

**RULE 67.4. METAL CONTAINER, METAL CLOSURE AND METAL COIL COATING OPERATIONS (Effective 5/9/79: Rev. Effective 7/25/95)**

**(a) APPLICABILITY**

(1) This rule applies to all metal container, metal closure and metal coil coating operations in which volatile organic compounds (VOC's) are employed.

(2) Operations subject to this rule shall not be subject to Rules 66 and 67.3.

**(b) RESERVED**

**(c) DEFINITIONS**

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

(1) **"Cleaning Material"** means a VOC containing material used for cleaning hands, tools, application equipment and work area.

(2) **"Closure"** means any metal component which is used to close or seal a container.

(3) **"Coating Line"** means an operation or process for applying, drying or oven baking and/or curing surface coatings, together with associated equipment including a coating applicator, flash-off area and oven.

(4) **"Coil"** means any flat metal sheets or strips that have been formed into rolls or coils for further industrial or commercial use.

(5) **"Container"** means any can, pail or drum.

(6) **"Drum"** means any manufactured or reconditioned cylindrical metal container that is larger than 12 gallon but smaller than 110 gallon capacity.

(7) **"End"** means a part of a container which is used for its closure after the container is filled with a product.

(8) **"End Sealing Compound"** means a compound which is coated onto a container closure and which functions as a gasket when the closure is assembled onto the container.

(9) **"Exempt Compound"** means any of –

(i) the following compounds:

1,1,1-trichloroethane,  
methylene chloride, (dichloromethane),  
trichlorofluoromethane (CFC-11),  
dichlorodifluoromethane (CFC-12),  
trifluoromethane (HFC-23),  
trichlorotrifluoroethane (CFC-113),  
dichlorotetrafluoroethane (CFC-114),  
chloropentafluoroethane (CFC-115),

chlorodifluoromethane (HCFC-22),  
dichlorotrifluoroethane (HCFC-123),  
dichlorofluoroethane (HCFC-141b),  
1,1,1,2-tetrafluoroethane (HFC-134a),  
1,1,2,2-tetrafluoroethane (HFC-134),  
chlorodifluoroethane (HCFC-142b),  
2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124),  
pentafluoroethane (HFC-125),  
1,1,1-trifluoroethane (HFC-143a),  
1,1-difluoroethane (HFC-152a),

- (ii) the following linear volatile methyl siloxane (VMS) compounds:

hexamethyldisiloxane (MM),  
octamethyltrisiloxane (MDM),  
decamethyltetrasiloxane (MD<sub>2</sub>M),  
dodecamethylpentasiloxane (MD<sub>3</sub>M),  
tetradecamethylhexasiloxane (MD<sub>4</sub>M),  
dimethyl silicones and siloxanes (MD<sub>x</sub>M),

- (iii) the following cyclic volatile methyl siloxane (VMS) compounds:

hexamethylcyclotrisiloxane (D<sub>3</sub>),  
octamethylcyclotetrasiloxane (D<sub>4</sub>),  
decamethylcyclopentasiloxane (D<sub>5</sub>),  
dodecamethylcyclohexasiloxane (D<sub>6</sub>),  
cyclopolydimethylsiloxanes (D<sub>x</sub>),

- (iv) the following branched volatile methyl siloxane (VMS) compounds:

1,1,1,3,5,5,5-heptamethyl-3-[(trimethylsilyl)oxyl]-trisiloxane (M<sub>3</sub>T),  
1,1,1,5,5,5-hexamethyl-3,3,bis[(trimethylsilyl)oxy]-trisiloxane (M<sub>4</sub>Q),  
pentamethyl[(trimethylsilyl)oxy]cyclotrisiloxane (MD<sub>3</sub>),

- (v) and the following four classes of perfluorocarbon (PFC) 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.

(10) **"Exterior Base Coating"** means a coating applied to the exterior of a container, body, closure or flat sheet to provide a protection to the metal or to provide background for any lithographic operation.

(11) **"Exterior Body Spray"** means a coating sprayed on the exterior of the container body to provide a decorative or protective finish.

(12) **"Food/Beverage Container"** means a metal container in which food or beverages intended for human consumption are packaged.

(13) **"Interior Base Coating"** means a coating applied to the interior of a container body or end or flat sheet to provide a protective lining between the product and the container.

(14) **"Interior Body Spray"** means a coating sprayed on the interior of the container to provide a protective film between the product and the container.

(15) **"Letterpress Coating"** means an acrylate-based topcoat which is used for coating letterpress printing plates during the manufacture of such plates.

(16) **"Lid"** means a reusable closure.

(17) **"Metal Container, Metal Closure, and Metal Coil Coating"** means any coating containing VOC's applied by spray, roller or other means to the inside and/or outside of metal containers, drums, pails, lids, closures or to the surface of flat sheets, rolls, or coil for further industrial or commercial use.

(18) **"Overvarnish"** means a coating applied directly over a design coating to reduce the coefficient of friction, to provide gloss and to protect the finish against abrasion and corrosion.

(19) **"Pail"** means any manufactured or reconditioned cylindrical metal container that is from one gallon to 12 gallon capacity and constructed of 29 gauge or heavier material.

(20) **"Pet Food Container"** means a metal container in which food for animal (non-human) consumption is packaged.

(21) **"Stationary Source"** means the same as defined in Rule 20.1.

(22) **"Three-Piece Container Side-Seam Spray"** means a coating sprayed on the exterior and/or interior of a welded, cemented or soldered seam to protect the exposed metal.

(23) **"Two-Piece Container Exterior End Spray"** means a coating sprayed on the exterior end of a container to provide protection to the metal.

(24) **"Volatile Organic Compound (VOC)"** means any volatile compound containing at least one atom of carbon, which may be emitted to the atmosphere during operations or activities subject to this rule, except methane, carbon monoxide, carbon dioxide, carbonic acid, ammonium carbonate, metallic carbides and carbonates, and exempt compounds.

(25) **"VOC Content Per Volume of Coating, Less Water and Exempt Compounds"** means the weight of VOC per combined volume of VOC and coating solids and is calculated by the following equation:

$$C_{\text{voc}} = (W_s - W_w - W_{\text{es}}) / (V_m - V_w - V_{\text{es}})$$

where:

$C_{\text{voc}}$  = VOC content of coating, less water and exempt compounds  
 $W_s$  = weight of volatile compounds including water and exempt compounds

$W_w$	=	weight of water
$W_{es}$	=	weight of exempt compounds
$V_m$	=	volume of material including water and exempt compounds
$V_w$	=	volume of water
$V_{es}$	=	volume of exempt compounds

(26) "VOC Content Per Volume of Material" means the weight of VOC per volume of material and is calculated by the following equation:

$$C_{mvoc} = (W_s - W_w - W_{es}) / V_m$$

where:

$C_{mvoc}$	=	VOC content of material
$W_s$	=	weight of volatile compounds including water and exempt compounds
$W_w$	=	weight of water
$W_{es}$	=	weight of exempt compounds
$V_m$	=	volume of material including water and exempt compounds

#### (d) STANDARDS

##### (1) VOC Limits

Except as provided for in Section (e), a person shall not use or apply coatings on any coating line of the type designated below which contains VOC's in excess of the following limits at the point of application:

(i)	Grams of VOC per liter of coating (less water and exempt compounds)
<u>Metal Container or Closure Coating Lines</u>	
Sheet base coat (exterior and interior) and overvarnish	180
Two-piece container exterior base coat and overvarnish	250
Container exterior body spray and exterior closure spray	250
Three-piece container side-seam spray	660
End sealing compound:	
Food/Beverage Container	20
Pet Food Container	20
Non-Food Container	20
Container interior body spray:	
Two-piece container	420
Three-piece container	310

Reconditioned drums, pails and lids:

Exterior spray	420
Interior spray	510

New drums, pails and lids :

Exterior spray	340
Interior spray	420

(ii)	Grams of VOC per liter of coating (less water and <u>exempt compounds</u> )
<u>Coil Coating Line</u>	
(A) Letterpress coatings	200
(B) Other coil coatings	200

(2) Cleaning of Application Equipment

A person shall not use VOC containing materials for the cleaning of application equipment used in operations subject to this rule unless:

- (i) The cleaning material contains 200 grams or less of VOC per liter of material; or
- (ii) The cleaning material has an initial boiling point of 190°C (374°F) or greater; or
- (iii) The solvent has a total VOC vapor pressure of 20 mm Hg or less, at 20°C (68°F); or
- (iv) The cleaning material is flushed or rinsed through the application equipment in a contained manner that will minimize evaporation into the atmosphere; or
- (v) The application equipment or equipment parts are cleaned in a container which is open only when being accessed for adding, cleaning, or removing application equipment or when cleaning solvent is being added, provided the cleaned equipment or equipment parts are drained to the container until dripping ceases; or
- (vi) A system is used that totally encloses the component parts being cleaned during the washing, rinsing, and draining processes; or
- (vii) The combined usage of cleaning materials not complying with any of the standards described in Subsection (2)(i) through Subsection (2)(vi) above is less than 10 gallons each calendar month at a stationary source.

(e) ADD-ON CONTROL DEVICE

(1) In lieu of complying with the provisions of Subsection (d)(1), a person may use an air pollution control system which:

- (i) has been installed in accordance with an Authority to Construct; and
- (ii) includes an emission collection system which captures and transports organic gaseous emissions to an air pollution control device; and

(iii) has a combined VOC emissions capture and control device efficiency of at least 85 percent by weight.

(2) A person subject to the requirements of this section shall submit to the Air Pollution Control Officer for approval an Operation and Maintenance (O&M) plan for the proposed emission control device and emission collection system. Such plan shall:

(i) identify all key system operating parameters. Key system operating parameters are those necessary to ensure compliance with Subsection (e)(1)(iii) such as temperature, pressure, and/or flow rate, and

(ii) include proposed inspection schedules, anticipated ongoing maintenance, and proposed recordkeeping practices regarding the key system operating parameters.

(3) The Operation and Maintenance plan must be submitted to the Air Pollution Control Officer and receive approval prior to operation of the air pollution control equipment. A person subject to the requirements of this section shall implement the plan on approval of the Air Pollution Control Officer.

**(f) RECORDKEEPING**

(1) Any person subject to the requirements of Sections (d) or (e) of this rule shall maintain records in accordance with the following:

(i) Maintain a current list of coatings and volatile organic compounds (VOC's) in use which provides all of the coating and VOC data necessary to evaluate compliance.

(ii) Maintain records on a monthly basis showing the types and amounts of solvents used for clean-up.

(2) Any person complying with the requirements of Subsection (d)(1) shall maintain daily or monthly records showing the type and amount used of each coating, solvent used as thinner or diluent, and VOC-containing material.

(3) Any person complying with the requirements of Subsection (d)(1) by using control equipment pursuant to Section (e) of this rule shall:

(i) for all materials not in compliance with Subsection (d)(1) of this rule, maintain daily records of the amount used of each material coating, solvent used as thinner or diluent, and VOC-containing material; and

(ii) maintain daily records sufficient to document continuous compliance with Subsection (e)(1)(iii), including records of key system operating parameters as approved in the Operation and Maintenance plan.

Such records shall be retained on site for at least three years, and shall be made available to the District upon request.

**(g) VOC TEST METHODS**

(1) Measurements of VOC content of coatings and cleaning materials subject to Subsections (d)(1)(i), (d)(1)(ii)(B), and (d)(2)(i) of this rule shall be conducted and reported in accordance with EPA Test Method 24 (40 CFR 60, Appendix A) as it exists on July 25, 1995.

(2) Measurements of VOC content of coatings subject to Subsection (d)(1)(ii)(A) of this rule shall be conducted and reported in accordance with San Diego Air Pollution Control District's Method 24D for Determination of Density, Total Volatile Matter Content, and Weight Solids of Surface Coatings Containing Photosensitive Reactive Diluents as it exists on July 25, 1995.

(3) Measurement of the control device efficiency subject to Subsection (e)(1)(iii) of this rule shall be conducted in accordance with EPA Methods 18 and/or 25A (40 CFR 60) as they exist on July 25, 1995 and in accordance with a protocol approved by the Air Pollution Control Officer.

(4) Measurement of the emission collection system capture efficiency subject to Subsection (e)(1) (ii) of this rule shall be determined according to EPA's technical document, "Guidelines for Determining Capture Efficiency," dated January 9, 1995, using a protocol approved by the Air Pollution Control Officer. Subsequent to the initial compliance demonstration period, applicable key system operating parameters, as approved by the Air Pollution Control Officer, may be used as verification that capture efficiency has not diminished.

(5) Perfluorocarbon (PFC) compounds and other exempt compounds shall be assumed to be absent from a coating, or cleaning material subject to this rule unless a manufacturer of the material or a facility operator identifies the specific individual compound(s) present in the material and provides an EPA and ARB approved test method which can be used to quantify the specific compounds.

(6) Measurement of the initial boiling point of cleaning materials subject to Subsection (d)(2)(ii) shall be conducted in accordance with ASTM Standard Test Method D1078-86 for distillation range of volatile organic liquids.

(7) Calculation of total VOC vapor pressure for materials subject to Subsection (d)(2)(iii) of this rule shall be conducted in accordance with the District's "Procedures for Estimating the Vapor Pressure of VOC Mixtures" as it exists on July 25, 1995. If the vapor pressure of the liquid mixture, as calculated by this procedure, exceeds the limits specified in Subsection (d)(2)(iii), the vapor pressure shall be determined in accordance with ASTM Standard Test Method D2879-86. The solvent composition shall be determined using one of the following ASTM standard recommended practices: E168-92, E169-93 or E260-91. The fraction of water and exempt compounds in the liquid phase shall be determined by using ASTM Standard Test Methods D3792-91 and D4457-85 and shall be used to calculate the partial pressure of water and exempt compounds. The results of vapor pressure measurements obtained using ASTM Test Method D2879-86 shall be corrected for partial pressure of water and exempt compounds.