005, the initial rolling 12-month period shall begin on the first day that coating or cleaning solvent are used.

6.3.5 Cleaning solvent materials list and cleaning solvent usage records shall be retained on site for a minimum of five (5) years and made available upon request of the APCO.

6.4 VOC Emission Control Systems Records

6.4.1 A person using an emission control system to comply with provisions of this rule through Section 5.2 or Section 5.4.10 or Section 5.5.4 shall maintain daily records of key system operating parameters which will demonstrate continuous operation and compliance of the emission control system during periods of emission-producing activities.

6.4.2 Excess Reporting: Any record showing violation of Section 5.2 shall be reported by sending a copy of such record to the APCO within 96 hours following the occurrence. Such report will include an explanation of the cause of the violation and the corrective action taken.

6.4.3 Emission control system records shall be retained on site for a minimum of five (5) years and made available upon request of the APCO.

6.5 VOC Emission Control System Operation and Maintenance Plan

6.5.1 A VOC emission control system subject to the provisions of Section 5.2 shall submit to the APCO for approval an Operation and Maintenance (O/M) Plan.

6.5.2 No provision in the O/M Plan shall conflict with or take precedence over any provision of this rule.

6.5.3 The O/M Plan shall specify actions to be taken to satisfy the following requirements and the requirements of Section 5.2. The actions to be identified in the O/M Plan include, but are not limited to:

6.5.3.1 Identification of key system operating parameter(s)

6.5.3.2 Minimum values or range of acceptable values for key system operating parameter(s) that source testing has shown result in VOC emissions within rule limits.

6.5.3.3 Procedures for preventive and corrective maintenance performed for the purpose of maintaining the emission control system in proper operating condition.

6.5.3.4 Procedures for collecting and recording required data and other information in a form approved by the APCO including, but not limited to, data collected through the O/M Plan and the monitoring of key system operating parameters.

6.5.3.5 Burner maintenance schedule

6.5.3.6 Catalyst maintenance and maintenance schedule, where applicable

6.5.3.7 Duct inspection schedule

6.5.3.8 Procedures for revising the O/M Plan.

6.5.3.9 All other information necessary to verify compliance with applicable provisions of this rule.

6.5.3.10 The O/M Plan shall specify which records will be used to document the operation and maintenance procedures.

6.5.4 The O/M Plan shall not be implemented prior to approval in writing by the APCO.

6.5.5 The O/M Plan shall be updated prior to any planned change in operation of the VOC emission control system.

6.5.5.1 A person may request a change to the O/M Plan at any time.

6.5.5.2 If the O/M Plan undergoes significant changes to one or more O/M Plan elements, a person must notify the District no later than seven (7) days after the change.

6.5.5.3 If the O/M Plan undergoes significant changes to one or more O/M Plan elements, a person must submit an updated O/M Plan to the APCO for approval no later than fourteen (14) days after the change.

6.5.6 A person with a VOC emission control system that has an active Permit-To-Operate subject to the provisions of this rule on January 31, 2004 shall submit an Operation and Maintenance Plan for approval by the APCO by August 1, 2004. An O/M Plan is not required for an inactive VOC emission control system until 180 days before start-up. A period of shorter than 180 days may be allowed if it can be shown that the equipment will be started up sooner than expected.

6.5.7 A person receiving an Authority to Construct for a new or modified VOC emission control system shall submit a new or modified O/M Plan to the APCO prior to implementation of an Authority to Construct for the VOC emission control system.

6.5.8 The APCO shall provide written notice to the facility of the approval or incompleteness of a new or revised O/M Plan within 30 days of receiving such plan.

6.6 Compliance Statement Requirements

6.6.1 The manufacturer of any coating subject to this rule shall indicate on the coating container, or on a separate product data sheet or material safety data sheet, the name of the coating, manufacturer's name, the VOC content, specific mixing instructions, and density, as supplied. The VOC content shall be expressed in units of g/l or lb/gallon. Effective date for compliance is August 1, 2004.

6.6.2 The manufacturer of any solvent subject to this rule shall indicate on the solvent container, or on a separate product data sheet or material safety data sheet, the name of the solvent, manufacturer's name, the VOC content, density, and VOC composite partial vapor pressure, as defined in the rule, of the solvent, as supplied. The VOC content and VOC composite vapor pressure shall be expressed in units of g/l or lb/gallon and mm Hg at 20^{o}C (68^{o}F), respectively. On and after November 15, 2003, the composite partial pressure of solvents used for cleaning operations will not be regulated, so the VOC composite partial vapor pressure need not be recorded after February 1, 2004.

6.7 Test Methods

6.7.1 Determination of VOC Content

6.7.1.1 The VOC content of solvents and organic materials shall be determined by using United States Environmental Protection Agency (EPA) Test Method 24 or 24A, or South Coast Air Quality Management District (SCAQMD) Method 304 (Determination of Volatile Organic Compounds in Various Materials), or by using the manufacturer's product formulation data and the formula for "Grams of VOC per liter of Material" in Section 3.0.

6.7.1.2 The content of exempt halogenated VOCs shall be determined by using the California Air Resources Board (ARB) Test Method 432 or SCAQMD Test Method 303 (Determination of Exempt Compounds).

6.7.2 Determination of Overall Capture and Control Efficiency of VOC Emission Control Devices

6.7.2.1 The capture efficiency of an emission collection control system shall be determined according to EPA's "Guidelines for Determining Capture Efficiency," January 9, 1995 and 40 CFR 51, Appendix M, Methods 204-204F, as applicable, noted below or any other method approved by EPA, ARB, and the APCO:

6.7.2.1.1 EPA Method 204A (VOCs in Liquid Input Stream),

6.7.2.1.2 EPA Method 204B (VOCs in Captured Stream),

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

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

6.7.2.1.5 EPA Method 204E (Fugitive VOCs from Building Enclosure),

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

6.7.2.1.7 EPA Method 204 (Criteria For And Verification Of A Permanent or Temporary Total Enclosure).

6.7.2.2 The emission control system efficiency of any air pollution control equipment shall be determined using EPA Methods 2, 2A, or 2D for measuring flow rates and EPA Methods 25, 25A, or 25B for measuring total gaseous organic concentrations at the inlet and outlet of the control device. EPA Test Method 18 or ARB Method 422 shall be used to determine the emissions of exempt compounds.

6.7.2.3 For VOC emission control systems that consist of a single VOC emission collection device connected to a single VOC emission control device, the overall capture and control efficiency may be calculated by using the following equation:

$$CE_{Capture\ and\ Control} = [\ CE_{Capture} \times CE_{Control}\ ] / 100$$

Where:

$CE_{Capture\ and\ Control}$ = Overall Capture and Control Efficiency, in percent

$CE_{Capture}$ = Capture Efficiency of the collection device, in percent, as determined in Section 6.7.2.1

$CE_{Control}$ = Control Efficiency of the control device, in percent, as determined in Section 6.7.2.2.

6.7.3 Determination of Vapor Pressure

The composite partial pressure of solvents shall be determined by:

6.7.3.1 Determining the identity and quantity of each compound in a blended organic solvent by using ASTM D2306, or SCAQMD Method 308 or by using ASTM E260 for organics and ASTM D3792 for water content, if applicable, or the manufacturer's product formulation data, and

6.7.3.2 Determining the vapor pressure of each pure VOC component by using ASTM D2879 or from publications such as Perry's Chemical Engineer's Handbook, CRC Handbook of Chemistry and Physics, Lange's Handbook of Chemistry, or other District approved sources; and

6.7.3.3 Calculating the composite partial pressure of the solvent by using the formula for "Composite Partial Pressure" in Section 3.0. For the purpose of this calculation, the blended solvent shall be assumed to be an ideal solution where Raoult's Law applies. The partial pressures of each compound at 20º C (68º F) shall be used in the formula.

6.7.4 Determination of Solvent Losses from Spray Gun Cleaning Systems

The passive and active solvent losses from spray gun cleaning systems shall be determined by using SCAQMD "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems" dated October 3, 1989. The test solvent for this determination shall be lacquer thinner with a minimum vapor pressure of 105 mm Hg at 20^{o}C. The minimum temperature shall be 15^{o}C.

6.7.5 Transfer Efficiency

Transfer efficiency shall be determined by one of the following:

6.7.5.1 SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User, May 24, 1989, or

6.7.5.2 Can Manufacturers' Institute (CMI) "Test Plan for Measuring Transfer Efficiency of Coating Application on 3-Piece Metal Cans" 1991, or

6.7.5.3 Any other test method for transfer efficiency for which written approval of the EPA, ARB, and the APCO has been obtained.

6.8 Multiple Test Methods

When more than one test method or set of test methods is 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 this rule.

6.9 Version of Test Methods

All ASTM test methods referenced in Section 6.0 are the most recently EPA-approved version that appears in the Code of Federal Regulations as Materials Approved for Incorporation by Reference.