1100 Air Quality Management Section

1124 Control of Volatile Organic Compound Emissions

12.0 Surface Coating of Plastic Parts.

04/11/2010

12.1 Applicability

12.1.1 The provisions of 12.0 of this regulation apply to any plastic parts or products coating unit. Except as provided in 12.1.2 of this regulation, every owner or operator of any plastic parts or products coating unit shall comply with the provisions of 12.0 of this regulation on and after April 11, 2010.

12.1.2 Transition period for existing permitted sources. Every owner or operator of any plastic parts or products coating unit that has a permit issued pursuant to 7 **DE Admin Code** 1102 or 1130 containing all applicable conditions of 12.0 of this regulation, as that regulation existed on November 29, 1994, shall comply with those permit conditions until December 31, 2010. On and after January 1, 2011, every such owner or operator of any plastic parts or products coating unit shall comply with the provisions of 12.0 of this regulation.

12.1.3 If a metal component permanently attached to a plastic part is coated in a spray booth or on a process line where plastic parts or products are being coated, the requirements of 12.0 of this regulation apply to the coating of both the plastic part and the attached metal component.

12.1.4 The provisions of 12.0 of this regulation do not apply to the following plastic parts or products:

12.1.4.1 Parts covered by other sections of this regulation.

12.1.4.2 Exterior parts of completely assembled marine vessels.

12.1.4.3 Internal electrical parts of business and commercial machines, including, but not limited to, medical and entertainment equipment.

12.1.5 Except as provided in 12.1.6 of this regulation, the provisions of 12.0 of this regulation do not apply to plastic parts or products coating facilities whose actual emissions, without control devices, from all plastic parts or products coating units, including emissions from related cleaning activities, are less than 6.8 kilograms (kg) (15 pounds [lb]) of volatile organic compounds (VOCs) per day.

12.1.6 An owner operator of a facility whose emissions are below the applicability threshold in 12.1.5 of this regulation shall comply with the certification, recordkeeping, and reporting requirements of 12.7.1 of this regulation.

12.1.7 Any facility that becomes or is currently subject to the provisions of 12.0 of this regulation by exceeding the applicability threshold in 12.1.5 of this regulation shall remain subject to these provisions even if emissions later fall below the applicability threshold.

12.1.8 Any facility that is currently subject to a state or federal rule promulgated pursuant to the Clean Air Act Amendments of 1977 by exceeding an applicability threshold is and shall remain subject to these provisions, even if throughput or emissions later fall below the applicability threshold.

12.2 Definitions. As used in 12.0 of this regulation, all terms not defined herein shall have the meaning given them in the November 15, 1990 Clean Air Act Amendments (CAAA), or in 2.0 of this regulation.

"Basecoat/clearcoat" means a two-step topcoat system in which a highly pigmented, often metallic, basecoat is followed by a clearcoat, resulting in a finish with high-gloss characteristics.

"Black coating" means a coating which meets a maximum lightness of 23 units, and has a saturation of less than 2.8, where saturation equals the square root of $A^2 + B^2$. These criteria are based on Cielab color space, 0/45geometry. For spherical geometry, specular included, the maximum lightness is 33 units.

"Business machine" means a device that uses electronic or mechanical methods to process information, perform calculations, print or copy information or convert sound into electrical impulses for transmission, including devices listed in standard industrial classification numbers 3572, 3573, 3574,3579, and 3661 and photocopy machines, a subcategory of standard industrial classification number 3861.

"Commercial machine" means a device that is used in commercial activities, including, but not limited to, medical, laboratory and entertainment equipment.

"Electric dissipating coating" means a coating that rapidly dissipates a high-voltage electric charge.

"Electrostatic preparation coating" means a coating that is applied to a plastic part solely to provide conductivity for the subsequent application of a prime, a topcoat, or other coating through the use of electrostatic application methods. An electrostatic prep coat is clearly identified as an electrostatic prep coat on its accompanying material safety data sheet.

"EMI/RFI (Electromagnetic interference/radio frequency interference shielding coating" means a coating that is used in a plastic business or commercial machine housing to attenuate electromagnetic and radio frequency interference signals that would otherwise pass through the plastic housing.

"**Flexible primer**" means any coating that is required to comply with engineering specifications for impact resistance, mandrel bend, or elongation as defined by the original equipment manufacturer.

"Fog coat" means a coating that is applied to a plastic part for the purpose of color matching without masking a molded-in texture. A fog coat shall not be applied at a thickness of more than 0.5 mils of coating solids.

"Gloss reducer" means a coating that is applied to a plastic part solely to reduce the shine of the part. A gloss reducer shall not be applied at a thickness of more than 0.5 mils of coating solids.

"High-bake coating" means a coating that is designed to cure at temperatures above 90 degrees Celsius (°C) (194 degrees Fahrenheit [°F]).

"**Higher-solids coating**" means a coating that contains greater amounts of pigment and binder than a conventional coating. Solids are the non-solvent, non-water ingredients in the coating. A higher-solids coating usually contains more than 60% solids by volume.

"**Low-bake coating"** means a coating that is designed to cure at temperatures lower than 90°C (194°F).

"Mask coating" means thin film coating applied through a template to coat a small portion of a substrate.

"Military specification coating" means a coating which has a formulation approved by a United States military agency for use on military equipment.

"**Nonflexible primer**" means a paint that cannot withstand dimensional changes.

"**Optical coating"** means a coating applied to an optical lens.

"**Plastic part or product**" means a piece made from a substance that has been formed from resin through the application of pressure or heat. Plastic parts or products include automotive or other transportation equipment including, but not limited to, parts or products for automobiles, trucks (light-, medium and heavy-duty), large and small farm machinery, motorcycles, recreational vehicles, construction equipment, vans, buses, lawnmowers and other motorized mobile equipment; business and commercial machines, including, but not limited to, computers, copy machines, typewriters, medical equipment, laboratory equipment and entertainment equipment; and commercial and industrial machinery, sporting goods, toys, lawn and garden equipment and other industrial and household products.

"Red coating" means a coating which meets all of the following criteria: yellow limit, the hue of hostaperm scarlet; blue limit, the hue of monastral red-violet, lightness limit for metallics, 35% aluminum flake; lightness limit for solids, 50% titanium dioxide white; solid reds, hue angle of -11 to 38 degrees and maximum lightness of 23 to 45 units; metallic reds, hue angle of -16 to 35 degrees and maximum lightness of 28 to 45 units. These criteria are

based on Cielab color space, 0/45 geometry. For spherical geometry, specula included, the upper limit is 49 units. The maximum lightness varies as the hue moves from violet to orange. This is a natural consequence of the strength of the colorants, and real colors show this effect.

"**Solids content**" means the non-solvent, non-water ingredients in the coating, which consist of pigment and binders that do not evaporate and have the potential to form a cured (dry) film. The solids content can be expressed in terms of volume percent or weight percent.

"Specialty coating" means a coating that is used for unusual job performance requirements, usually in small amounts. These products include but are not limited to adhesion primers, resist coatings, soft coatings, reflective coatings, electrostatic prep coatings, headlamp lens coatings, ink pad printing coatings, stencil coatings, texture coatings (automotive), vacuum metalizing coatings, and gloss flatteners.

"Texture coat" means a coating that is applied to a plastic part which, in its finished form, consists of discrete raised spots of the coating.

"Translucent coating" means a coating which contains binders and pigment, and is formulated to form a colored, but not opaque, film.

12.3 Standards

12.3.1 Except as provided in 12.4 of this regulation, no owner or operator of a plastic parts or products coating unit subject to 12.0 of this regulation shall cause or allow the application of any coating to plastic parts or products unless:

12.3.1.1 The VOC content of the coating is less than or equal to the limits listed in Table 12-1 of this regulation, or

12.3.1.2 For a plastic parts or products coating unit that applies multiple coatings, which are subject to the same numerical emission limitation in Table 12-1 of this regulation, the daily-weighted average VOC content, calculated in accordance with the procedure specified in **Appendix C** of this regulation, is less than or equal to the limit in Table 12-1 of this regulation corresponding to the category of coating used, or

12.3.1.3 Control equipment is installed and operated that achieves an emission reduction efficiency in accordance with 12.5 of this regulation. The requirements of 12.3.2 shall not apply to any plastic parts or products coating unit that achieves an emission reduction efficiency of 95% or greater.

12.3.2 Except as provided in 12.3.1.3 and 12.4 of this regulation, no owner or operator of a plastic parts or products coating unit subject to 12.0 of this regulation shall apply a coating to plastic parts or products unless the coating is applied with equipment properly operated and maintained according to the manufacturer's suggested guidelines and using one or more of the following coating application methods:

12.3.2.1 Electrostatic spray

12.3.2.2 Flow coating

12.3.2.3 Dip coating, including electrodeposition

12.3.2.4 Roll coating

12.3.2.5 High-volume, low-pressure (HVLP) spray

12.3.2.6 Hand application

12.3.2.7 An alternative method demonstrated to be capable of achieving a transfer efficiency equal to or better than HVLP spray and approved by the Department.

Table 12-1 Plastic Parts Coating VOC Content Limits

Table 12-1 coating VOC content limits are expressed as mass (kilogram [kg] or pound [lb]) per volume (liter [l] or gallon [gal]) of coating less water and exempt compounds, as applied.

Coating Category	kg VOC/l coating	lb VOC/gal coating
General *		
One component coating	0.28	2.3
Multi component coating	0.42	3.5
Electric dissipating coatings and shock-free Coatings	0.36	3.0
Extreme performance	0.42 (2pack)	3.5(2pack)
Metallic	0.42	3.5
Military specification	0.34 (1pack)	2.8 (1pack)
	0.42 (2pack)	3.5 (2pack)
Mold-seal	0.76	6.3
Multicolored coatings	0.68	5.7
Optical coatings	0.80	6.7
Vacuum-metalizing	0.80	6.7
Business Machine Parts		
Primers	0.14	1.2
Topcoat	0.28	2.3
Texture coat	0.28	2.3
Fog coat	0.26	2.2
Touchup and repair	0.28	2.3
Clearcoats	0.28	2.3
EMI/RFI Coatings	0.48	4.0
Soft Coatings	0.52	4.3
Plating Resist Coatings	0.71	5.9
Plating Sensitizer Coatings	0.85	7.1

Automotive/Transportation Parts		
High bake coatings		
Flexible primer	0.46	3.8
Non-flexible primer	0.42	3.5
Base coats	0.52	4.3
Clear coat	0.48	4.0
Non-basecoat/clear coat	0.52	4.3
Interior colorcoat	0.49	4.1
Exterior colorcoat	0.55	4.6
Low bake/air dried coatings – exterior	0.58	4.8
Primers	0.60	5.0
Basecoat	0.54	4.5
Clearcoats	0.60	5.0
Non-basecoat/clearcoat	0.67	5.6
Red and black colorcoats	0.61	5.1
All other colorcoats	0.42	3.5
Low bake/air dried coatings – interior primers	0.38	3.2
colorcoats	0.62	5.2
Touchup and Repair coatings		
[Auto Specialty]	0.66	5.5
Vacuum metalizing basecoats	0.66	5.5
Texture coatings	0.71	5.9
Reflective argent coatings	0.71	5.9
Soft specialty coatings	0.71	5.9
Air bag cover coatings	0.77	6.4
Gloss Flatteners	0.77	6.4
Vacuum metalizing topcoats	0.77	6.4
Texture topcoats	0.81	6.8
Stencil coatings	0.81	6.8
Adhesion primers	0.81	6.8
Ink pad printing coatings	0.81	6.8
Electrostatic prep coats	0.81	6.8
Resist coatings	0.89	7.4
Headlamp lens coatings		

* General refers to those parts or products which are not Business Machine Parts or

Automotive/Transportation Parts.

12.4 Specific Exemptions

12.4.1 The requirements of 12.3.1 of this regulation shall not apply to the following coatings and coating operations related to general plastic parts and products:

12.4.1.1 Touch-up and repair coatings,

12.4.1.2 Stencil coatings,

12.4.1.3 Clear or translucent coatings,

12.4.1.4 Coatings applied at a paint manufacturing facility while conducting performance tests on the coatings,

12.4.1.5 Any individual coating category used in volumes less than 50 gallons in any one year, if substitute compliant coatings are not available, provided that the total usage of all such coatings does not exceed 200 gallons per year, per facility,

12.4.1.6 Reflective coating applied to highway cones,

12.4.1.7 Mask coatings that are less than 0.5 millimeter thick (dried) and the area coated is less than 25 square inches,

12.4.1.8 EMI/RFI shielding coatings, and

12.4.1.9 Heparin-benzalkonium chloride (HBAC)-containing coatings applied to medical devices, provided that the total usage of all such coatings does not exceed 100 gallons per year, per facility.

12.4. 2 The requirements of 12.3.2 shall not apply, for general plastic parts and products coatings, to air brush operations using 5-gallons or less per year of coating.

12.4. 3 The requirements of 12.3.1 and 12.3.2 of this regulation shall not apply to the following types of coatings:

12.4.3.1 Aerosol coating product, and

12.4.3.2 Powder coatings.

12.5 Control Devices

12.5.1 An owner or operator of a plastic part~~s~~ or products coating unit subject to 12.3.1.3 of this regulation shall determine the emission reduction efficiency needed to comply and demonstrate compliance as follows:

12.5.1.1 Determine for each day the overall emission reduction efficiency needed to demonstrate compliance. The overall emission reduction needed for a day is the lesser of the value calculated according to the procedure in 3.3 of **Appendix C** of this regulation for that day, or 95%.

12.5.1.2 Demonstrate each day that the overall emission reduction efficiency achieved for that day, as determined in **Appendix D** of this regulation, is greater than or equal to the overall emission reduction efficiency required for that day.

12.5.2 An owner or operator of a plastic parts or products coating unit subject to 12.3.1.3 of this regulation shall ensure that:

12.5.2.1 A capture system and control device are operated at all times that the unit is in operation, and the owner or operator demonstrates compliance with 12.0 of this regulation through the applicable coating analysis and capture system and control device efficiency test methods specified in **Appendix B**, **Appendix D** and **Appendix E** of this regulation and in accordance with the capture efficiency test methods in **Appendix D** of this regulation.

12.5.2.2 The control device is equipped with the applicable monitoring equipment specified in 2.0 of **Appendix D** of this regulation, and ~~that~~ the monitoring equipment is installed, calibrated, operated, and maintained according to the vendor's specifications at all times the control device is in use.

12.6 Test Methods. The test methods found in **Appendix A** through **Appendix D** of this regulation shall be used to determine compliance with 12.0 of this regulation.

12.6.1 The metal particle content of metallic coatings shall be determined by the California South Coast Air Quality Management District (SCAQMD) Method 318 “Determination of Weight Percent of Elemental Metal in Coatings by X-Ray Diffraction Method” contained in the SCAQMD “Laboratory Methods of Analysis of Enforcement Samples” (for coatings containing aluminum) or by SCAQMD Method 311 “Analysis of Percent Metal in Metallic Coatings by Spectrographic Method” contained in the SCAQMD “Laboratory Method of Analysis of Enforcement Samples” (for coatings containing metals other than aluminum).

12.7 Compliance Certification, Recordkeeping, and Reporting Requirements.

12.7.1 An owner or operator of a plastic parts or products coating unit exempt from the emission limits listed in 12.3 of this regulation shall comply with the certification, recordkeeping, and reporting requirements in 4.2 of this regulation.

12.7.2 An owner or operator of a plastic parts or products coating unit subject to 12.0 of this regulation and complying with 12.3.1 of this regulation by the use of compliant coatings shall comply with the certification, recordkeeping, and reporting requirements in 4.3 of this regulation.

12.7.3 An owner or operator of a plastic parts or products coating unit subject to 12.0 of this regulation and complying with 12.3.1 of this regulation by daily-weighted averaging shall comply with the certification, recordkeeping, and reporting requirements in 4.4 of this regulation.

12.7.4 An owner or operator of a plastic parts or products coating unit subject to 12.0 of this regulation and complying with 12.3.1 of this regulation by the use of control devices shall comply with the testing, certification, reporting, and recordkeeping requirements listed in 4.5 of this regulation.

12.7.5 An owner or operator of a plastic parts coating unit subject to 12.3.2 of this regulation shall maintain at the facility a copy of the equipment manufacturer's suggested operating and maintenance guidelines, and provide a copy to the Department upon request.