

ALL NEW TEXT

§ 2105.83 CONTROL OF VOC EMISSIONS FROM MISCELLANEOUS METAL AND/OR PLASTIC PARTS SURFACE COATING PROCESSES

a. **Applicability.** Beginning January 1, 2014, this section applies to the owner or operator of a miscellaneous metal parts and/or plastic parts surface coating processes, where the total actual VOC emissions from all miscellaneous metal parts and/or plastic parts surface coating processes, including related cleaning activities, at that facility are equal to or greater than 15 pounds (6.8 kilograms) per day or 2.7 tons (2,455 kilograms) per twelve month rolling period, before controls.

The provisions of this rule shall not apply to the following source categories listed for regulation under Section 183(e) of the Clean Air Act:

1. Shipbuilding and repair coatings;
2. Aerospace coatings;
3. Wood furniture coatings;
4. Metal furniture coatings;
5. Large appliance coatings;
6. Auto and light-duty truck assembly coatings;
7. Flat wood paneling coatings;
8. Miscellaneous industrial adhesives;
9. Fiberglass boat manufacturing materials;
10. Paper, film, and foil coatings; or

Can coatings, coil coatings or magnet wire coatings which are not listed under Section 183(e) of the Act, but were addressed by regulation § 2105.10.

b. **Limitations.** A person may not cause or permit the emission into the outdoor atmosphere of VOCs from a miscellaneous metal parts and/or plastic parts surface coating processes, unless one of the following limitations is met:

1. The VOC content of each applied coating is equal to or less than the standard specified in Table 2105.83.1.

A. The VOC content, minus exempt compounds, of the applied coating, expressed in units of weight of VOC per volume of total nonexempt material, shall be calculated as follows:

$$\text{VOC} = \frac{W_s - W_w - W_{ex}}{V_m - V_w - V_{ex}}$$

Where:

VOC = VOC content, minus exempt compounds, in lb (g) VOC / gal (l) of materials, minus exempt compounds

Ws = Weight of all volatile material in pounds (g), including VOC, water, non-precursor organic compounds and dissolved vapors

Ww = Weight of water in pounds (g)

Wex = Weight of exempt solvent(s) in pounds (g)

Vm = Volume of total material, as applied in gallons (l)

Vw = Volume of water in gallons (l)

Vex = Volume of exempt solvent(s) in gallons (l)

B. The VOC content limits of subparagraph A may be met by averaging the VOC content of materials used on a single application unit for each day (i.e., daily within-application unit averaging).

C. Sampling and testing shall be done in accordance with the procedures and test methods specified in Part G (Methods).

2. The VOC content limitations based on low-VOC coatings as specified in Table 2105.83.2 of this rule, the use of add-on pollution control equipment to meet the VOC content limitations, and the use of an application method specified in

Subsection e of this rule.

A. The VOC content, minus exempt compounds, of the applied coating, expressed in units of weight of VOC per volume of total material, shall be calculated as follows:

$$\text{VOC} = \frac{\text{Ws} - \text{Ww} - \text{Wex}}{\text{Vm}}$$

Where:

VOC = VOC content, minus exempt compounds, in lb (g) VOC / gal (l) of materials

Ws = Weight of all volatile material in pounds (g), including VOC, water, non-precursor organic compounds and dissolved vapors

Ww = Weight of water in pounds (g)

Wex = Weight of exempt solvent(s) in pounds (g)

Vm = Volume of total material, as applied in gallons (l)

B. The VOC content limits of subparagraph A may be met by averaging the VOC content of materials used on a single application unit for each day (i.e., daily within-application unit averaging).

C. Sampling and testing shall be done in accordance with the procedures and test methods specified in Part G (Methods).

3. The overall weight of VOC emitted to the atmosphere is reduced through the use of an oxidizer, adsorber, absorber, concentrator, or another add-on control which is acceptable under § 2105.01 (Equivalent Compliance Techniques). The overall control system, as determined by the test methods and procedures specified in Part G, shall be no less than 90%.

c. **Records.** A facility, regardless of the facility's annual emission rate, which contains miscellaneous metal parts and/or plastic parts surface coating processes, shall maintain records sufficient to demonstrate compliance with this section. At a minimum, a facility shall maintain daily records of:

1. The following parameters for each coating and other component as supplied:

- A. The coating, thinner or component name and identification number;
- B. The volume used;
- C. The mix ratio;
- D. The density or specific gravity;
- E. The weight percent of total volatiles, water, and exempt solvents;
- F. The volume percent of total materials, water, and exempt solvents for either Table 2105.83.1 or Table 2105.83.2 for miscellaneous metal parts and/or plastic parts surface coating processes.

The records shall be maintained for 2 years and shall be submitted to the Department on a schedule reasonably prescribed by the Department.

d. **Exempt Solvents.** The solvents methyl chloroform (1,1,1-trichloroethane) and methylene chloride are exempt from control under this Section. No miscellaneous metal parts and/or plastic parts surface coating processes which seeks to comply with this Section through the use of an exempt solvent may be included in any alternative standard approved pursuant to this Article.

e. **Application Techniques.** A person may not cause or permit the emission into the outdoor atmosphere of VOCs from the application of miscellaneous metal parts and/or plastic parts surface coatings unless the coatings are applied using one or more of the following application methods:

- 1. Airless spraying;
- 2. Air-assisted airless spraying;
- 3. Electrostatic spraying;
- 4. High volume-low pressure (HVLP) spraying;
- 5. Dip coating, including electrodeposition;
- 6. Flow coating;
- 7. Roll coating;

8. Autophoretic coating;
9. Zinc-arc spraying;
10. Other coating application method that the person demonstrates and the Department determines achieves emission reductions equivalent to HVLP spraying.

f. Exempt Other.

1. The following shall be exempt from this regulation:

- A. Aerosol coatings;
- B. Architectural coatings;
- C. Automobile refinish coatings;
- D. The coating of bodies and/or body parts for new heavier vehicles where the owner or operator elects to comply with the requirements of regulation § 2105.84 CONTROL OF VOC EMISSIONS FROM AUTOMOBILE AND LIGHT-DUTY TRUCK ASSEMBLY COATINGS.

2. The following metal parts coatings and coating operations shall be exempt from the limitations set by Subsection b, and Subsection e, Application Techniques but shall still comply with Subsection h, Housekeeping:

- A. Stencil coatings;
- B. Safety-indicating coatings;
- C. Solid-film lubricants;
- D. Electric-insulating and thermal-conducting coatings;
- E. Magnetic data storage disk coatings;
- F. Plastic extruded onto metal parts to form a coating.

3. The following plastic parts coatings and coating operations shall be exempt from the limitations set by Subsection b, but shall still comply with Subsection e, Application Techniques and Subsection h, Housekeeping:

- A. Touch-up and repair coatings;
- B. Stencil coatings applied on clear or transparent substrates;
- C. Clear or translucent coatings;
- D. Coatings applied at a paint manufacturing facility while conducting performance tests on the coating;
- E. 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;

F. Reflective coating applied to highway cones;

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

H. Electromagnetic interference/radio frequency interference (EMI/RFI) shielding coatings;

I. 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.

4. The following automotive/transportation and business machine plastic part coatings and coating operations shall be exempt from the limitations set by Subsection b, but shall still comply with Subsection e, Application Techniques and Subsection h, Housekeeping:

A. Texture coatings;

B. Vacuum metalizing coatings;

C. Gloss reducers;

D. Texture topcoats;

E. Adhesive primers;

F. Electrostatic preparation coatings;

G. Resist coatings;

H. Stencil coatings.

5. The application techniques in Subsection e of this rule do not apply to the following:

A. For metal parts coatings; touch-up coatings, repair coatings, and textured finishes.

B. For plastic parts coatings; airbrush operations using five gallons or less of coating per year.

C. For pleasure craft surface coating operations; extreme high gloss coatings.

g. **Emission Limitations.** For those who elect to adopt the limitation from Subparagraph b.1, if more than one emission limitation in Table 2105.83.1 for miscellaneous metal parts and/or plastic parts applies to a specific coating, the least stringent emission limitation applies. For those who elect to adopt the limitation from Subparagraph b.2, if more than one emission limitation in Table 2105.83.2 for miscellaneous metal parts and/or plastic parts applies to a specific coating, the least stringent emission limitation applies.

h. **Housekeeping.** The following work practices for cleaning materials apply to the owner or operator of a miscellaneous metal parts and/or plastic parts surface coating processes:

1. Store all VOC-containing coatings, thinners, coating-related waste materials, cleaning materials and used shop towels in closed containers.
 2. Ensure that mixing and storage containers used for VOC-containing coatings, thinners, coating-related waste materials and cleaning materials are kept closed at all times except when depositing or removing these materials.
 3. Minimize spills of VOC-containing coatings, thinners, coating-related waste materials and cleaning materials, cleaning up spills immediately.
 4. Convey VOC-containing coatings, thinners, coating-related waste materials and cleaning materials from one location to another in closed containers or pipes.
- i. **Measurements.** Measurements of the volatile fraction of coatings, other than reactive coatings, used at facilities operating miscellaneous metal parts and/or plastic parts surface coating processes shall be performed according to the applicable procedures established in § 2107.04 of this Article.

Table 2105.83.1

Emission Limits of VOCs for Miscellaneous Metal and/or Plastic Surface Coatings

Limits as Applied Mass of VOC per volume of coating (minus exempt compounds)

Metal Parts and Products VOC Content Limits

Air Dried Baked

Coating Category kg/l lb/gal kg/l lb/gal

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 0.42 3.5

Electric-Insulating Varnish 0.42 3.5 0.42 3.5

Etching Filler 0.42 3.5 0.42 3.5

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 0.74 6.2 0.74 6.2

High Temperature 0.42 3.5 0.42 3.5

Metallic 0.42 3.5 0.42 3.5

Military Specification 0.34 2.8 0.28 2.3

Mold-Seal 0.42 3.5 0.42 3.5

Pan Backing 0.42 3.5 0.42 3.5

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 0.42 3.5 0.42 3.5

Repair and Touch-Up 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

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 0.42 3.5

Drum Coating, Reconditioned, Interior 0.50 4.2 0.50 4.2

Plastic Parts and Products VOC Content Limits

Coating Category kg/l lb/gal

General One Component 0.28 2.3

General Multi-Component 0.42 3.5

Electric Dissipating and Shock-Free 0.80 6.7

Extreme Performance (2-pack coatings) 0.42 3.5

Metallic 0.42 3.5

Military Specification (1-pack coatings) 0.34 2.8

Military Specification (2-pack coatings) 0.42 3.5

Mold-Seal 0.76 6.3

Multi-colored Coatings 0.68 5.7

Optical Coatings 0.80 6.7

Vacuum-Metalizing 0.80 6.712

Automotive Transportation and Business Machine Plastic Parts VOC Content Limits

Coating Category kg/l lb/gal

--Automotive Transportation Coatings*--

High Bake – Interior and Exterior Parts

Flexible Primer	0.54	4.5
Non-Flexible Primer	0.42	3.5
Basecoat	0.52	4.3
Clearcoat	0.48	4.0
Non-Basecoat/Clearcoat	0.52	4.3
Low Bake/Air Dried – Exterior Parts		
Primer	0.58	4.8
Basecoat	0.60	5.0
Clearcoat	0.54	4.5
Non-Basecoat/Clearcoat	0.60	5.0
Low Bake/Air Dried – Interior Parts		
Touch-Up and Repair	0.62	5.2
--Business Machine Coatings--		
Primers	0.35	2.9
Topcoat	0.35	2.9
Texture Coat	0.35	2.9
Fog Coat	0.26	2.2
Touch-Up and Repair	0.35	2.9

* For red, yellow, and black automotive coatings, except touch-up and repair coatings, the limit is determined by multiplying the appropriate limit in this section of the table by 1.15

Pleasure Craft Surface Coating VOC Content Limits

Coating Category	kg/l	lb/gal
Extreme High-Gloss Topcoat	0.49	4.1
High-Gloss Topcoat	0.42	3.5
Pretreatment Wash Primers	0.78	6.5
Finish Primer/Surfacer	0.42	3.5
High-Build Primer Surfacer	0.34	2.8
Aluminum Substrate Antifoulant	0.56	4.7
Other Substrate Antifoulant	0.33	2.8

All Other Pleasure Craft Surface Coatings 0.42 3.5
for Metal or Plastic

Motor Vehicle Materials VOC Content Limits

Coating Category kg/l lb/gal
Motor Vehicle Cavity Wax 0.65 5.4
Motor Vehicle Sealer 0.65 5.4
Motor Vehicle Deadener 0.65 5.4
Motor Vehicle Gasket/Gasket Sealing Material 0.20 1.7
Motor Vehicle Underbody 0.65 5.4
Motor Vehicle Truck Interior 0.65 5.4
Motor Vehicle Bedliner 0.20 1.7
Motor Vehicle Lubricating Wax/Compound 0.70 5.813

Table 2105.83.2

**Emission Limits of VOCs for Miscellaneous Metal and/or Plastic Surface Coatings
with Applicable Add-on Controls**

Limits as Applied Mass of VOC per volume solids

Metal Parts and Products VOC Content Limits Air Dried Baked

Coating Category kg/l lb/gal kg/l lb/gal
General One Component 0.54 4.52 0.40 3.35
General Multi-Component 0.54 4.52 0.40 3.35
Camouflage 0.80 6.67 0.80 6.67
Electric-Insulating Varnish 0.80 6.67 0.80 6.67
Etching Filler 0.80 6.67 0.80 6.67
Extreme High-Gloss 0.80 6.67 0.61 5.06
Extreme Performance 0.80 6.67 0.61 5.06
Heat-Resistant 0.80 6.67 0.61 5.06
High Performance Architectural 4.56 38.0 4.56 38.0
High Temperature 0.80 6.67 0.80 6.67

Metallic 0.80 6.67 0.80 6.67
 Military Specification 0.54 4.52 0.40 3.35
 Mold-Seal 0.80 6.67 0.80 6.67
 Pan Backing 0.80 6.67 0.80 6.67
 Prefabricated Architectural Multi-Component 0.80 6.67 0.40 3.35
 Prefabricated Architectural One Component 0.80 6.67 0.40 3.35
 Pretreatment 0.80 6.67 0.80 6.67
 Silicone Release 0.80 6.67 0.80 6.67
 Solar-Absorbent 0.80 6.67 0.61 5.06
 Vacuum-Metalizing 0.80 6.67 0.80 6.67
 Drum Coating, New, Exterior 0.54 4.52 0.54 4.52
 Drum Coating, New, Interior 0.80 6.67 0.80 6.67
 Drum Coating, Reconditioned, Exterior 0.80 6.67 0.80 6.67
 Drum Coating, Reconditioned, Interior 1.17 9.78 1.17 9.78

Plastic Parts and Products VOC Content Limits

Coating Category kg/l lb/gal
 General One Component 0.40 3.35
 General Multi-Component 0.80 6.67
 Electric Dissipating and Shock-Free 8.96 74.7
 Extreme Performance (2-pack coatings) 0.80 6.67
 Metallic 0.80 6.67
 Military Specification (1-pack coatings) 0.54 4.52
 Military Specification (2-pack coatings) 0.80 6.67
 Mold-Seal 5.24 43.7
 Multi-colored Coatings 3.04 25.3
 Optical Coatings 8.96 74.7
 Vacuum-Metalizing 8.96 74.714

Automotive Transportation and Business Machine Plastic Parts VOC Content Limits

Coating Category kg/l lb/gal

--Automotive Transportation Coatings*--

High Bake – Interior and Exterior Parts

Flexible Primer 1.39 11.58

Non-Flexible Primer 0.80 6.67

Basecoat 1.24 10.34

Clearcoat 1.05 8.76

Non-Basecoat/Clearcoat 1.24 10.34

Low Bake/Air Dried – Exterior Parts

Primer 1.66 13.80

Basecoat 1.87 15.59

Clearcoat 1.39 11.58

Non-Basecoat/Clearcoat 1.87 15.59

Low Bake/Air Dried – Interior Parts 1.87 15.59

Touch-Up and Repair 2.13 17.72

--Business Machine Coatings--

Primers 0.57 4.80

Topcoat 0.57 4.80

Texture Coat 0.57 4.80

Fog Coat 0.38 3.14

Touch-Up and Repair 0.57 4.80

* For red, yellow, and black automotive coatings, except touch-up and repair coatings, the limit is determined by multiplying the appropriate limit in this section of the table by 1.15

Pleasure Craft Surface Coating VOC Content Limits

Coating Category kg/l lb/gal

Extreme High-Gloss Topcoat 1.10 9.2

High-Gloss Topcoat 0.80 6.7

Pretreatment Wash Primers 6.67 55.6

Finish Primer/Surfacer 0.80 6.7

High-Build Primer Surfacer 0.55 4.6

Aluminum Substrate Antifoulant 1.53 12.8

Other Substrate Antifoulant 0.53 4.4

All Other Pleasure Craft Surface Coatings 0.80 6.7
for Metal or Plastic