Chapter 129 -- Standards for Sources

SOURCES OF VOCs

§ 129.52a. Control of VOC emissions from large appliance and metal furniture surface coating processes.

(a) *Applicability.* This section applies as follows:

(1) This section applies to the owner and operator of a large appliance or metal furniture surface coating process if the total actual VOC emissions from all large appliance or metal furniture surface coating operations, including related cleaning activities, at the facility are equal to or greater than 15 pounds (6.8 kilograms) per day or 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of controls.

(2) The emission limits and other requirements of this section supersede the emission limits and other requirements of § 129.52 (relating to surface coating processes) for large appliance and metal furniture surface coating processes.

(b) *Existing RACT permit.* The requirements of this section supersede the requirements of a RACT permit issued to the owner or operator of a source subject to subsection (a)(1) prior to January 1, 2011, under § § 129.91—129.95 (relating to stationary sources of NOx and VOCs) to control, reduce or minimize VOCs from a large appliance or metal furniture surface coating operation, except to the extent the RACT permit contains more stringent requirements.

(c) *Emission limits.* Beginning January 1, 2011, a person subject to this section may not cause or permit the emission into the outdoor atmosphere of VOCs from a large appliance or metal furniture surface coating process, unless one of the following limitations is met:

(1) The VOC content of each as applied coating is equal to or less than the limit specified in Table I or Table II (relating to emission limits of VOCs for large appliance surface coatings; and emission limits of VOCs for metal furniture surface coatings).

(i) The VOC content of the as applied coating, expressed in units of weight of VOC per volume of coating solids, shall be calculated as follows:

$VOC = (W_o)(D_c)/V_n$

Where:

VOC = VOC content in lb VOC/gal of coating solids

W_o = Weight percent of VOC (W_v-W_w-W_{ex})

W_v = Weight percent of total volatiles (100%-weight percent solids)

W_w = Weight percent of water

W_{ex} = Weight percent of exempt solvent(s)

D_c = Density of coating, lb/gal, at 25° C

V_n = Volume percent of solids of the as applied coating

(ii) The VOC content of a dip coating, expressed in units of weight of VOC per volume of coating solids, shall be calculated on a 30-day rolling average basis using the following equation:

$$VOC_A = \frac{SUM_i\ (W_{oi} \times D_{ci} \times Q_i) + SUM_J\ (W_{oJ} \times D_{dJ} \times Q_J)}{SUM_i\ (V_{ni} \times Q_i)}$$

Where:

VOC_A = VOC content in lb VOC/gal of coating solids for a dip coating, calculated on a 30-day rolling average basis

W_{oi} = Percent VOC by weight of each as supplied coating (i) added to the dip coating process, expressed as a decimal fraction (that is 55% = 0.55)

D_{ci} = Density of each as supplied coating (i) added to the dip coating process, in pounds per gallon

Q_i = Quantity of each as supplied coating (i) added to the dip coating process, in gallons

V_{ni} = Percent solids by volume of each as supplied coating (i) added to the dip coating process, expressed as a decimal fraction

W_{oJ} = Percent VOC by weight of each thinner (J) added to the dip coating process, expressed as a decimal fraction

D_{dJ} = Density of each thinner (J) added to the dip coating process, in pounds per gallon

Q_J = Quantity of each thinner (J) added to the dip coating process, in gallons

(iii) Sampling and testing shall be done in accordance with the procedures and test methods specified in Chapter 139 (relating to sampling and testing).

(2) The overall weight of VOCs emitted to the atmosphere is reduced through the use of vapor recovery or incineration or another method that is acceptable under § 129.51(a) (relating to general). The overall efficiency of a control system, as determined by the test methods and procedures specified in Chapter 139, may be no less than 90% or may be no less than the equivalent efficiency as calculated by the following equation, whichever is less stringent:

$O = (1 - E/V) \times 100$

Where:

V = The VOC content of the as applied coating, in lb VOC/gal of coating solids.

E = The Table I or Table II limit in lb VOC /gal of coating solids.

O = The overall required control efficiency.

(d) *Compliance monitoring procedures.* The owner or operator of a facility subject to this section shall maintain records sufficient to demonstrate compliance with this section. At a minimum, the owner or operator shall maintain daily records of:

(1) The following parameters for each coating, thinner, component and cleaning solvent as supplied:

(i) Name and identification number.

(ii) Volume used.

(iii) Mix ratio.

(iv) Density or specific gravity.

(v) Weight percent of total volatiles, water, solids and exempt solvents.

(vi) Volume percent of solids for each Table I or Table II coating used in the surface coating process.

(2) The VOC content of each coating, thinner, component and cleaning solvent as supplied.

(3) The VOC content of each as applied coating or cleaning solvent.

(e) *Recordkeeping and reporting requirements.* The records required under subsection (d) shall be:

(1) Maintained for 2 years, unless a longer period is required under § 127.511(b)(2) (relating to monitoring and related recordkeeping and reporting requirements).

(2) Submitted to the Department upon receipt of a written request.

(f) *Coating application methods.* A person subject to this section may not cause or permit the emission into the outdoor atmosphere of VOCs from the application of large appliance or metal furniture surface coatings, unless the coatings are applied using one or more of the following coating application methods:

(1) Electrostatic coating.

(2) Roller coating.

(3) Flow coating.

(4) Dip coating, including electrodeposition.

(5) High volume-low pressure (HVLP) spray.

(6) Brush coating.

(7) Other coating application method, if approved in writing by the Department prior to use.

(i) The coating application method must be capable of achieving a transfer efficiency equivalent to or better than that achieved by the methods listed in paragraphs (1)—(6).

(ii) The request for approval must be submitted in writing.

(g) *Exempt coatings and coating operations.* The VOC coating content limits in Table I and Table II do not apply to the following types of coatings and coating operations:

(1) Stencil coatings.

(2) Safety-indicating coatings.

(3) Solid-film lubricants.

(4) Electric-insulating coatings.

(5) Thermal-conducting coatings.

(6) Touch-up and repair coatings.

(7) Coating applications using hand-held aerosol cans.

(8) A coating used exclusively for determining product quality and commercial acceptance and other small quantity coatings, if the coating meets the following criteria:

(i) The quantity of coating used does not exceed 50 gallons per year for a single coating and a total of 200 gallons per year for all coatings combined for the facility.

(ii) The owner or operator of the facility requests, in writing, and the Department approves, in writing, the exemption prior to use of the coating.

(h) *Work practice requirements for coating-related activities.* The owner or operator of a large appliance or metal furniture surface coating process subject to this section shall comply with the following work practices for coating-related activities:

(1) Store all VOC-containing coatings, thinners and coating-related waste materials in closed containers.

(2) Ensure that mixing and storage containers used for VOC-containing coatings, thinners and coating-related waste materials are kept closed at all times except when depositing or removing these materials.

(3) Minimize spills of VOC-containing coatings, thinners and coating-related waste materials and clean up spills immediately.

(4) Convey VOC-containing coatings, thinners and coating-related waste materials from one location to another in closed containers or pipes.

(i) *Work practice requirements for cleaning materials.* The owner or operator of a large appliance or metal furniture surface coating process subject to this section shall comply with the following work practices for cleaning materials:

(1) Store all VOC-containing cleaning materials and used shop towels in closed containers.

(2) Ensure that mixing and storage containers used for VOC-containing cleaning materials are kept closed at all times except when depositing or removing these materials.

(3) Minimize spills of VOC-containing cleaning materials and clean up spills immediately.

(4) Convey VOC-containing cleaning materials from one location to another in closed containers or pipes.

(5) Minimize VOC emissions from cleaning of storage, mixing and conveying equipment.

Table I

Emission Limits of VOCs for Large Appliance Surface Coatings

Weight of VOC per Volume of Coating Solids, as Applied

Coating Type	*Baked*		*Air Dried*	
	kg/l	lb/gal	kg/l	lb/gal
General, One Component	0.40	3.34	0.40	3.34
General, Multi- Component	0.40	3.34	0.55	4.62
Extreme High Gloss	0.55	4.62	0.55	4.62
Extreme Performance	0.55	4.62	0.55	4.62
Heat Resistant	0.55	4.62	0.55	4.62
Metallic	0.55	4.62	0.55	4.62
Pretreatment	0.55	4.62	0.55	4.62
Solar Absorbent	0.55	4.62	0.55	4.62

Table II

Emission Limits of VOCs for Metal Furniture Surface Coatings

Weight of VOC per Volume of Coating Solids, as Applied

Coating Type	*Baked*		*Air Dried*	
	kg/l	lb/gal	kg/l	lb/gal
General, One Component	0.40	3.34	0.40	3.34
General, Multi- Component	0.40	3.34	0.55	4.62
Extreme High Gloss	0.61	5.06	0.55	4.62
Extreme Performance	0.61	5.06	0.61	5.06
Heat Resistant	0.61	5.06	0.61	5.06
Metallic	0.61	5.06	0.61	5.06
Pretreatment	0.61	5.06	0.61	5.06
Solar Absorbent	0.61	5.06	0.61	5.06