

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF AIR AND WASTE MANAGEMENT

Statutory Authority: 7 Delaware Code, Chapter 60; (7 **Del.C.**, Ch. 60)
7 **DE Admin. Code** 1124

PROPOSED

REGISTER NOTICE
SAN #2011-06

1124 Control of Volatile Organic Compound Emissions

1. Title of the Regulation:

Amendments to Regulation 1124 "Control of Volatile Organic Compounds", Section 12.0, "Surface Coating of Plastic Parts"; Section 19.0, "Coating of Metal Furniture"; Section 20.0, "Coating of Large Appliances"; Section 22.0, "Coating of Miscellaneous Metal Parts".

2. Brief Synopsis of the Subject, Substance and Issues:

The Department proposes to revise Sections 12.0, 19.0, 20.0 and 22.0 of 7 **DE Admin. Code** 1124 to specifically state that an alternative coating method that is demonstrated to be capable of achieving a transfer efficiency equal to or better than HVLP spray requires approval by EPA as well as by the Department. This requirement was requested by EPA. In addition some minor typos will be corrected.

3. Possible Terms of the Agency Action:

None.

4. Statutory Basis or Legal Authority to Act:

7 **Delaware Code**, Chapter 60.

5. Other Regulations that may be Affected by the Proposal:

None.

6. Notice of Public Comment:

There will be a hearing on these proposed amendments on Monday, May 23, 2011 beginning at 6pm in the Richardson & Robbins Building Auditorium. Interested parties may submit comments in writing to Gene M. Pettingill, Division of Air Quality, 715 Grantham Lane, New Castle, DE 19720 and/or statements and testimony may be presented either orally or in writing at the public hearing.

7. Prepared By:

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April 6, 2011

1124 Control of Volatile Organic Compound Emissions

(Break in Continuity of Sections)

12.0 Surface Coating of Plastic Parts.

~~04/11/2010~~ ~~xx/xx/xxxx~~

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 04/11//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 its 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 its 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. It is often used on automotive plastic parts.

"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, 0/45 geometry. 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 ($^{\circ}\text{C}$) (194 degrees Fahrenheit [$^{\circ}\text{F}$]).

"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 pigments 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 and by the EPA.

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 (2 pack)	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
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
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		
Primers	0.58	4.8
Basecoat	0.60	5.0
Clearcoats	0.54	4.5
Non-basecoat/clearcoat	0.60	5.0
Red and black colorcoats	0.67	5.6
All other colorcoats	0.61	5.1
Low bake/air dried coatings - interior primers	0.42	3.5
colorcoats	0.38	3.2
Touchup and Repair coatings	0.62	5.2

Auto Specialty		
Vacuum metalizing basecoats	0.66	5.5
Texture coatings	0.66	5.5
Reflective argent coatings	0.71	5.9
Soft specialty coatings	0.71	5.9
Air bag cover coatings	0.71	5.9
Gloss Flatteners	0.77	6.4
Vacuum metalizing topcoats	0.77	6.4
Texture topcoats	0.77	6.4
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	0.81	6.8
Headlamp lens coatings	0.89	7.4

* 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 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 a control device are operated at all times 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 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 **Appendices A through 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 listed 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 the use of 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 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.

13 DE Reg. 1344 (04/01/10)

(Break in Continuity of Sections)

19.0 Coating of Metal Furniture

~~04/11/2010~~ ~~xx/xx/xxxx~~

- 19.1 Applicability
 - 19.1.1 The provisions of 19.0 of this regulation apply to any metal furniture coating unit. Except as provided in 19.1.2 of this regulation, every owner or operator of any metal furniture coating unit shall comply with the provisions of 19.0 of this regulation on and after ~~[insert effective date]~~ 4/11/2020.
 - 19.1.2 Transition period for existing permitted sources. Every owner or operator of any metal furniture coating unit that has a permit issued pursuant to **7 DE Admin. Code** 1102 or 1130 containing all applicable conditions of 19.0 of this regulation, as that regulation existed on January 11, 1993, shall comply with those permit conditions until December 31, 2010. On and after January 1, 2011 every such owner or operator of any metal furniture coating unit shall comply with the provisions of 19.0 of this regulation.
 - 19.1.3 Except as provided in 19.1.4 of this regulation, the provisions of 19.0 of this regulation do not apply to any metal furniture coating unit within a facility whose actual emissions without control devices from all metal furniture coating units within the facility, including emissions from related cleaning activities, are less than 6.8 kilograms (kg) (15 pounds [lb]) of volatile organic compounds (VOCs) per day.
 - 19.1.4 An owner or operator of a facility whose emissions are below the applicability threshold in 19.1.3 of this regulation shall comply with the certification, recordkeeping, and reporting requirements of 19.7.1 of this regulation.
 - 19.1.5 Any facility that becomes or is currently subject to the provisions of 19.0 of this regulation by exceeding the applicability threshold in 19.1.3 of this regulation shall remain subject to these provisions, even if emissions later fall below the applicability threshold.

19.1.6 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.

19.2 Definitions. As used in 19.0 of this regulation, all terms not defined herein shall have the meaning given them in the November 15, 1990 Clean Air Act Amendments, or in 2.0 of this regulation.

“Metal furniture” means any furniture piece made of metal or any metal part that will be assembled with other metal, wood, fabric, plastic, or glass parts to form a furniture piece including, but not limited to, tables, chairs, waste baskets, beds, desks, lockers, benches, shelving, file cabinets, fixtures, lamps, lighting units, and room dividers.

“Metal furniture coating unit” means a coating unit in which a protective, decorative, or functional coating is applied onto the surface of metal furniture.

19.3 Standards

19.3.1 Except as provided in 19.4.1 of this regulation, no owner or operator of a metal furniture coating unit subject to 19.0 of this regulation shall cause or allow the application of any coating to metal furniture unless:

19.3.1.1 The VOC content of the coating is less than or equal to the limits listed in Table 19-1 of this regulation, or

Table 19-1 Metal Furniture Coating VOC Content Limits

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

Coating Category	Baked		Air Dried	
	kg VOC/l coating	lb VOC/gal coating	kg VOC/l coating	lb VOC/gal coating
General, one-component	0.275	2.3	0.275	2.3
General, multi-component	0.275	2.3	0.340	2.8
Extreme high-gloss	0.360	3.0	0.340	2.8
Extreme performance	0.360	3.0	0.420	3.5
Heat-resistant	0.360	3.0	0.420	3.5
Metallic	0.420	3.5	0.420	3.5
Pretreatment	0.420	3.5	0.420	3.5
Solar-absorbent	0.360	3.0	0.420	3.5

19.3.1.2 For a metal furniture coating unit that applies multiple coatings, which are subject to the same numerical emission limitation in Table 19-1 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 19-1 of this regulation corresponding to the category of coating used, or

19.3.1.3 Control equipment is installed and operated that achieves an emission reduction efficiency in accordance with 19.5 of this regulation. The requirements of 19.3.2 of this regulation shall not apply to any metal furniture coating unit that achieves an emission reduction efficiency of 95% or greater.

19.3.2 Except as provided in 19.3.1.3 and 19.4 of this regulation, no owner or operator of a metal furniture coating unit subject to 19.0 of this regulation shall apply a coating to metal furniture unless the coating is applied with equipment properly operating and maintained according to the manufacturer’s suggested guidelines and using one or more of the following coating application methods:

19.3.2.1 Electrostatic spray

19.3.2.2 Flow coating

19.3.2.3 Dip coating, including electrodeposition

19.3.2.4 Roll coating

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

19.3.2.6 Hand application

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

19.4 Specific Exemptions

19.4.1 The requirements of 19.3.1 and 19.3.2 of this regulation shall not apply for the following types of coatings:

- 19.4.1.1 Stencil coatings
- 19.4.1.2 Safety-indicating coatings
- 19.4.1.3 Solid film lubricants
- 19.4.1.4 Electric-insulating and thermal-conducting coatings
- 19.4.1.5 Aerosol coating product
- 19.4.1.6 Powder coatings

19.4.2 The requirements of 19.3.2 of this regulation shall not apply to touch-up and repair coatings.

19.5 Control Devices

19.5.1 An owner or operator of a metal furniture coating unit subject to 19.3.1.3 of this regulation shall determine the emission reduction efficiency needed to comply and demonstrate compliance as follows:

- 19.5.1.1 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%.
- 19.5.1.2 Determine 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.

19.5.2 An owner or operator of a metal furniture coating unit subject to 19.3.1.3 of this regulation shall ensure that:

- 19.5.2.1 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 19.0 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.
- 19.5.2.2 The control device is equipped with the applicable monitoring equipment specified in 2.0 of **Appendix D** of this regulation, and the monitoring equipment is installed, calibrated, operated, and maintained according to the vendor's specifications at all times the control device is in use.

19.6 Test Methods. The test methods found in **Appendix A** through **Appendix D** of this regulation shall be used to determine compliance with 19.0 of this regulation.

19.6.1 The acid content of pretreatment coatings and etching fillers shall be determined by ASTM International Method D 1613 06.

19.6.2 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).

19.7 Compliance Certification, Recordkeeping and Reporting Requirements

19.7.1 An owner or operator of a metal furniture coating unit exempt from the requirements of 19.3 of this regulation shall comply with the certification, recordkeeping, and reporting requirements in 4.2 of this regulation.

19.7.2 An owner or operator of a metal furniture coating unit subject to 19.0 of this regulation and complying with 19.3.1.1 of this regulation by the use of compliant coatings shall comply with the certification, recordkeeping, and reporting requirements in 4.3 of this regulation.

19.7.3 An owner or operator of a metal furniture coating unit subject to 19.0 of this regulation and complying with 19.3.1.2 of this regulation by daily-weighted averaging shall comply with the certification, recordkeeping, and reporting requirements in 4.4 of this regulation.

19.7.4 An owner or operator of a metal furniture coating unit subject to 19.0 of this regulation and complying with 19.3.1.3 of this regulation by the use of control devices shall comply with the testing, reporting, and recordkeeping requirements in 4.5 of this regulation.

19.7.5 An owner or operator of a metal furniture coating unit subject to 19.3.2 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.

20.0 Coating of Large Appliances

04/11/2010 xx/xx/xxxx

20.1 Applicability

- 20.1.1 The provisions of 20.0 of this regulation apply to any large appliance coating unit. Except as provided for in 20.1.2 of this regulation, every owner or operator of any large appliance coating unit shall comply with the provisions of 20.0 of this regulation on and after 04/11/2010.
- 20.1.2 Transition period for existing permitted sources. Every owner or operator of any large appliance coating unit that has a permit issued pursuant to 7 DE Admin. Code 1102 or 1130 containing all applicable conditions of 20.0 of this regulation, as that regulation existed on January 11, 1993, shall comply with those permit conditions until December 31, 2010. On and after January 1, 2011 every such owner or operator of any large appliance coating unit shall comply with the provisions of 20.0 of this regulation.
- 20.1.3 Except as provided for in 20.1.4 of this regulation, the provisions of 20.0 of this regulation do not apply to any large appliance coating unit within a facility whose actual emissions without control devices from all large appliance coating units within the facility, including related cleaning activities, are less than 6.8 kilograms (kg) (15 pounds [lb]) of volatile organic compounds (VOCs) per day.
- 20.1.4 An owner or operator of a facility whose emissions are below the applicability threshold in 20.1.3 of this regulation shall comply with the certification, recordkeeping, and reporting requirements of 20.7.1 of this regulation.
- 20.1.5 Any facility that becomes or is currently subject to the provisions of 20.0 of this regulation by exceeding the applicability threshold in 20.1.3 of this regulation shall remain subject to these provisions even if its emissions later fall below the applicability thresholds.
- 20.1.6 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.

- 20.2 Definitions. As used in 20.0 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.

“**Large appliance**” means any residential or commercial washer, dryer, range, oven, microwave oven, refrigerator, freezer, water heater, dishwasher, trash compactor, air conditioner, or other similar products under North American Industry Classification System code 33522.

“**Large appliance coating unit**” means a coating unit in which any protective, decorative, or functional coating is applied onto the surface of component metal parts (including, but not limited to, doors, cases, lids, panels, and interior parts) of large appliances.

20.3 Standards

- 20.3.1 Except as provided in 20.4.1 of this regulation, no owner or operator of a large appliance coating unit subject to 20.0 of this regulation shall cause or allow the application of any coating to large appliances unless:
- 20.3.1.1 The VOC content of the coating is less than or equal to the limits listed in Table 20-1 of this regulation, or

Table 20-1 Large Appliance Coating VOC Content Limits

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

Coating Category	Baked		Air Dried	
	kg VOC/l coating	lb VOC/gal coating	kg VOC/l coating	lb VOC/gal coating
General, one-component	0.275	2.3	0.275	2.3
General, multi-component	0.275	2.3	0.340	2.8
Extreme high-gloss	0.360	3.0	0.340	2.8
Extreme performance	0.360	3.0	0.420	3.5
Heat-resistant	0.360	3.0	0.420	3.5
Metallic	0.420	3.5	0.420	3.5
Pretreatment	0.420	3.5	0.420	3.5
Solar-absorbent	0.360	3.0	0.420	3.5

- 20.3.1.2 For a large appliance coating unit that applies multiple coatings, which are subject to the same numerical emission limitation in Table 20-1 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 20-1 of this regulation corresponding to the category of coating used, or
 - 20.3.1.3 Control equipment is installed and operated that achieves an emission reduction efficiency in accordance with 20.5 of this regulation. The requirements of 20.3.2 of this regulation shall not apply to any large appliance coating unit that achieves an emission reduction efficiency of 95% or greater.
- 20.3.2 Except as provided in 20.3.1.3 and 20.4 of this regulation, no owner or operator of a large appliance coating unit subject to 20.0 of this regulation shall apply a coating to large appliances unless the coating is applied with equipment properly operating and maintained according to the manufacturer's suggested guidelines and using one or more of the following coating application methods:
- 20.3.2.1 Electrostatic spray
 - 20.3.2.2 Flow coating
 - 20.3.2.3 Dip coating, including electrodeposition
 - 20.3.2.4 Roll coating
 - 20.3.2.5 High-volume, low-pressure (HVLP) spray
 - 20.3.2.6 Hand application
 - 20.3.2.7 An alternative method that is demonstrated to be capable of achieving a transfer efficiency equal to or better than HVLP spray and approved by the Department and by the EPA.
- 20.4 Specific Exemptions
- 20.4.1 The requirements of 20.3.1 and 20.3.2 of this regulation do not apply for the following types of coatings:
- 20.4.1.1 Stencil coatings
 - 20.4.1.2 Safety-indicating coatings
 - 20.4.1.3 Solid film lubricants
 - 20.4.1.4 Electric-insulating and thermal-conducting coatings
 - 20.4.1.5 Aerosol coating product
 - 20.4.1.6 Powder coatings
- 20.4.2 The requirements of 20.3.2 of this regulation do not apply to touch-up and repair coatings.
- 20.5 Control Devices
- 20.5.1 An owner or operator of a large appliance coating unit subject to 20.3.1.3 of this regulation shall determine the emission reduction efficiency needed to comply and demonstrate compliance as follows:
- 20.5.1.1 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%.
 - 20.5.1.2 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.
- 20.5.2 An owner or operator of a large appliance coating unit subject to 20.3.1.3 of this regulation shall ensure that:
- 20.5.2.1 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 20.0 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.
 - 20.5.2.2 The control device is equipped with the applicable monitoring equipment specified in 2.0 of **Appendix D** of this regulation, and the monitoring equipment is installed, calibrated, operated, and maintained according to the vendor's specifications at all times the control device is in use.
- 20.6 Test Methods. The test methods found in **Appendix A** through **Appendix D** of this regulation shall be used to determine compliance with 20.0 of this regulation.
- 20.6.1 The acid content of pretreatment coatings and etching fillers shall be determined by ASTM International Method D 1613 -06.
 - 20.6.2 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).

20.7 Compliance Certification, Recordkeeping and Reporting

- 20.7.1 An owner or operator of a large appliance coating unit exempt from the requirements of 20.3 of this regulation shall comply with the certification, recordkeeping, and reporting requirements in 4.2 of this regulation.
- 20.7.2 An owner or operator of a large appliance coating unit subject to 20.0 of this regulation and complying with 20.3.1.1 of this regulation by the use of compliance coatings shall comply with the certification, recordkeeping, and reporting requirements in 4.3 of this regulation.
- 20.7.3 An owner or operator of a large appliance coating unit subject to 20.0 of this regulation and complying with 20.3.1.2 of this regulation by daily-weighted averaging shall comply with the certification, recordkeeping, and reporting requirements in 4.4 of this regulation.
- 20.7.4 An owner or operator of a large appliance coating unit subject to 20.0 of this regulation and complying with 20.3.1.3 of this regulation by the use of control devices shall comply with the testing, reporting, and recordkeeping requirements in 4.5 of this regulation.
- 20.7.5 An owner or operator of a large appliance coating unit subject to 20.3.2 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.

13 DE Reg. 1344 (04/01/10)

(Break in Continuity of Sections)

22.0 Coating of Miscellaneous Metal Parts

04/11/2010 xx/xx/xxxx

22.1 Applicability

- 22.1.1 The provisions of 22.0 of this regulation apply to any miscellaneous metal parts and products coating unit. Except as provided in 22.1.2 of this regulation, every owner or operator of any miscellaneous metal parts and products coating unit shall comply with the provisions of 22.0 of this regulation on and after 04/11/2010.
 - 22.1.2 Transition period for existing permitted sources. Every owner or operator of any miscellaneous metal parts and products coating unit that has a permit issued pursuant to 7 DE Admin. Code 1102 or 1130 containing all applicable conditions of 22.0 of this regulation, as that regulation existed on January 11, 1993, shall comply with those permit conditions until December 31, 2010. On and after January 1, 2011, every such owner or operator of any miscellaneous metal parts and products coating unit shall comply with the provisions of 22.0 of this regulation.
 - 22.1.3 The provisions of 22.0 of this regulation do not apply to the following miscellaneous metal parts and products:
 - 22.1.3.1 Parts covered by other sections of this regulation.
 - 22.1.3.2 Exterior parts of completely assembled marine vessels.
 - 22.1.4 Except as provided in 22.1.5 of this regulation, the provisions of 22.0 of this regulation do not apply to metal parts and products coating facilities whose actual emissions, without control devices, from all miscellaneous metal part and 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.
 - 22.1.5 An owner or operator of a facility whose emissions are below the applicability threshold in 22.1.4 of this regulation shall comply with the certification, recordkeeping, and reporting requirements of 22.7.1 of this regulation.
 - 22.1.6 Any facility that becomes or is currently subject to the provisions of 22.0 of this regulation by exceeding the applicability threshold in 22.1.4 of this regulation shall remain subject to these provisions even if its emissions later fall below the applicability threshold.
 - 22.1.7 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 emissions later fall below the applicability threshold.
- 22.2 Definitions. As used in 22.0 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.

“Camouflage coating” means a coating used principally by the military to conceal equipment from detection.

“Drum” means any cylindrical metal shipping container of 13 to larger than 12 gallons capacity, but no larger than 110 gallon capacity.

“Electric-insulating varnish” means a non-convertible-type coating applied to electric motors, components of electric motors, or power transformers, to provide electrical, mechanical and environmental protection or resistance.

“Etching filler” means a coating that contains less than 23% solids by weight and at least 0.5 percent acid by weight and is used instead of applying a pretreatment coating followed by a primer.

“High-performance architectural coating” means a coating used to protect architectural subsections and which meets the requirements of the Architectural Aluminum Manufacturer Associations publication number AAMA 2604-05 (Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels) or 2605-05 (Voluntary Specification Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels).

“High-temperature coating” means a coating that is certified to withstand a temperature of 1000⁰ F for 24 hours.

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

“Miscellaneous metal parts and products coating unit” means a coating unit in which a coating is applied to any miscellaneous metal parts and products.

“Miscellaneous parts and products” means any metal part or metal product, even if attached to or combined with a nonmetal part or product. Miscellaneous metal parts and products include, but are not limited to:

1. Large farm machinery (harvesting, fertilizing and planting machines, tractors, combines, etc.).
2. Small farm machinery (lawn and garden tractors, lawn mowers, rototillers, etc.).
3. Small appliances (fans, mixers, blenders, crock pots, dehumidifiers, vacuum cleaners, etc.).
4. Commercial machinery (office equipment, computers and auxiliary equipment, typewriters, calculators, vending machines, etc.).
5. Industrial machinery (pumps, compressors, conveyor components, fans, blowers, transformers, etc.).
6. Fabricated metal products (metal covered doors, frames, etc.).
7. Any other metal part or product that is within one of the following Standard Industrial Classification Codes: Major Group 33 (primary metal industries), Major Group 34 (fabricated metal products), Major Group 35 (nonelectric machinery), Major Group 36 (electrical machinery), Major Group 37 (transportation equipment), Major Group 38. (miscellaneous instruments), and Major Group 39 (miscellaneous manufacturing industries).

“Pail” means any cylindrical metal shipping container of 1- to 12-gallon capacity and constructed of 29-gauge and heavier material.

“Pan-backing coating” means a coating applied to the surface of pots, pans, or other cooking implements that are exposed directly to a flame or other heating elements.

“Prefabricated architectural component coating” means a coating applied to metal parts and products which is to be used as an architectural structure.

“Silicone-release coating” means a coating which contains silicone resin and is intended to prevent food from sticking to metal surfaces such as baking pans.

22.3 Standards

22.3.1 Except as provided for in ~~22.3.3~~ 22.4, no owner or operator of a miscellaneous metal parts and products coating unit subject to 22.0 of this regulation shall cause or allow the application of any coating to miscellaneous metal parts and products unless:

22.3.1.1 The VOC content of the coating is less than or equal to the limits listed in Table 22-1 of this regulation, or

22.3.1.2 For a miscellaneous metal parts and products coating unit that applies multiple coatings, which are subject to the same numerical emission limitation in Table 22-1 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 22-1 of this regulation corresponding to the category of coating used, or

22.3.1.3 Control equipment is installed and operated that achieves an emission reduction efficiency in accordance with 22.5 of this regulation. The requirements of 22.3.2 shall not apply to any metal parts and products coating unit that achieves an emission reduction efficiency of 95% or greater.

22.3.2 Except as provided in 22.3.1.3 and 22.4, no owner or operator of a miscellaneous metal parts and products coating unit subject to 22.0 of this regulation shall apply a coating to miscellaneous metal parts and 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:

- 22.3.2.1 Electrostatic spray
- 22.3.2.2 Flow coating
- 22.3.2.3 Dip coating, including electrodeposition
- 22.3.2.4 Roll coating
- 22.3.2.5 High-volume, low-pressure (HVLP) spray
- 22.3.2.6 Hand application
- 22.3.2.7 An alternative method that is demonstrated to be capable of achieving a transfer efficiency equal to or better than HVLP spray and approved by the Department and by the EPA.

Table 22 – 1 Metal Parts and Products Coating VOC Content Limits
 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	Air Dried		Baked	
	kg VOC/l	lb VOC/gal	kg VOC/l	lb VOC/gal
	coating	coating	coating	coating
General One Component	0.34	2.8	0.28	2.3
General Multi Component	0.34	2.8	0.28	2.3
Camouflage	0.42	3.5	0.36	3.0
Electric Insulating Varnish	0.42	3.5	0.36	3.0
Electric Insulating and Thermal Conducting Coatings	0.42	3.5	0.36	3.0
Etching Filler	0.42	3.5	0.36	3.0
Extreme High Gloss	0.42	3.5	0.36	3.0
Extreme Performance	0.42	3.5	0.36	3.0
Heat Resistant	0.42	3.5	0.36	3.0
High Performance Architectural	0.42	3.5	0.36	3.0
High Temperature	0.42	3.5	0.36	3.0
Magnetic Data Storage Disc Coatings	0.42	3.5	0.36	3.0
Metallic	0.42	3.5	0.36	3.0
Military Specification	0.34	2.8	0.28	2.3
Mold Seal	0.42	3.5	0.36	3.0
Pan Backing	0.42	3.5	0.36	3.0
Prefabricated Architectural Multi Component	0.42	3.5	0.28	2.3
Prefabricated Architectural One Component	0.42	3.5	0.28	2.3
Pretreatment Coatings	0.42	3.5	0.36	3.0
Repair and Touch Up	0.42	3.5	0.36	3.0
Safety Indicating Coatings	0.42	3.5	0.36	3.0

Silicone Release	0.42	3.5	0.42	3.5
Solar Absorbent	0.42	3.5	0.36	3.0
Solid-Film Lubricant	0.42	3.5	0.36	3.0
Stencil Coatings	0.42	3.5	0.36	3.0
Vacuum Metalizing	0.42	3.5	0.42	3.5
Drum Coating, New, Exterior	0.34	2.8	0.34	2.8
Drum Coating, New, Interior	0.42	3.5	0.42	3.5
Drum Coating, Reconditioned, Exterior	0.42	3.5	0.36	3.0
Drum Coating, Reconditioned, Interior	0.50	4.2	0.50	4.2

22.4 Specific Exemptions

22.4.1 The requirements of 22.3.1 and 22.3.2 of this regulation shall not apply to the following coatings and coating operations:

- 22.4.1.1 Plastic extruded onto metal parts to form a coating,
- 22.4.1.2 Aerosol coating product, and
- 22.4.1.3 Powder coatings.

22.4.2 The requirements of 22.3.2 of this regulation shall not apply to the following coatings and coating operations:

- 22.4.2.1 Texture coatings, and
- 22.4.2.2 Repair and Touch up coatings.

22.5 Control Devices

22.5.1 An owner or operator of a miscellaneous metal parts and products coating unit subject to 22.3.1.3 of this regulation shall determine the emission efficiency needed to comply and demonstrate compliance as follows:

- 22.5.1.1 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%.
- 22.5.1.2 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.

22.5.2 An owner or operator of a miscellaneous metal parts and products coating unit subject to 22.3.1.3 of this regulation shall ensure that:

- 22.5.2.1 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 22.0 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.
- 22.5.2.2 The control device is equipped with the applicable monitoring equipment specified in 2.0 of **Appendix D** of this regulation, and the monitoring equipment is installed, calibrated, operated, and maintained according to the vendor's specifications at all times the control device is in use.

22.6 Test methods. The test methods found in **Appendix A** through **Appendix D** of this regulation shall be used to determine compliance with 22.0 of this regulation.

22.6.1 The acid content of pretreatment coatings and etching fillers shall be determined by the ASTM International Method D-1613 -06.

22.6.2 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).

22.7 Compliance Certification, Recordkeeping and Reporting Requirements.

- 22.7.1 An owner or operator of a miscellaneous metal parts and products coating unit exempt from the emission requirements in 22.3 of this regulation shall comply with the certification, recordkeeping, and reporting requirements in 4.2 of this regulation.
- 22.7.2 An owner or operator of a miscellaneous metal parts and products coating unit subject to 22.0 of this regulation and complying with 22.3.1.1 of this regulation by the use of compliant coatings shall comply with the certification, recordkeeping, and reporting requirements in 4.3 of this regulation.
- 22.7.3 An owner or operator of a miscellaneous metal parts and products coating unit subject to 22.0 of this regulation and complying with 22.3.1.2 of this regulation through the use of daily-weighted averaging shall comply with the certification, recordkeeping, and reporting requirements in 4.4 of this regulation.
- 22.7.4 An owner or operator of a miscellaneous metal parts and products coating unit subject to 22.0 of this regulation and complying with 22.3.1.3 of this regulation by the use of control devices shall comply with the testing, certification, reporting, and recordkeeping requirements in 4.5 of this regulation.
- 22.7.5 An owner or operator of a metal parts coating unit subject to 22.3.2 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.

13 DE Reg. 1344 (04/01/10)

14 DE Reg. 1206 (05/01/11)