

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE B: AIR POLLUTION
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER c: EMISSIONS STANDARDS AND
LIMITATIONS FOR STATIONARY SOURCES

PART 218
ORGANIC MATERIAL EMISSION STANDARDS AND
LIMITATIONS FOR THE CHICAGO AREA

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STATE OF ILLINOIS
Pollution Control Board

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AUTHORITY: Implementing Section 10 and authorized by Sections 27, 28, 28.5 of the Environmental Protection Act [415 ILCS 5/10 and 28.5].

SOURCE: Adopted at R91-7 at 15 Ill. Reg. 12231, effective August 16, 1991; amended in R91-24 at 16 Ill. Reg. 13564, effective August 24, 1992; amended in R91-28 and R91-30 at 16 Ill. Reg. 13864, effective August 24, 1992; amended in R93-9 at 17 Ill. Reg. 16636, effective September 27, 1993; amended in R93-14 at 18 Ill. Reg. at 1945, effective January 24, 1994; amended in R94-12 at 18 Ill. Reg. 14973, effective September 21, 1994; amended in R94-15 at 18 Ill. Reg. 16392, effective October 25, 1994; amended in R94-16 at 18 Ill. Reg. 16950, effective November 15, 1994; amended in R94-21, R94-31 and R94-32 at 19 Ill. Reg. 6848, effective May 9, 1995; amended in R94-33 at 19 Ill. Reg. 7359, effective May 22, 1995; amended in R96-13 at 20 Ill. Reg. 14428, effective October 17, 1996; amended in R97-24 at 21 Ill. Reg. 7708, effective June 9, 1997; amended in R97-31 at 22 Ill. Reg. 3556, effective February 2, 1998; amended in R98-16 at 22 Ill. Reg. 14282, effective July 16, 1998; amended in R02-20 at 27 Ill. Reg 7283, effective April 8, 2003; amended in R04-12/20 at 30 Ill. Reg. 9684, effective May 15, 2006; amended in R06-21 at 31 Ill. Reg. 7086, effective April 30,

2007.

SUBPART A: GENERAL PROVISIONS

Section 218.106 Compliance Dates

- a) Except as otherwise provided in this Section or as otherwise provided in a specific Subpart of this Part, compliance with the requirements of all rules is required by July 1, 1991, or September 1, 1991, for all sources located in Cook, DuPage, Kane, Lake, McHenry, or Will Counties, consistent with the appropriate provisions of Section 218.103 of this Subpart.
- b) Except as otherwise provided in this Section or as otherwise provided in a specific Subpart of this Part, compliance with the requirements of this Part is required by November 15, 1993, for all sources located in Aux Sable Township or Goose Lake Township in Grundy County, or in Oswego Township in Kendall County.
- c) All emission units which meet the applicability requirements of Sections 218.402(a)(2), 218.611(b), 218.620(b), 218.660(a), 218.680(a), 218.920(b), 218.940(b), 218.960(b) or 218.980(b) of this Part, including emission units at sources which are excluded from the applicability criteria of Sections 218.402(a)(1), 218.611(a), 218.620(a), 218.920(a), 218.940(a), 218.960(a), or 218.980(a) of this Part by virtue of permit conditions or other enforceable means, must comply with the requirements of Subparts H, Z, AA, CC, DD, PP, QQ, RR or TT of this Part, respectively, by March 15, 1995. Any owner or operator of an emission unit which has already met the applicability requirements of Sections 218.402(a)(1), 218.611(a), 218.620(a), 218.920(a), 218.940(a), 218.960(a) 218.980(a) of this Part on or by the effective date of this subsection is required to comply with all compliance dates or schedules found in Sections 218.106(a) or 218.106(b), as applicable.
- d) Any owner or operator of a source with an emission unit subject to the requirements of Section 218.204(m)(2) or (m)(3) of this Part shall comply with those requirements by March 25, 1995.
- e) Any owner or operator of a source subject to the requirements of Section 218.204(c)(2), 218.204(g)(2), or 218.204(h)(2) of this Part shall comply with the applicable requirements in such Section(s), as well as all applicable requirements in Sections 218.205 through 218.214 and 218.218, by May 1, 2011.

(Source: Amended at __ Ill. Reg. _____, effective _____)

SUBPART F: COATING OPERATIONS

Section 218.204 Emission Limitations

Except as provided in Sections 218.205, 218.207, 218.208, 218.212, 218.215 and 218.216 of this Subpart, no owner or operator of a coating line shall apply at any time any coating in which the VOM content exceeds the following emission limitations for the specified coating. Except as otherwise provided in Sections 218.204(c), 218.204(g), 218.204(h), and 218.204(l), compliance with the emission limitations marked with an asterisk in this Section is required on and after March 15, 1996, and compliance with emission limitations not marked with an asterisk is required until March 15, 1996. The following emission limitations are expressed in units of VOM per volume of coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied at each coating applicator, except where noted. Compounds which are specifically exempted from the definition of VOM should be treated as water for the purpose of calculating the "less water" part of the coating composition. Compliance with this Subpart must be demonstrated through the applicable coating analysis test methods and procedures specified in Section 218.105(a) of this Part and the recordkeeping and reporting requirements specified in Section 218.211(c) of this Subpart except where noted. (Note: The equation presented in Section 218.206 of this Part shall be used to calculate emission limitations for determining compliance by add-on controls, credits for transfer efficiency, emissions trades and cross-line averaging.) The emission limitations are as follows:

a)	Automobile or Light-Duty Truck Coating	kg/l	lb/gal
1)	Prime coat	0.14	(1.2)
		0.14*	(1.2)*
2)	Primer surface coat	1.81	(15.1)
		1.81*	(15.1)*

(Note: The primer surface coat limitation is in units of kg (lbs) of VOM per l (gal) of coating solids deposited. Compliance with the limitation shall be based on the daily-weighted average from an entire primer surfacer operation. Compliance shall be demonstrated in accordance with the topcoat protocol referenced in Section 218.105(b) and the recordkeeping and reporting requirements specified in Section 218.211(f). Testing to demonstrate compliance shall be performed in accordance with the topcoat protocol and a detailed testing proposal approved by the Agency and USEPA specifying the method of demonstrating compliance with the protocol. Section 218.205 does not apply to the primer surfacer limitation.)

		kg/l	lb/gal
3)	Topcoat	1.81	(15.1)
		1.81*	(15.1)*

(Note: The topcoat limitation is in units of kg (lbs) of VOM per l (gal) of coating solids deposited. Compliance with the limitation shall be based on the daily-weighted average from an entire topcoat operation. Compliance shall be demonstrated in accordance with the topcoat protocol referenced in Section 218.105(b) of this Part and the recordkeeping and reporting requirements specified in Section 218.211(f). Testing to demonstrate compliance shall be performed in accordance with the topcoat protocol and a detailed testing proposal approved by the Agency and USEPA specifying the method of demonstrating compliance with the protocol. Section 218.205 of this Part does not apply to the topcoat limitation.)

		kg/l	lb/gal
4)	Final repair coat	0.58	(4.8)
		0.58*	(4.8)*

b)	Can Coating	kg/l	lb/gal
1)	Sheet basecoat and overvarnish		
	A) Sheet basecoat	0.34	(2.8)
		0.26*	(2.2)*
	B) Overvarnish	0.34	(2.8)
		0.34	(2.8)*
2)	Exterior basecoat and overvarnish	0.34	(2.8)
		0.25*	(2.1)*
3)	Interior body spray coat		
	A) Two piece	0.51	(4.2)
		0.44*	(3.7)*
	B) Three piece	0.51	(4.2)
		0.51*	(4.2)*
4)	Exterior end coat	0.51	(4.2)
		0.51*	(4.2)*
5)	Side seam spray coat	0.66	(5.5)
		0.66*	(5.5)*

6)	End sealing compound coat	0.44 0.44*	(3.7) (3.7)*
		kg/l	lb/gal
c)	Paper Coating	0.35 0.28*	(2.9) (2.3)*
	1) <u>Prior to May 1, 2011:</u>	kg/l	lb/gal
		<u>0.28</u>	<u>(2.3)</u>
	2) <u>On and after May 1, 2011:</u>	kg VOM/kg (lb VOM/lb) solids applied	kg VOM/kg (lb VOM/lb) coatings applied
	A) <u>Pressure sensitive tape and label surface coatings</u>	<u>0.20</u>	<u>(0.067)</u>
	B) <u>All other paper coatings</u>	<u>0.40</u>	<u>(0.08)</u>
<p>(Note: The paper coating limitation shall not apply to any owner or operator of any paper coating line on which flexographic or rotogravure printing is performed if the paper coating line complies with the emissions limitations in Section 218.401 of this Part. In addition, screen printing on paper is not regulated as paper coating, but is regulated under Subpart TT of this Part. <u>On and after May 1, 2011, the paper coating limitation shall also not apply to coating performed on or in-line with any digital printing press, or to size presses and on-machine coaters on papermaking machines applying sizing or water-based clays.</u>)</p>			
		kg/l	lb/gal
d)	Coil Coating	0.31 0.20*	(2.6) (1.7)*
e)	Fabric Coating	0.35 0.28*	(2.9) (2.3)*
f)	Vinyl Coating	0.45 0.28*	(3.8) (2.3)*
g)	Metal Furniture Coating		

1) <u>Prior to May 1, 2011:</u>		
	<u>kg/l</u>	<u>lb/gal</u>
A) <u>Air dried</u>	<u>0.34</u>	<u>(2.8)</u>
B) <u>Baked</u>	<u>0.28</u>	<u>(2.3)</u>
2) <u>On and after May 1, 2011:</u>		
	<u>kg/l</u>	<u>kg/l (lb/gal)</u>
	<u>(lb/gal)</u>	<u>solids applied</u>
A) <u>General, One Component</u>	<u>0.275</u>	<u>0.40</u>
	<u>(2.3)</u>	<u>(3.3)</u>
B) <u>General, Multi-Component</u>		
i) <u>Air Dried</u>	<u>0.340</u>	<u>0.55</u>
	<u>(2.8)</u>	<u>(4.5)</u>
ii) <u>Baked</u>	<u>0.275</u>	<u>0.40</u>
	<u>(2.3)</u>	<u>(3.3)</u>
C) <u>Extreme High Gloss</u>		
i) <u>Air Dried</u>	<u>0.340</u>	<u>0.55</u>
	<u>(2.8)</u>	<u>(4.5)</u>
ii) <u>Baked</u>	<u>0.360</u>	<u>0.61</u>
	<u>(3.0)</u>	<u>(5.1)</u>
D) <u>Extreme Performance</u>		
i) <u>Air Dried</u>	<u>0.420</u>	<u>0.80</u>
	<u>(3.5)</u>	<u>(6.7)</u>
ii) <u>Baked</u>	<u>0.360</u>	<u>0.61</u>
	<u>(3.0)</u>	<u>(5.1)</u>
E) <u>Heat Resistant</u>		
i) <u>Air Dried</u>	<u>0.420</u>	<u>0.80</u>
	<u>(3.5)</u>	<u>(6.7)</u>
ii) <u>Baked</u>	<u>0.360</u>	<u>0.61</u>
	<u>(3.0)</u>	<u>(5.1)</u>
F) <u>Metallic</u>	<u>0.420</u>	<u>0.80</u>

		<u>(3.5)</u>	<u>(6.7)</u>
G)	<u>Pretreatment Coatings</u>	<u>0.420</u>	<u>0.80</u>
		<u>(3.5)</u>	<u>(6.7)</u>
H)	<u>Solar Absorbent</u>		
	i) <u>Air Dried</u>	<u>0.420</u>	<u>0.80</u>
		<u>(3.5)</u>	<u>(6.7)</u>
	ii) <u>Baked</u>	<u>0.360</u>	<u>0.61</u>
		<u>(3.0)</u>	<u>(5.1)</u>
1)	<u>Air dried</u>	<u>0.36</u>	<u>(3.0)</u>
		<u>0.34*</u>	<u>(2.8)*</u>
2)	<u>Baked</u>	<u>0.36</u>	<u>(3.0)</u>
		<u>0.28*</u>	<u>(2.3)*</u>

(Note: On and after May 1, 2011, these limitations shall not apply to stencil coatings, safety-indicating coatings, solid-film lubricants, electric-insulating and thermal-conducting coatings, touch-up and repair coatings, or coating applications utilizing hand-held aerosol cans.)

3) On and after May 1, 2011, an owner or operator of a coating line subject to the limitations in subsection (g) of this Section shall apply all coatings using one or more of the following application methods:

A) Electrostatic spray;

B) High volume low pressure (HVLP) spray;

C) Flow coating. For the purposes of this subsection (g), flow coating means a non-atomized technique of applying coating to a substrate with a fluid nozzle with no air supplied to the nozzle;

D) Roll coating;

E) Dip coating, including electrodeposition. For purposes of this subsection (g), electrodeposition means a water-borne dip coating process in which opposite electrical charges are applied to the substrate and the coating. The coating is attracted to the substrate due to the electrochemical

potential difference that is created; or

F) Another coating application method capable of achieving a transfer efficiency equal to or better than that achieved by HVLP spraying, if such method is approved in writing by the Agency.

h) Large Appliance Coating

1) Prior to May 1, 2011:

	<u>kg/l</u>	<u>lb/gal</u>
A) <u>Air dried</u>	<u>0.34</u>	<u>(2.8)</u>
B) <u>Baked</u>	<u>0.28</u>	<u>(2.3)</u>

2) On and after May 1, 2011:

	<u>kg/l</u> <u>(lb/gal)</u>	<u>kg/l (lb/gal)</u> <u>solids applied</u>
A) <u>General, One Component</u>	<u>0.275</u> <u>(2.3)</u>	<u>0.40</u> <u>(3.3)</u>
B) <u>General, Multi-Component</u>		
i) <u>Air Dried</u>	<u>0.340</u> <u>(2.8)</u>	<u>0.55</u> <u>(4.5)</u>
ii) <u>Baked</u>	<u>0.275</u> <u>(2.3)</u>	<u>0.40</u> <u>(3.3)</u>
C) <u>Extreme High Gloss</u>		
i) <u>Air Dried</u>	<u>0.340</u> <u>(2.8)</u>	<u>0.55</u> <u>(4.5)</u>
ii) <u>Baked</u>	<u>0.360</u> <u>(3.0)</u>	<u>0.61</u> <u>(5.1)</u>
D) <u>Extreme Performance</u>		
i) <u>Air Dried</u>	<u>0.420</u> <u>(3.5)</u>	<u>0.80</u> <u>(6.7)</u>
ii) <u>Baked</u>	<u>0.360</u> <u>(3.0)</u>	<u>0.61</u> <u>(5.1)</u>

E)	<u>Heat Resistant</u>		
	i) <u>Air Dried</u>	<u>0.420</u> <u>(3.5)</u>	<u>0.80</u> <u>(6.7)</u>
	ii) <u>Baked</u>	<u>0.360</u> <u>(3.0)</u>	<u>0.61</u> <u>(5.1)</u>
F)	<u>Metallic</u>	<u>0.420</u> <u>(3.5)</u>	<u>0.80</u> <u>(6.7)</u>
G)	<u>Pretreatment Coatings</u>	<u>0.420</u> <u>(3.5)</u>	<u>0.80</u> <u>(6.7)</u>
H)	<u>Solar Absorbent</u>		
	i) <u>Air Dried</u>	<u>0.420</u> <u>(3.5)</u>	<u>0.80</u> <u>(6.7)</u>
	ii) <u>Baked</u>	<u>0.360</u> <u>(3.0)</u>	<u>0.61</u> <u>(5.1)</u>
1)	<u>Air dried</u>	<u>0.34</u> <u>0.34*</u>	<u>(2.8)</u> <u>(2.8)*</u>
2)	<u>Baked</u>	<u>0.34</u> <u>0.28*</u>	<u>(2.8)</u> <u>(2.3)*</u>

(Note: These limitations shall not apply to the use of quick-drying lacquers for repair of scratches and nicks that occur during assembly, provided that the volume of coating does not exceed 0.95 l (1 quart) in any one rolling eight-hour period. On and after May 1, 2011, these limitations shall also not apply to stencil coatings, safety-indicating coatings, solid-film lubricants, electric-insulating and thermal-conducting coatings, touch-up and repair coatings, or coating applications utilizing hand-held aerosol cans.)

3) On and after May 1, 2011, an owner or operator of a coating line subject to the limitations in subsection (h) of this Section shall apply all coatings using one or more of the following application methods:

A) Electrostatic spray;

B) High volume low pressure (HVLP) spray;

C) Flow coating. For the purposes of this subsection (h), flow coating means a non-atomized technique of applying coating to a substrate with a fluid nozzle with no air supplied to the nozzle;

D) Roll coating;

E) Brush coating;

F) Dip coating, including electrodeposition. For purposes of this subsection (h), electrodeposition means a water-borne dip coating process in which opposite electrical charges are applied to the substrate and the coating. The coating is attracted to the substrate due to the electrochemical potential difference that is created; or

G) Another coating application method capable of achieving a transfer efficiency equal to or better than that achieved by HVLP spraying, if such method is approved in writing by the Agency.

		kg/l	lb/gal
i)	Magnet Wire Coating	0.20	(1.7)
		0.20*	(1.7)*
j)	Miscellaneous Metal Parts and Products Coating		
1)	Clear coating	0.52	(4.3)
		0.52*	(4.3)*
2)	Extreme performance coating		
A)	Air dried	0.42	(3.5)
		0.42*	(3.5)*
B)	Baked	0.42	(3.5)
		0.40*	(3.3)*
3)	Steel pail and drum interior coating	0.52	(4.3)
		0.52*	(4.3)*
4)	All other coatings		

	A)	Air Dried	0.42 0.40*	(3.5) (3.3)*
	B)	Baked	0.36 0.34*	(3.0) (2.8)*
5)		Marine engine coating		
	A)	Air Dried	0.42 0.42*	(3.5) (3.5)*
	B)	Baked		
		i) Primer/Topcoat	0.42 0.42*	(3.5) (3.5)*
		ii) Corrosion resistant basecoat	0.42 0.28*	(3.5) (2.3)*
	C)	Clear Coating	0.52 0.52*	(4.3) (4.3)*
6)		Metallic Coating		
	A)	Air Dried	0.42 0.42*	(3.5) (3.5)*
	B)	Baked	0.36 0.36	(3.0) (3.0)*
7)		Definitions		
	A)	For purposes of subsection 218.204(j)(5) of this Section, the following terms are defined:		
		i)	"Corrosion resistant basecoat" means, for purposes of subsection 218.204(j)(5)(B)(ii) of this Section, a water-borne epoxy coating applied via an electrodeposition process to a metal surface prior to spray coating, for the purpose of enhancing corrosion resistance.	
		ii)	"Electrodeposition process" means, for purposes of subsection 218.204(j)(5) of this Section, a water-borne dip coating process in which opposite	

electrical charges are applied to the substrate and the coating. The coating is attracted to the substrate due to the electrochemical potential difference that is created.

iii) "Marine engine coating" means, for purposes of subsection 218.204(j)(5) of this Section, any extreme performance protective, decorative or functional coating applied to an engine that is used to propel watercraft.

B) For purposes of subsection 218.204(j)(6) of this Section, "metallic coating" means a coating which contains more than 1/4 lb/gal of metal particles, as applied.

k)	Heavy Off-Highway Vehicle Products Coating	kg/l	lb/gal
	1) Extreme performance prime coat	0.42 0.42*	(3.5) (3.5)*
	2) Extreme performance topcoat (air dried)	0.42 0.42*	(3.5) (3.5)*
	3) Final repair coat (air dried)	0.42 0.42*	(3.5) (3.5)*
	4) All other coatings are subject to the emission limitations for miscellaneous metal parts and products coatings in subsection (j) above.		
l)	Wood Furniture Coating		
	1) Limitations before March 15, 1998:	kg/l	lb/gal
	A) Clear topcoat	0.67	(5.6)
	B) Opaque stain	0.56	(4.7)
	C) Pigmented coat	0.60	(5.0)
	D) Repair coat	0.67	(5.6)
	E) Sealer	0.67	(5.6)

F)	Semi-transparent stain	0.79	(6.6)
G)	Wash coat	0.73	(6.1)

(Note: Prior to March 15, 1998, an owner or operator of a wood furniture coating operation subject to this Section shall apply all coatings, with the exception of no more than 37.8 l (10 gal) of coating per day used for touch-up and repair operations, using one or more of the following application systems: airless spray application system, air-assisted airless spray application system, electrostatic spray application system, electrostatic bell or disc spray application system, heated airless spray application system, roller coating, brush or wipe coating application system, dip coating application system or high volume low pressure (HVLP) application system.)

- 2) On and after March 15, 1998, wood furniture sealers and topcoats must comply with one of the limitations specified in subsections (1)(2)(A) through (E), below:

		kg VOM/kg solids	lb VOM/lb solids
A)	Topcoat	0.8	(0.8)
B)	Sealers and topcoats with the following limits:		
	i) Sealer other than acid-cured alkyd amino vinyl sealer	1.9	(1.9)
	ii) Topcoat other than acid-cured alkyd amino conversion varnish topcoat	1.8	(1.8)
	iii) Acid-cured alkyd amino vinyl sealer	2.3	(2.3)
	iv) Acid-cured alkyd amino conversion varnish topcoat	2.0	(2.0)
C)	Meet the provisions of Section 218.215 of this Subpart for		

use of an averaging approach;

- D) Achieve a reduction in emissions equivalent to the requirements of subsection (1)(2)(A) or (B) of this Section, as calculated using Section 218.216 of this Subpart; or
 - E) Use a combination of the methods specified in subsections (1)(2)(A) through (D) of this Section.
- 3) Other wood furniture coating limitations on and after March 15, 1998:
- | | kg/l | lb/gal |
|-------------------------------|------|--------|
| A) Opaque stain | 0.56 | (4.7) |
| B) Non-topcoat pigmented coat | 0.60 | (5.0) |
| C) Repair coat | 0.67 | (5.6) |
| D) Semi-transparent stain | 0.79 | (6.6) |
| E) Wash coat | 0.73 | (6.1) |
- 4) Other wood furniture coating requirements on and after March 15, 1998:
- A) No source subject to the limitations of subsection (1)(2) or (3) of this Section and utilizing one or more wood furniture coating spray booths shall use strippable spray booth coatings containing more than 0.8 kg VOM/kg solids (0.8 lb VOM/lb solids), as applied.
 - B) Any source subject to the limitations of subsection (1)(2) or (3) of this Section shall comply with the requirements of Section 218.217 of this Subpart.
 - C) Any source subject to the limitations of subsection (1)(2)(A) or (B) of this Section and utilizing one or more continuous coaters shall, for each continuous coater, use an initial coating which complies with the limitations of subsection (1)(2)(A) or (B) of this Section. The viscosity of the coating in each reservoir shall always be greater than or equal to the viscosity of the initial coating in the reservoir. The owner or operator shall:

- i) Monitor the viscosity of the coating in the reservoir with a viscosity meter or by testing the viscosity of the initial coating and retesting the coating in the reservoir each time solvent is added;
- ii) Collect and record the reservoir viscosity and the amount and weight of VOM per weight of solids of coating and solvent each time coating or solvent is added; and
- iii) Maintain these records at the source for a period of three years.

m)	Existing Diesel-Electric Locomotive Coating Lines in Cook County	kg/l	lb/gal
	1) Extreme performance prime coat	0.42 0.42*	(3.5) (3.5)*
	2) Extreme performance top-coat (air dried)	0.42 0.42*	(3.5) (3.5)*
	3) Final repair coat (air dried)	0.42 0.42*	(3.5) (3.5)*
	4) High-temperature aluminum coating	0.72 0.72*	(6.0) (6.0)*
	5) All other coatings	0.36 0.36*	(3.0) (3.0)*
n)	Plastic Parts Coating: Automotive/Transportation	kg/l	lb/gal
	1) Interiors		
	A) Baked		
	i) Color coat	0.49*	(4.1)*
	ii) Primer	0.46*	(3.8)*
	B) Air Dried		
	i) Color coat	0.38*	(3.2)*

	ii)	Primer	0.42*	(3.5)*
2)	Exteriors (flexible and non-flexible)			
	A)	Baked		
	i)	Primer	0.60*	(5.0)*
	ii)	Primer non-flexible	0.54*	(4.5)*
	iii)	Clear coat	0.52*	(4.3)*
	iv)	Color coat	0.55*	(4.6)*
	B)	Air Dried		
	i)	Primer	0.66*	(5.5)*
	ii)	Clear coat	0.54*	(4.5)*
	iii)	Color coat (red & black)	0.67*	(5.6)*
	iv)	Color coat (others)	0.61*	(5.1)*
3)	Specialty			
	A)	Vacuum metallizing basecoats, texture basecoats	0.66*	(5.5)*
	B)	Black coatings, reflective argent coatings, air bag cover coatings, and soft coatings	0.71*	(5.9)*
	C)	Gloss reducers, vacuum metallizing topcoats, and texture topcoats	0.77*	(6.4)*
	D)	Stencil coatings, adhesion primers, ink pad coatings, electrostatic prep coatings, and resist coatings	0.82*	(6.8)*

	E)	Head lamp lens coatings	0.89*	(7.4)*
o)		Plastic Parts Coating: Business Machine	kg/l	lb/gal
	1)	Primer	0.14*	(1.2)*
	2)	Color coat (non-texture coat)	0.28*	(2.3)*
	3)	Color coat (texture coat)	0.28*	(2.3)*
	4)	Electromagnetic interference/radio frequency interference (EMI/RFI) shielding coatings	0.48*	(4.0)*
	5)	Specialty Coatings		
	A)	Soft coat	0.52*	(4.3)*
	B)	Plating resist	0.71*	(5.9)*
	C)	Plating sensitizer	0.85*	(7.1)*

(Source: Amended at __Ill. Reg. ____, effective ____)

Section 218.205 Daily-Weighted Average Limitations

No owner or operator of a coating line subject to the limitations of Section 218.204 of this Subpart and complying by means of this Section shall operate the subject coating line unless the owner or operator has demonstrated compliance with subsection (a), (b), (c), (d), (e), (f), (g), (h), ~~or (i), or (j)~~ of this Section (depending upon the category of coating) through the applicable coating analysis test methods and procedures specified in Section 218.105(a) of this Part and the recordkeeping and reporting requirements specified in Section 218.211(d) of this Subpart:

- a) No owner or operator of a coating line subject to only one of the limitations from among Section 218.204(a)(1), (a)(4), ~~(e), (d), (e), (f), or (i)~~, or, prior to May 1, 2011, (c) of this Subpart shall apply coatings on any such coating line, during any day, whose daily-weighted average VOM content exceeds the emission limitation to which the coatings are subject.
- b) No owner or operator of a miscellaneous metal parts and products coating line subject to the limitations of Section 218.204(j) of this Subpart shall apply coatings to miscellaneous metal parts or products on the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met.

- 1) For each coating line which applies multiple coatings, all of which are subject to the same numerical emission limitation within Section 218.204(j) during the same day (e.g., all coatings used on the line are subject to 0.42 kg/l [3.5 lbs/gal]), the daily-weighted average VOM content shall not exceed the coating VOM content limit corresponding to the category of coating used, or
 - 2) For each coating line which applies coatings subject to more than one numerical emission limitation in Section 218.204(j) of this Subpart, during the same day, the owner or operator shall have a site-specific proposal approved by the Agency and approved by the USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy) 51 Fed. Reg. 43814 (December 4, 1986), must be satisfied.
- c) No owner or operator of a can coating line subject to the limitations of Section 218.204(b) of this Subpart shall operate the subject coating line using a coating with a VOM content in excess of the limitations specified in Section 218.204(b) of this Subpart unless all of the following requirements are met:
- 1) An alternative daily emission limitation shall be determined for the can coating operation, i.e. for all of the can coating lines at the source, according to subsection (c)(2) of this Section. Actual daily emissions shall never exceed the alternative daily emission limitation and shall be calculated by use of the following equation.

$$E_d = \sum_{i=1}^n V_i C_i$$

where:

E_d = Actual VOM emissions for the day in units of kg/day (lbs/day);

i = Subscript denoting a specific coating applied;

n = Total number of coatings applied in the can coating operation, i.e. all can coating lines at the source;

V_i = Volume of each coating applied for the day in units of l/day (gal/day) of coating (minus water and any compounds which are specifically exempted from the definition of VOM);

C_i = The VOM content of each coating as applied in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM).

- 2) The alternative daily emission limitation (A_d) shall be determined for the can coating operation, i.e. for all of the can coating lines at the source, on a daily basis as follows:

$$A_d = \sum_{i=1}^n V_i L_i \left(\frac{D_i - C_i}{D_i - L_i} \right)$$

where:

A_d = The VOM emissions allowed for the day in units of kg/day (lbs/day);

i = Subscript denoting a specific coating applied;

n = Total number of surface coatings applied in the can coating operation;

C_i = The VOM content of each surface coating as applied in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM);

D_i = The density of VOM in each coating applied. For the purposes of calculating A_d , the density is 0.882 kg VOM/l VOM (7.36 lbs VOM/gal VOM);

V_i = Volume of each surface coating applied for the day in units of l (gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM);

L_i = The VOM emission limitation for each surface coating applied as specified in Section 218.204(b) of this Subpart in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM).

- d) No owner or operator of a heavy off-highway vehicle products coating line subject to the limitations of Section 218.204(k) of this Subpart shall apply coatings to heavy off-highway vehicle products on the subject coating line unless the requirements of subsection (d)(1) or (d)(2) of this

Section are met.

- 1) For each coating line which applies multiple coatings, all of which are subject to the same numerical emission limitation within Section 218.204(k) of this Subpart, during the same day (e.g., all coatings used on the line are subject to 0.42 kg/l (3.5 lbs/gal)), the daily-weighted average VOM content shall not exceed the coating VOM content limit corresponding to the category of coating used, or
 - 2) For each coating line which applies coatings subject to more than one numerical emission limitation in Section 218.204(k) of this Subpart, during the same day, the owner or operator shall have a site specific proposal approved by the Agency and approved by the USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy) 51 Fed. Reg. 43814 (December 4, 1986), must be satisfied.
- e) No owner or operator of a wood furniture coating line subject to the limitations of Section 218.204(l)(1) or (l)(3) of this Subpart shall apply coatings to wood furniture on the subject coating line unless the requirements of subsection (e)(1) or subsection (e)(2) of this Section, in addition to the requirements specified in the note to Section 218.204(l)(1) of this Subpart, are met.
- 1) For each coating line which applies multiple coatings, all of which are subject to the same numerical emission limitation within Section 218.204(l)(1) or (l)(3) of this Subpart, during the same day (e.g., all coatings used on the line are subject to 0.67 kg/l (5.6 lbs/gal)), the daily-weighted average VOM content shall not exceed the coating VOM content limit corresponding to the category of coating used, or
 - 2) For each coating line which applies coatings subject to more than one numerical emission limitation in Section 218.204(l)(1) or (l)(3) of this Subpart, during the same day, the owner or operator shall have a site specific proposal approved by the Agency and approved by the USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy) 51 Fed. Reg. 43814 (December 4, 1986), must be satisfied.
- f) No owner or operator of an existing diesel-electric locomotive coating line in Cook County, subject to the limitations of Section 218.204(m) of this Subpart shall apply coatings to diesel-electric locomotives on the subject coating line unless the requirements of subsection (f)(1) or (f)(2) of this

Section are met.

- 1) For each coating line which applies multiple coatings, all of which are subject to the same numerical emission limitation within Section 218.204(m) of this Subpart, during the same day (e.g., all coatings used on the line are subject to 0.42 kg/l (3.5 lbs/gal)), the daily-weighted average VOM content shall not exceed the coating VOM content limit corresponding to the category of coating used, or
 - 2) For each coating line which applies coatings subject to more than one numerical emission limitation in Section 218.204(m) of this Subpart, during the same day, the owner or operator shall have a site specific proposal approved by the Agency and approved by the USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy) must be satisfied.
- g) No owner or operator of a plastic parts coating line, subject to the limitations of Section 218.204(n) or (o) of this Subpart shall apply coatings to business machine or automotive/transportation plastic parts on the subject coating line unless the requirements of subsection (g)(1) or (g)(2) of this Section are met:
- 1) For each coating line which applies multiple coatings, all of which are subject to the same numerical emission limitation within Section 218.204(n) or (o) of this Subpart, during the same day (e.g., all coatings used on the line are subject to 0.42 kg/l (3.5 lbs/gal)), the daily-weighted average VOM content shall not exceed the coating VOM content limit corresponding to the category of coating used; or
 - 2) For each coating line which applies coatings subject to more than one numerical emission limitation in Section 218.204(n) or (o) of this Subpart, during the same day, the owner or operator shall have a site specific proposal approved by the Agency and approved by the USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy) must be satisfied.
- h) No owner or operator of a metal furniture coating line, subject to the limitations of Section 218.204(g) of this Subpart shall apply coatings on the subject coating line unless the requirements of subsection (h)(1) or (h)(2) of this Section are met:
- 1) For each coating line which applies multiple coatings, all of which

are subject to the same numerical emission limitation within Section 218.204(g) of this Subpart, during the same day (e.g., all coatings used on the line are subject to 0.34 kg/l (2.8 lbs/gal)), the daily-weighted average VOM content shall not exceed the coating VOM content limit corresponding to the category of coating used; or

- 2) For each coating line which applies coatings subject to more than one numerical emission limitation in Section 218.204(g) of this Subpart, during the same day, the owner or operator shall have a site specific proposal approved by the Agency and approved by the USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy) must be satisfied.
- i) No owner or operator of a large appliance coating line, subject to the limitations of Section 218.204(h) of this Subpart shall apply coatings on the subject coating line unless the requirements of subsection (i)(1) or (i)(2) of this Section are met:
- 1) For each coating line which applies multiple coatings, all of which are subject to the same numerical emission limitation within Section 218.204(h) of this Subpart, during the same day (e.g., all coatings used on the line are subject to 0.34 kg/l (2.8 lbs/gal)), the daily-weighted average VOM content shall not exceed the coating VOM content limit corresponding to the category of coating used, or
 - 2) For each coating line which applies coatings subject to more than one numerical emission limitation in Section 218.204(h) of this Subpart, during the same day, the owner or operator shall have a site specific proposal approved by the Agency and approved by the USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy) must be satisfied.
- j) On and after May 1, 2011, no owner or operator of a paper coating line subject to the limitations of Section 218.204(c) of this Subpart shall apply coatings on the subject coating line unless the requirements in subsection (j)(1) or (j)(2) of this Section are met:
- 1) For each coating line which applies multiple coatings, all of which are subject to the same numerical emission limitation within Section 218.204(c) during the same day (e.g., all coatings used on the line are subject to 0.40 kg/kg solids [0.08 kg/kg coatings]), the daily-weighted average VOM content shall not exceed the coating

VOM content limit corresponding to the category of coating used;
or

- 2) For each coating line which applies coatings subject to more than one numerical emission limitation in Section 218.204(c) during the same day, the owner or operator shall have a site-specific proposal approved by the Agency and approved by the USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy), 51 Fed. Reg. 43814 (December 4, 1986), must be satisfied.

(Source: Amended at ___ Ill. Reg. _____, effective _____)

Section 218.207 Alternative Emission Limitations

- a) Any owner or operator of a coating line subject to Section 218.204 of this Subpart may comply with this Section, rather than with Section 218.204 of this Subpart, if a capture system and control device are operated at all times the coating line is in operation and the owner or operator demonstrates compliance with subsections (c), (d), (e), (f), (g), (h), (i), (j), ~~or (k),~~ or (l) of this Section (depending upon the source category) through the applicable coating analysis and capture system and control device efficiency test methods and procedures specified in Section 218.105 of this Part and the recordkeeping and reporting requirements specified in Section 218.211(e) of this Subpart; and the control device is equipped with the applicable monitoring equipment specified in Section 218.105(d) of this Part and the monitoring equipment is installed, calibrated, operated and maintained according to vendor specifications at all times the control device is in use. A capture system and control device, which does not demonstrate compliance with subsection (c), (d), (e), (f), (g), (h), (i), (j), ~~or (k),~~ or (l) of this Section may be used as an alternative to compliance with Section 218.204 of this Subpart only if the alternative is approved by the Agency and approved by the USEPA as a SIP revision.
- b) Alternative Add-On Control Methodologies
 - 1) The coating line is equipped with a capture system and control device that provides 81 percent reduction in the overall emissions of VOM from the coating line and the control device has a 90 percent efficiency, or
 - 2) The system used to control VOM from the coating line is demonstrated to have an overall efficiency sufficient to limit VOM emissions to no more than what is allowed under Section 218.204 of this Subpart. Use of any control system other than an afterburner, carbon adsorption, condensation, or absorption

scrubber system can be allowed only if approved by the Agency and approved by the USEPA as a SIP revision. The use of transfer efficiency credits can be allowed only if approved by the Agency and approved by the USEPA as a SIP revision. Baseline transfer efficiencies and transfer efficiency test methods must be approved by the Agency and the USEPA. Such overall efficiency is to be determined as follows:

- A) Obtain the emission limitation from the appropriate subsection in Section 218.204 of this Subpart;
 - B) Calculate "S" according to the equation in Section 218.206 of this Subpart;
 - C) Calculate the overall efficiency required according to Section 218.105(e) of this Part. For the purposes of calculating this value, according to the equation in Section 218.105(e)(2) of this Part, VOM_1 is equal to the value of "S" as determined above in subsection (b)(2)(B) of this Section.
- c) No owner or operator of a coating line subject to only one of the emission limitations from among Section 218.204(a)(1), (a)(4), ~~(e)~~, (d), (e), (f), ~~or (i)~~, or, prior to May 1, 2011, (c) of this Subpart and equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met. No owner or operator of a coating line subject to Section 218.204(a)(2) or 218.204(a)(3) and equipped with a capture system and control device shall operate the coating line unless the owner or operator demonstrates compliance with such limitation in accordance with the topcoat protocol referenced in Section 218.105(b).
- d) No owner or operator of a miscellaneous metal parts and products coating line which applies one or more coatings during the same day, all of which are subject to the same numerical emission limitation within Section 218.204(j) of this Subpart (e.g., all coatings used on the line are subject to 0.42 kg/1 [3.5 lbs/gal], and which is equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met.
- e) No owner or operator of a heavy off-highway vehicle products coating line which applies one or more coatings during the same day, all of which are subject to the same numerical emission limitation within Section 218.204(k) of this Subpart (e.g., all coatings used on the line are subject to 0.42 kg/1 [3.5 lbs/gal]), and which is equipped with a capture system and

control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met.

- f) No owner or operator of an existing diesel-electric locomotive coating line in Cook County which applies one or more coatings during the same day, all of which are subject to the same numerical emission limitation within Section 218.204(m) of this Subpart (e.g., all coatings used on the line are subject to 0.42 kg/1 [3.5 lbs/gal]), and which is equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met.
- g) No owner or operator of a wood furniture coating line which applies one or more coatings during the same day, all of which are subject to the same numerical emission limitation within Section 218.204(l) of this Subpart (e.g., all coatings used on the line are subject to 0.67 kg/1 [5.6 lbs/gal]), and which is equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met. If compliance is achieved by meeting the requirements in subsection (b)(2) of this Section, then the provisions in the note to Section 218.204(l) of this Subpart must also be met.
- h) No owner or operator of a can coating line which is equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (h)(1) or (h)(2) of this Section are met.
- 1) An alternative daily emission limitation shall be determined for the can coating operation, i.e. for all of the can coating lines at the source, according to Section 218.205(c)(2) of this Subpart. Actual daily emissions shall never exceed the alternative daily emission limitation and shall be calculated by use of the following equation:

$$E_d = \sum_{i=1}^n V_i C_i (1-F_i)$$

where:

E_d = Actual VOM emissions for the day in units of kg/day (lbs/day);

i = Subscript denoting the specific coating applied;

n = Total number of surface coatings as applied in the can coating operation;

V_i = Volume of each coating as applied for the day in units of l/day (gal/day) of coating (minus water and any compounds which are specifically exempted from the definition of VOM);

C_i = The VOM content of each coating as applied in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM); and

F_i = Fraction, by weight, of VOM emissions from the surface coating, reduced or prevented from being emitted to the ambient air. This is the overall efficiency of the capture system and control device.

- 2) The coating line is equipped with a capture system and control device that provide 75 percent reduction in the overall emissions of VOM from the coating line and the control device has a 90 percent efficiency.
 - i) No owner or operator of a plastic parts coating line which applies one or more coatings during the same day, all of which are subject to the same numerical emission limitation within Section 218.204(n) or (o) of this Subpart (e.g., all coatings used on the line are subject to 0.42 kg/l [3.5 lbs/gal]), and which is equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met.
 - j) Prior to May 1, 2011, no owner or operator of a metal furniture coating line which applies one or more coatings during the same day, all of which are subject to the same numerical emission limitation within Section 218.204(g) of this Subpart (e.g., all coatings used on the line are subject to 0.34 kg/l [2.8 lbs/gal]), and which is equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met.
 - k) Prior to May 1, 2011, no owner or operator of a large appliance coating line which applies one or more coatings during the same day, all of which are subject to the same numerical emission limitation within Section 218.204(h) of this Subpart (e.g., all coatings used on the line are subject to 0.34 kg/l [2.8 lbs/gal]), and which is equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met.

- 1) On and after May 1, 2011, no owner or operator of a paper coating line, metal furniture coating line, or large appliance coating line which is equipped with a capture system and control device shall operate the subject coating line unless either:
 - 1) The capture system and control device provide at least 90 percent reduction in the overall emissions of VOM from the coating line;
or
 - 2) The owner or operator complies with the applicable limitation set forth in Section 218.204 of this Subpart by utilizing a combination of low-VOM coatings and a capture system and control device.

(Source: Amended at ___ Ill. Reg. ____, effective ____)

Section 218.210 Compliance Schedule

Every owner or operator of a coating line (of a type included within Section 218.204 of this Subpart) shall comply with the requirements of Section 218.204, 218.205, 218.207 or 218.208 and Section 218.211 or Sections 218.212 and 218.213 of this Subpart in accordance with the appropriate compliance schedule as specified in subsection (a), (b), (c), (d), (e), ~~(f)~~, or (g) below:

- a) No owner or operator of a coating line which is exempt from the limitations of Section 218.204 of this Subpart because of the criteria in Section 218.208(a) or (b) of this Subpart shall operate said coating line on or after a date consistent with Section 218.106 of this Part, unless the owner or operator has complied with, and continues to comply with, Section 218.211(b) of this Subpart.
- b) No owner or operator of a coating line complying by means of Section 218.204 of this Subpart shall operate said coating line on or after a date consistent with Section 218.106 of this Part, unless the owner or operator has complied with, and continues to comply with, Sections 218.204 and 218.211(c) of this Subpart.
- c) No owner or operator of a coating line complying by means of Section 218.205 of this Subpart shall operate said coating line on or after a date consistent with Section 218.106 of this Part, unless the owner or operator has complied with, and continues to comply with, Sections 218.205 and 218.211(d) of this Subpart.
- d) No owner or operator of a coating line complying by means of Section 218.207 of this Subpart shall operate said coating line on or after a date consistent with Section 218.106 of this Part, unless the owner or operator has complied with, and continues to comply with, Sections 218.207 and

218.211(e) of this Subpart.

- e) No owner or operator of a coating line subject to one or more of the emission limitations contained in Section 218.204 of this Subpart on or after March 15, 1996, choosing to comply by means of Section 218.204, 218.205 or 218.207 of this Subpart, shall operate said coating line on or after March 15, 1996, unless the owner or operator complies with and continues to comply with, respectively, the applicable requirements in Section 218.204, or the alternative control options in Section 218.205 or 218.207 and the requirements of Section 218.211.
- f) No owner or operator of a coating line subject to one or more of the emission limitations contained in Section 218.204 of this Subpart on or after March 15, 1996, choosing to comply by means of Section 218.212 of this Subpart, shall operate said coating line on or after March 15, 1996, unless the owner or operator complies with and continues to comply with the requirements of Sections 218.212 and 218.213 of this Subpart.
- g) No owner or operator of a coating line subject to the emission limitations in Section 218.204(c)(2), 218.204(g)(2), or 218.204(h)(2) of this Subpart shall operate said coating line on or after a date consistent with Section 218.106(e) of this Part, unless the owner or operator has complied with, and continues to comply with, Section 218.204(c)(2), 218.204(g)(2), or 218.204(h)(2), as applicable, or the alternative control options in Section 218.205 or 218.207, and all applicable requirements in Sections 218.211 and 218.218 of this Subpart.

(Source: Amended at ___ Ill. Reg. _____, effective _____)

Section 218.211 Recordkeeping and Reporting

- a) The VOM content of each coating and the efficiency of each capture system and control device shall be determined by the applicable test methods and procedures specified in Section 218.105 of this Part to establish the records required under this Section.
- b) Any owner or operator of a coating line which is exempted from the limitations of Section 218.204 of this Subpart because of Section 218.208(a) or (b) of this Subpart shall comply with the following:
 - 1) For sources exempt under Section 218.208(a) of this Subpart, by a date consistent with Section 218.106 of this Part, the owner or operator of a coating line or a group of coating lines referenced in subsection (b) of this Section shall certify to the Agency that the coating line or group of coating lines is exempt under the

provisions of Section 218.208(a) -of this Subpart. Such certification shall include:

- A) A declaration that the coating line or group of coating lines is exempt from the limitations of Section 218.204 of this Subpart because of Section 218.208(a) of this Subpart; and
- B) Calculations which demonstrate that the combined VOM emissions from the coating lines or group of coating lines never exceed 6.8 kg (15 lbs) per day before the application of capture systems and control devices. The following equation shall be used to calculate total VOM emissions:

$$T_e = \sum_{j=1}^m \sum_{i=1}^n (A_i B_i)_j$$

where:

- T_e = Total VOM emissions from coating lines each day before the application of capture systems and control devices in units of kg/day (lbs/day);
- m = Number of coating lines at the source that otherwise would be subject to the same subsection of Section 218.104 of this Part (because they belong to the same category, e.g., can coating);
- j = Subscript denoting an individual coating line;
- n = Number of different coatings as applied each day on each coating line;
- i = Subscript denoting an individual coating;
- A_i = Weight of VOM per volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line in units of kg VOM/l (lbs VOM/gal); and
- B_i = Volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line in units of l/day (gal/day). The instrument or method by which the owner or operator accurately measured or calculated the

volume of each coating as applied on each coating line each day shall be described in the certification to the Agency.

- 2) For sources exempt under Section 218.208(b) of this Subpart, by March 15, 1998, or upon initial start-up, the owner or operator of a coating line or a group of coating lines referenced in subsection (b) of this Section shall certify to the Agency that the source is exempt under the provisions of Section 218.208(b) of this Subpart. Such certification shall include:
 - A) A declaration that the source is exempt from the limitations of Section 218.204(l) of this Subpart because of Section 218.208(b) of this Subpart; and
 - B) Calculations which demonstrate that the source meets the criteria for exemption because of Section 218.208(b) of this Subpart.
- 3) For sources exempt under Section 218.208(a) of this Subpart, on and after a date consistent with Section 218.106 of this Part, the owner or operator of a coating line or group of coating lines referenced in this subsection shall collect and record all of the following information each day for each coating line and maintain the information at the source for a period of three years:
 - A) The name and identification number of each coating as applied on each coating line; and
 - B) The weight of VOM per volume and the volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line.
- 4) For sources exempt under Section 218.208(b) of this Subpart, on and after March 15, 1998, the owner or operator of a coating line or group of coating lines referenced in this subsection (b) shall collect and record all of the following information for each coating line and maintain the information at the source for a period of three years:
 - A) The name and identification number of each coating as applied on each coating line; and
 - B) The weight of VOM per volume and the volume of each coating (minus water and any compounds which are

specifically exempted from the definition of VOM) as applied on each coating line on a monthly basis.

- 5) On and after a date consistent with Section 218.106 of this Part, the owner or operator of a coating line or group of coating lines exempted from the limitations of Section 218.204 of this Subpart because of Section 218.208(a) of this Subpart shall notify the Agency of any record showing that total VOM emissions from the coating line or group of coating lines exceed 6.8 kg (15 lbs) in any day before the application of capture systems and control devices by sending a copy of such record to the Agency within 30 days after the exceedance occurs.
 - 6) On and after March 15, 1998, any owner or operator of a source exempt from the limitations of Section 218.204(l) of this Subpart because of Section 218.208(b) of this Subpart shall notify the Agency if the source's VOM emissions exceed the limitations of Section 218.208(b) of this Subpart by sending a copy of calculations showing such an exceedance within 30 days after the change occurs.
- c) Any owner or operator of a coating line subject to the limitations of Section 218.204 of this Subpart other than Section 218.204(a)(2) or (a)(3) of this Subpart and complying by means of Section 218.204 of this Subpart shall comply with the following:
- 1) By a date consistent with Section 218.106 of this Part, or upon initial start-up of a new coating line, or upon changing the method of compliance from an existing subject coating line from Section 218.205, Section 218.207, Section 218.215, or Section 218.216 of this Subpart to Section 218.204 of this Subpart; the owner or operator of a subject coating line shall certify to the Agency that the coating line will be in compliance with Section 218.204 of this Subpart on and after a date consistent with Section 218.106 of this Part, or on and after the initial start-up date. Such certification shall include:
 - A) The name and identification number of each coating as applied on each coating line;
 - B) The weight of VOM per volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line; ~~and~~
 - C) On and after March 15, 1998, for coating lines subject to

the limitations of Section 218.204(l)(2)(A) or (B) of this Subpart, the weight of VOM per weight of solids in each coating as applied each day on each coating line;

D) For coating lines subject to the limitations of Section 218.204(c)(2) of this Subpart, the weight of VOM per weight of solids (or the weight of VOM per weight of coatings, as applicable) in each coating as applied each day on each coating line; and

E) For coating lines subject to the limitations of Section 218.204(g)(2) or 218.204(h)(2) of this Subpart, the application method(s) used to apply coatings on the subject coating line and the weight of VOM per volume of each coating (or the weight of VOM per volume of solids in each coating, as applicable) as applied each day on each coating line.

2) On and after a date consistent with Section 218.106 of this Part, or on and after the initial start-up date, the owner or operator of a subject coating line shall collect and record all of the following information each day for each coating line and maintain the information at the source for a period of three years:

A) The name and identification number of each coating as applied on each coating line;

B) The weight of VOM per volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line;

C) On and after March 15, 1998, for coating lines subject to the limitations of Section 218.204(l)(2)(A) or (B) of this Subpart, the weight of VOM per weight of solids in each coating as applied each day on each coating line and certified product data sheets for each coating; and

D) On and after March 15, 1998, for wood furniture coating spray booths subject to the limitations of Section 218.204(l)(4)(A) of this Subpart, the weight of VOM per weight of solids in each strippable spray booth coating as applied each day on each spray booth and certified product data sheets for each coating;

E) For coating lines subject to the limitations of Section

218.204(c)(2) of this Subpart, the weight of VOM per weight of solids (or the weight of VOM per weight of coatings, as applicable) in each coating as applied each day on each coating line, and certified product data sheets for each coating; and

F) For coating lines subject to the limitations of Section 218.204(g)(2) or 218.204(h)(2) of this Subpart, the weight of VOM per volume of each coating (or the weight of VOM per volume of solids in each coating, as applicable) as applied each day on each coating line, and certified product data sheets for each coating.

3) On and after a date consistent with Section 218.106 of this Part, the owner or operator of a subject coating line shall notify the Agency in the following instances:

A) Any record showing violation of Section 218.204 of this Subpart shall be reported by sending a copy of such record to the Agency within 30 days following the occurrence of the violation.

B) At least 30 calendar days before changing the method of compliance from Section 218.204 of this Subpart to Section 218.205 or Section 218.207 of this Subpart, the owner or operator shall comply with all requirements of subsection (d)(1) or (e)(1) of this Section below, respectively. Upon changing the method of compliance from Section 218.204 of this Subpart to Section 218.205 of this Subpart or Section 218.207 of this Subpart, the owner or operator shall comply with all requirements of subsection (d) or (e) of this Section, respectively.

d) Any owner or operator of a coating line subject to the limitations of Section 218.204 of this Subpart and complying by means of Section 218.205 of this Subpart shall comply with the following:

1) By a date consistent with Section 218.106 of this Part, or upon initial start-up of a new coating line, or upon changing the method of compliance for an existing subject coating line from Section 218.204 or Section 218.207 of this Subpart to Section 218.205 of this Subpart; the owner or operator of the subject coating line shall certify to the Agency that the coating line will be in compliance with Section 218.205 of this Subpart on and after a date consistent with Section 218.106 of this Part, or on and after the initial start-up date. Such certification shall include:

- A) The name and identification number of each coating line which will comply by means of Section 218.205 of this Subpart.
 - B) The name and identification number of each coating as applied on each coating line.
 - C) The weight of VOM per volume and the volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line.
 - D) On and after March 15, 1998, for coating lines subject to the limitations of Section 218.204(l)(2)(A) or (B) of this Subpart, the weight of VOM per weight of solids in each coating as applied each day on each coating line.
 - E) For coating lines subject to the limitations of Section 218.204(c)(2) of this Subpart, the weight of VOM per weight of solids (or the weight of VOM per weight of coatings, as applicable) in each coating as applied each day on each coating line.
 - F) For coating lines subject to the limitations of Section 218.204(g)(2) or 218.204(h)(2) of this Subpart, the weight of VOM per volume of each coating (or the weight of VOM per volume of solids in each coating, as applicable) as applied each day on each coating line.
 - GE) The instrument or method by which the owner or operator will accurately measure or calculate the volume of each coating as applied each day on each coating line.
 - HF) The method by which the owner or operator will create and maintain records each day as required in subsection (d)(2) of this Section.
 - IG) An example of the format in which the records required in subsection (d)(2) of this Section will be kept.
- 2) On and after a date consistent with Section 218.106 of this Part, or on and after the initial start-up date, the owner or operator of a subject coating line shall collect and record all of the following information each day for each coating line and maintain the information at the source for a period of three years:

- A) The name and identification number of each coating as applied on each coating line.
 - B) The weight of VOM per volume and the volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line.
 - C) On and after March 15, 1998, for coating lines subject to the limitations of Section 218.204(l)(2)(A) or (B) of this Subpart, the weight of VOM per weight of solids in each coating as applied each day on each coating line.
 - D) For coating lines subject to the limitations of Section 218.204(c)(2) of this Subpart, the weight of VOM per weight of solids (or the weight of VOM per weight of coatings, as applicable) in each coating as applied each day on each coating line.
 - E) For coating lines subject to the limitations of Section 218.204(g)(2) or 218.204(h)(2) of this Subpart, the weight of VOM per volume of each coating (or the weight of VOM per volume of solids in each coating, as applicable) as applied each day on each coating line.
 - ~~FD)~~ The daily-weighted average VOM content of all coatings as applied on each coating line as defined in Section 218.104 of this Part.
- 3) On and after a date consistent with Section 218.106 of this Part, the owner or operator of a subject coating line shall notify the Agency in the following instances:
- A) Any record showing violation of Section 218.205 of this Subpart shall be reported by sending a copy of such record to the Agency within 30 days following the occurrence of the violation.
 - B) At least 30 calendar days before changing the method of compliance with this Subpart from Section 218.205 of this Subpart to Section 218.204 or Section 218.207 of this Subpart, the owner or operator shall comply with all requirements of subsection (c)(1) or (e)(1) of this Section, respectively. Upon changing the method of compliance with this subpart from Section 218.205 to Section 218.204

or Section 218.207 of this Subpart, the owner or operator shall comply with all requirements of subsection (c) or (e) of this Section, respectively.

- e) Any owner or operator of a coating line subject to the limitations of Section 218.207 of this Subpart and complying by means of Section 218.207(c), (d), (e), (f), (g), ~~(h)~~, or (l) of this Subpart shall comply with the following:
- 1) By a date consistent with Section 218.106 of this Part, or upon initial start-up of a new coating line, or upon changing the method of compliance for an existing coating line from Section 218.204 or Section 218.205 of this Subpart to Section 218.207 of this Subpart, the owner or operator of the subject coating line shall perform all tests and submit to the Agency the results of all tests and calculations necessary to demonstrate that the subject coating line will be in compliance with Section 218.207 of this Subpart on and after a date consistent with Section 218.106 of this Part, or on and after the initial start-up date.
 - 2) On and after a date consistent with Section 218.106 of this Part, or on and after the initial start-up date, the owner or operator of a subject coating line shall collect and record all of the following information each day for each coating line and maintain the information at the source for a period of three years:
 - A) The weight of VOM per volume of coating solids as applied each day on each coating line, if complying pursuant to Section 218.207(b)(2) of this Subpart.
 - B) Control device monitoring data.
 - C) A log of operating time for the capture system, control device, monitoring equipment and the associated coating line.
 - D) A maintenance log for the capture system, control device and monitoring equipment detailing all routine and non-routine maintenance performed including dates and duration of any outages.
 - 3) On and after a date consistent with Section 218.106 of this Part, the owner or operator of a subject coating line shall notify the Agency in the following instances:
 - A) Any record showing violation of Section 218.207 of this

Subpart shall be reported by sending a copy of such record to the Agency within 30 days following the occurrence of the violation.

- B) At least 30 calendar days before changing the method of compliance with this Subpart from Section 218.207 of this Subpart to Section 218.204 or Section 218.205 of this Subpart, the owner or operator shall comply with all requirements of subsection (c)(1) or (d)(1) of this Section, respectively. Upon changing the method of compliance with this subpart from Section 218.207 of this Subpart to Section 218.204 or Section 218.205 of this Subpart, the owner or operator shall comply with all requirements of subsection (c) or (d) of this Section, respectively.
- f) Any owner or operator of a primer surfacer operation or topcoat operation subject to the limitations of Section 218.204(a)(2) or (a)(3) of this Subpart shall comply with the following:
- 1) By a date consistent with Section 218.106 of this Part, or upon initial start-up of a new coating operation, the owner or operator of a subject coating operation shall certify to the Agency that the operation will be in compliance with Section 218.204 of this Subpart on and after a date consistent with Section 218.106 of this Part, or on and after the initial start-up date. Such certification shall include:
 - A) The name and identification number of each coating operation which will comply by means of Section 218.204(a)(2) and (a)(3) of this Subpart and the name and identification number of each coating line in each coating operation.
 - B) The name and identification number of each coating as applied on each coating line in the coating operation.
 - C) The weight of VOM per volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line.
 - D) The transfer efficiency and control efficiency measured for each coating line.
 - E) Test reports, including raw data and calculations documenting the testing performed to measure transfer

efficiency and control efficiency.

- F) The instrument or method by which the owner or operator will accurately measure or calculate the volume of each coating as applied each day on each coating line.
 - G) The method by which the owner or operator will create and maintain records each day as required in subsection (f)(2) below.
 - H) An example format for presenting the records required in subsection (f)(2) below.
- 2) On and after a date consistent with Section 218.106 of this Part, or on and after the initial start-up date, the owner or operator of a subject coating operation shall collect and record all of the following information each day for each operation and maintain the information at the source for a period of three years:
- A) All information necessary to calculate the daily-weighted average VOM emissions from the coating operations in kg (lbs) per 1 (gal) of coating solids deposited in accordance with the proposal submitted, and approved pursuant to Section 218.204(a)(2) or (a)(3) of this Subpart including:
 - i) The name and identification number of each coating as applied on each coating operation.
 - ii) The weight of VOM per volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating operation.
 - B) If a control device(s) is used to control VOM emissions, control device monitoring data; a log of operating time for the capture system, control device, monitoring equipment and the associated coating operation; and a maintenance log for the capture system, control device and monitoring equipment, detailing all routine and non-routine maintenance performed including dates and duration of any outages.
- 3) On and after a date consistent with Section 218.106 of this Part or on and after the initial start-up date, the owner or operator of a subject coating operation shall determine and record the daily VOM emissions in kg (lbs) per 1 (gal) of coating solids deposited

in accordance with the proposal submitted and approved pursuant to Section 218.204(a)(2) or (a)(3) of this Subpart within 10 days from the end of the month and maintain this information at the source for a period of three years.

- 4) On and after a date consistent with Section 218.106 of this Part, the owner or operator of a subject coating operation shall notify the Agency in the following instances:
- A) Any record showing a violation of Section 218.204(a)(2) or (a)(3) of this Subpart shall be reported by sending a copy of such record to the Agency within 15 days from the end of the month in which the violation occurred.
 - B) The owner or operator shall notify the Agency of any change to the operation at least 30 days before the change is effected. The Agency shall determine whether or not compliance testing is required. If the Agency determines that compliance testing is required, then the owner or operator shall submit a testing proposal to the Agency within 30 days and test within 30 days of the approval of the proposal by the Agency and USEPA.

g) On and after a date consistent with Section 218.106(e) of this Part, or on and after the initial start-up date, whichever is later, the owner or operator of a coating line subject to the requirements of Section 218.218 of this Subpart shall comply with the following:

- 1) By May 1, 2011, or upon initial start-up, whichever is later, submit a certification to the Agency that includes a description of the practices and procedures that the source will follow to ensure compliance with the applicable requirements in Section 218.218 of this Subpart;
- 2) Notify the Agency of any violation of Section 218.218 of this Subpart by providing a description of the violation and copies of records documenting such violation to the Agency within 30 days following the occurrence of the violation; and
- 3) Maintain at the source all records required by this subsection (g) for a minimum of three years from the date the document was created and make such records available to the Agency upon request.

(Source: Amended at __Ill. Reg. _____, effective_____)

Section 218.212 Cross-Line Averaging to Establish Compliance for Coating Lines

- a) On and after March 15, 1996, any owner or operator of a coating line subject to the limitations set forth in Section 218.204 of this Subpart, except coating lines subject to the limitations in Section 218.204(c)(2), (g)(2), or (h)(2) of this Subpart, and with coating lines in operation prior to January 1, 1991 ("pre-existing coating lines"), may, for pre-existing coating lines only, elect to comply with the requirements of this Section, rather than complying with the applicable emission limitations set forth in Section 218.204, if an operational change of the type described below has been made after January 1, 1991, to one or more pre-existing coating lines at the source. An operational change occurs when a pre-existing coating line is replaced with a line using lower VOM coating for the same purpose as the replaced line ("replacement line"). A source electing to rely on this Section to demonstrate compliance with the requirements of this Subpart shall operate pursuant to federally enforceable permit conditions approved by the Agency and USEPA.

- b) An owner or operator of pre-existing coating lines subject to a VOM content limitation in Section 218.204 of this Subpart and electing to rely on this Section to demonstrate compliance with this Subpart must establish, by use of the equations in subsection (d) of this Section, that the calculated actual daily VOM emissions from all participating coating lines, as defined below, are less than the calculated daily allowable VOM emissions from the same group of coating lines. For any pre-existing coating line to be aggregated for the purposes of Section 218.212, 218.213, or 218.214 of this Subpart ("participating coating lines"), the source must establish that:
 - 1) All coatings applied on the participating coating line shall, at all times, have a VOM content less than or equal to the applicable VOM content limitation for such coating listed in Appendix H of this Part; and
 - 2) On the date the source elects to rely on this Section to demonstrate compliance with this Subpart, all coatings applied on the participating coating line are not already in compliance with the VOM content limitation for such coating effective on or after March 15, 1996; or the participating coating line is a replacement line, as defined in subsection (a) of this Section with an operational change occurring on or after January 1, 1991.

- c) Notwithstanding subsection (a) of this Section, any owner or operator of a coating line subject to the limitations set forth in Section 218.204 of this Subpart and electing to rely on this Section to demonstrate compliance

with this Subpart, may also include as a participating coating line, until December 31, 1999, only, any replacement line that satisfies all of the following conditions:

- 1) The replacement line is operated as a powder coating line;
 - 2) The replacement line was added after July 1, 1988; and
 - 3) The owner or operator also includes as a participating coating line one or more coating lines that satisfy the criteria of a replacement line, as described in subsection (a) of this Section.
- d) To demonstrate compliance with this Section, a source shall establish the following:
- 1) An alternative daily emission limitation shall be determined for all participating coating lines at the source according to subsection (d)(2) of this Section. All participating coating lines shall be factored in each day to demonstrate compliance. Provided compliance is established pursuant to the requirements in this subsection, nothing in this Section requires daily operation of each participating line. Actual daily emissions from all participating coating lines (E_d) shall never exceed the alternative daily emission limitation (A_d) and shall be calculated by use of the following equation:

$$E_d = \sum_{i=1}^n V_i C_i$$

where:

E_d = Actual daily VOM emissions from participating coating lines in units of kg/day (lbs/day);

i = Subscript denoting a specific coating applied;

n = Total number of coatings applied by all participating coating lines at the source;

V_i = Volume of each coating applied for the day in units of l/day (gal/day) of coating 3 (minus water and any compounds which are specifically exempted from the definition of VOM); and

C_i = The VOM content of each coating as applied in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM).

- 2) The alternative daily emission limitation (A_d) shall be determined for all participating coating lines at the source on a daily basis as follows:

$$A_d = A_1 + A_p$$

where

A_d and A_p are defined in subsections (2)(A) and (2)(B) of this Section.

- A) The portion of the alternative daily emissions limitation for coating operations at a source using non-powder coating (A_1) shall be determined for all such participating non-powder coating lines on a daily basis as follows:

$$A_1 = \sum_{i=1}^n V_i L_i \frac{(D_i - C_i)}{(D_i - L_i)}$$

where:

A_1 = The VOM emissions allowed for the day in units of kg/day (lbs/day);

i = Subscript denoting a specific coating applied;

n = Total number of coatings applied in the participating coating lines;

C_i = The VOM content of each coating as applied in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM);

D_i = The density of VOM in each coating applied. For the purposes of calculating A_1 , the density is 0.882 kg VOM/l VOM (7.36 lbs VOM/gal VOM);

V_i = Volume of each coating applied for the day in units of l (gal) of coating (minus water and any

compounds which are specifically exempted from the definition of VOM); and

L_i = The VOM emission limitation for each coating applied, as specified in Section 218.204 of this Subpart, in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM).

B) The portion of the alternative daily emission limitation for coating operations at a source using powdered coating (A_p) shall be determined for all such participating powder coating lines at the source on a daily basis as follows:

$$A_p = \sum_{h=1}^m \sum_{j=1}^n \frac{V_j L_j D_j K_h}{(D_j - L_j)}$$

where:

A_p = The VOM emissions allowed for the day in units of kg/day (lbs/day);

h = Subscript denoting a specific powder coating line;

j = Subscript denoting a specific powder coating applied;

m = Total number of participating powder coating lines;

n = Total number of powder coatings applied in the participating coating lines;

D_j = The assumed density of VOM in liquid coating, 0.882 kg VOM/l VOM (7.36 lbs VOM/gal VOM);

V_j = Volume of each powder coating consumed for the day in units of l (gal) of coating; and

L_j = The VOM emission limitation for each coating applied, as specified in Section 218.204 of this Subpart, in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM); and

- K = A constant for each individual coating line representing the ratio of the volume of coating solids consumed on the liquid coating system which has been replaced to the volume of powder coating consumed on the replacement line to accomplish the same coating job. This value shall be determined by the source based on tests conducted and records maintained pursuant to the requirements of Section 218.213 of this Subpart demonstrating the amount of coating solids consumed as both liquid and powder. Test methods and recordkeeping requirements shall be approved by the Agency and USEPA and shall be contained in the source's operating permit as federally enforceable permit conditions, subject to the following restrictions:
- i) K cannot exceed 0.9 for non-recycled powder coating systems; or
 - ii) K cannot exceed 2.0 for recycled powder coating systems.

(Source: Amended at __Ill. Reg. _____, effective _____)

Section 218.218 Work Practice Standards for Paper Coatings, Metal Furniture Coatings, and Large Appliance Coatings

- a) On and after May 1, 2011, every owner or operator of a source subject to the requirements of Section 218.204(c) of this Subpart shall:
 - 1) Store all VOM-containing cleaning materials in closed containers;
 - 2) Ensure that mixing and storage containers used for VOM-containing materials are kept closed at all times except when depositing or removing such materials;
 - 3) Minimize spills of VOM-containing cleaning materials;
 - 4) Convey VOM-containing cleaning materials from one location to another in closed containers or pipes; and
 - 5) Minimize VOM emissions from the cleaning of storage, mixing, and conveying equipment.
- b) On and after May 1, 2011, every owner or operator of a source subject to the requirements of Section 218.204(g) or 218.204(h) of this Subpart shall:

- 1) Store all VOM-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 VOM-containing coatings, thinners, coating-related waste materials, and cleaning materials are kept closed at all times except when depositing or removing such materials;
- 3) Minimize spills of VOM-containing coatings, thinners, coating-related waste materials, and cleaning materials, and clean up spills immediately;
- 4) Convey VOM-containing coatings, thinners, coating-related waste materials, and cleaning materials from one location to another in closed containers or pipes; and
- 5) Minimize VOM emissions from the cleaning of storage, mixing, and conveying equipment.

(Source: Added at __Ill. Reg. ____, effective ____)

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE B: AIR POLLUTION
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER c: EMISSIONS STANDARDS AND
LIMITATIONS FOR STATIONARY SOURCES

PART 219
ORGANIC MATERIAL EMISSION STANDARDS AND
LIMITATIONS FOR THE METRO EAST AREA

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AUTHORITY: Implementing Section 10 and authorized by Sections 27, 28 and 28.5 of the Environmental Protection Act [415 ILCS 5/10, 27, 28 and 28.5].

SOURCE: Adopted in R91-8 at 15 Ill. Reg. 12491, effective August 16, 1991; amended in R91-24 at 16 Ill. Reg. 13597, effective August 24, 1992; amended in R91-30 at 16 Ill. Reg. 13883, effective August 24, 1992; emergency amendment in R93-12 at 17 Ill. Reg. 8295, effective May 24, 1993, for a maximum of 150 days, amended in R93-9 at 17 Ill. Reg. 16918, effective September 27, 1993 and October 21, 1993; amended in R93-28 at 18 Ill. Reg. 4242, effective March 3, 1994; amended in R94-12 at 18 Ill. Reg. 14987, effective September 21, 1994; amended in R94-15 at 18 Ill. Reg. 16415, effective October 25, 1994; amended in R94-16 at 18 Ill. Reg. 16980, effective November 15, 1994; emergency amendment in R95-10 at 19 Ill. Reg. 3059, effective February 28, 1995, for a maximum of 150 days; amended in R94-21, R94-31 and R94-32 at 19 Ill. Reg. 6958, effective May 9, 1995; amended in R94-33 at 19 Ill. Reg. 7385, effective May 22, 1995; amended in R96-2 at 20 Ill. Reg. 3848, effective February 15, 1996; amended in R96-13 at 20 Ill. Reg. 14462, effective October 28, 1996; amended in R97-24 at 21 Ill. Reg. 7721, effective June 9, 1997; amended in R97-31 at 22 Ill. Reg. 3517, effective February 2, 1998; amended in R04-12/20 at 30 Ill. Reg. 9799, effective May 15, 2006; amended in R06-21 at 31 Ill. Reg. 7110, effective April 30, 2007.

SUBPART A: GENERAL PROVISIONS

Section 219.106 Compliance Dates

- a) Except as provided in subsection (b) below, compliance with the requirements of this Part is required by May 15, 1992, consistent with the provisions of Section 219.103 of this Part.

- b) As this Part is amended from time to time, compliance dates included in the specific Subparts supersede the requirements of this Section except as limited by Section 219.101(b) of this Subpart.
- c) Any owner or operator of a source subject to the requirements of Section 219.204(c)(2), 219.204(g)(2), or 219.204(h)(2) of this Part shall comply with the applicable requirements in such Section(s), as well as all applicable requirements in Sections 219.205 through 219.214 and 219.218, by May 1, 2011.

(Source: Amended at __ Ill. Reg. ____, effective ____)

SUBPART F: COATING OPERATIONS

Section 219.204 Emission Limitations

Except as provided in Sections 219.205, 219.207, 219.208, 219.212, 219.215 and 219.216 of this Subpart, no owner or operator of a coating line shall apply at any time any coating in which the VOM content exceeds the following emission limitations for the specified coating. Except as otherwise provided in Sections 219.204(c), 219.204(g), 219.204(h), and 219.204(l), compliance with the emission limitations marked with an asterisk in this Section is required on and after March 15, 1996, and compliance with emission limitations not marked with an asterisk is required until March 15, 1996. The following emission limitations are expressed in units of VOM per volume of coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied at each coating applicator, except where noted. Compounds which are specifically exempted from the definition of VOM should be treated as water for the purpose of calculating the "less water" part of the coating composition. Compliance with this Subpart must be demonstrated through the applicable coating analysis test methods and procedures specified in Section 219.105(a) of this Part and the recordkeeping and reporting requirements specified in Section 219.211(c) of this Subpart except where noted. (Note: The equation presented in Section 219.206 of this Part shall be used to calculate emission limitations for determining compliance by add-on controls, credits for transfer efficiency, emissions trades and cross-line averaging.) The emission limitations are as follows:

a)	Automobile or Light-Duty Truck Coating	kg/l	lb/gal
	1) Prime coat	0.14 0.14*	(1.2) (1.2)*
	2) Primer surface coat	1.81 1.81*	(15.1) (15.1)*

(Note: The primer surface coat limitation is in units of kg (lbs) of

VOM per l (gal) of coating solids deposited. Compliance with the limitation shall be based on the daily-weighted average from an entire primer surface operation. Compliance shall be demonstrated in accordance with the topcoat protocol referenced in Section 219.105(b) and the recordkeeping and reporting requirements specified in Section 219.211(f). Testing to demonstrate compliance shall be performed in accordance with the topcoat protocol and a detailed testing proposal approved by the Agency and USEPA specifying the method of demonstrating compliance with the protocol. Section 219.205 does not apply to the primer surface limitation.)

		kg/l	lb/gal
3)	Topcoat	1.81	(15.1)
		1.81*	(15.1)*

(Note: The topcoat limitation is in units of kg (lbs) of VOM per l (gal) of coating solids deposited. Compliance with the limitation shall be based on the daily-weighted average from an entire topcoat operation. Compliance shall be demonstrated in accordance with the topcoat protocol referenced in Section 219.105(b) of this Part and the recordkeeping and reporting requirements specified in Section 219.211(f). Testing to demonstrate compliance shall be performed in accordance with the topcoat protocol and a detailed testing proposal approved by the Agency and USEPA specifying the method of demonstrating compliance with the protocol. Section 219.205 of this Part does not apply to the topcoat limitation.)

		kg/l	lb/gal
4)	Final repair coat	0.58	(4.8)
		0.58*	(4.8)*

b)	Can Coating	kg/l	lb/gal
1)	Sheet basecoat and overvarnish		
	A) Sheet basecoat	0.34	(2.8)
		0.26*	(2.2)*
	B) Overvarnish	0.34	(2.8)
		0.34	(2.8)*
2)	Exterior basecoat and overvarnish	0.34	(2.8)
		0.25*	(2.1)*
3)	Interior body spray coat		

	A)	Two piece	0.51	(4.2)
			0.44*	(3.7)*
	B)	Three piece	0.51	(4.2)
			0.51*	(4.2)*
	4)	Exterior end coat	0.51	(4.2)
			0.51*	(4.2)*
	5)	Side seam spray coat	0.66	(5.5)
			0.66*	(5.5)*
	6)	End sealing compound coat	0.44	(3.7)
			0.44*	(3.7)*
			<u>kg/l</u>	<u>lb/gal</u>
c)		Paper Coating	0.35	(2.9)
			0.28*	(2.3)*
	1)	<u>Prior to May 1, 2011:</u>	<u>kg/l</u>	<u>lb/gal</u>
			0.28	(2.3)
	2)	<u>On and after May 1, 2011:</u>		
			<u>kg VOM/kg</u>	<u>kg VOM/kg</u>
			<u>(lb VOM/lb)</u>	<u>(lb VOM/lb)</u>
			<u>solids applied</u>	<u>coatings applied</u>
	A)	<u>Pressure sensitive</u>		
		<u>tape and label surface</u>		
		<u>coatings</u>	0.20	(0.067)
	B)	<u>All other paper coatings</u>	0.40	(0.08)
<p>(Note: The paper coating limitation shall not apply to any owner or operator of any paper coating line on which flexographic or rotogravure printing is performed if the paper coating line complies with the emissions limitations in Section 219.401 of this Part. In addition, screen printing on paper is not regulated as paper coating, but is regulated under Subpart TT of this Part. <u>On and after May 1, 2011, the paper coating limitation shall also not apply to coating performed on or in-line with any digital printing press, or to size presses and on-machine coaters on papermaking machines applying sizing or water-based clays.</u>)</p>				
			<u>kg/l</u>	<u>lb/gal</u>
d)		Coil Coating	0.31	(2.6)

		0.20*	(1.7)*
e)	Fabric Coating	0.35	(2.9)
		0.28*	(2.3)*
f)	Vinyl Coating	0.45	(3.8)
		0.28*	(2.3)*
g)	Metal Furniture Coating		
	1) <u>Prior to May 1, 2011:</u>		
		<u>kg/l</u>	<u>lb/gal</u>
	A) <u>Air dried</u>	<u>0.34</u>	<u>(2.8)</u>
	B) <u>Baked</u>	<u>0.28</u>	<u>(2.3)</u>
	2) <u>On and after May 1, 2011:</u>		
		<u>kg/l</u>	<u>kg/l (lb/gal)</u>
		<u>(lb/gal)</u>	<u>solids applied</u>
	A) <u>General, One Component</u>	<u>0.275</u>	<u>0.40</u>
		<u>(2.3)</u>	<u>(3.3)</u>
	B) <u>General, Multi-Component</u>		
	i) <u>Air Dried</u>	<u>0.340</u>	<u>0.55</u>
		<u>(2.8)</u>	<u>(4.5)</u>
	ii) <u>Baked</u>	<u>0.275</u>	<u>0.40</u>
		<u>(2.3)</u>	<u>(3.3)</u>
	C) <u>Extreme High Gloss</u>		
	i) <u>Air Dried</u>	<u>0.340</u>	<u>0.55</u>
		<u>(2.8)</u>	<u>(4.5)</u>
	ii) <u>Baked</u>	<u>0.360</u>	<u>0.61</u>
		<u>(3.0)</u>	<u>(5.1)</u>
	D) <u>Extreme Performance</u>		
	i) <u>Air Dried</u>	<u>0.420</u>	<u>0.80</u>
		<u>(3.5)</u>	<u>(6.7)</u>
	ii) <u>Baked</u>	<u>0.360</u>	<u>0.61</u>
		<u>(3.0)</u>	<u>(5.1)</u>

<u>E)</u>	<u>Heat Resistant</u>		
	i) <u>Air Dried</u>	<u>0.420</u> <u>(3.5)</u>	<u>0.80</u> <u>(6.7)</u>
	ii) <u>Baked</u>	<u>0.360</u> <u>(3.0)</u>	<u>0.61</u> <u>(5.1)</u>
<u>F)</u>	<u>Metallic</u>	<u>0.420</u> <u>(3.5)</u>	<u>0.80</u> <u>(6.7)</u>
<u>G)</u>	<u>Pretreatment Coatings</u>	<u>0.420</u> <u>(3.5)</u>	<u>0.80</u> <u>(6.7)</u>
<u>H)</u>	<u>Solar Absorbent</u>		
	i) <u>Air Dried</u>	<u>0.420</u> <u>(3.5)</u>	<u>0.80</u> <u>(6.7)</u>
	ii) <u>Baked</u>	<u>0.360</u> <u>(3.0)</u>	<u>0.61</u> <u>(5.1)</u>
1) —	<u>Air dried</u>	<u>0.36</u> <u>0.34*</u>	<u>(3.0)</u> <u>(2.8)*</u>
2) —	<u>Baked</u>	<u>0.36</u> <u>0.28*</u>	<u>(3.0)</u> <u>(2.3)*</u>

(Note: On and after May 1, 2011, these limitations shall not apply to stencil coatings, safety-indicating coatings, solid-film lubricants, electric-insulating and thermal-conducting coatings, touch-up and repair coatings, or coating applications utilizing hand-held aerosol cans.)

3) On and after May 1, 2011, an owner or operator of a coating line subject to the limitations in subsection (g) of this Section shall apply all coatings using one or more of the following application methods:

A) Electrostatic spray;

B) High volume low pressure (HVLP) spray;

C) Flow coating. For the purposes of this subsection (g), flow coating means a non-atomized technique of applying

coating to a substrate with a fluid nozzle with no air supplied to the nozzle;

D) Roll coating;

E) Dip coating, including electrodeposition. For purposes of this subsection (g), electrodeposition means a water-borne dip coating process in which opposite electrical charges are applied to the substrate and the coating. The coating is attracted to the substrate due to the electrochemical potential difference that is created; or

F) Another coating application method capable of achieving a transfer efficiency equal to or better than that achieved by HVLP spraying, if such method is approved in writing by the Agency.

h) Large Appliance Coating

1) Prior to May 1, 2011:

	<u>kg/l</u>	<u>lb/gal</u>
A) <u>Air dried</u>	<u>0.34</u>	<u>(2.8)</u>
B) <u>Baked</u>	<u>0.28</u>	<u>(2.3)</u>

2) On and after May 1, 2011:

	<u>kg/l</u> <u>(lb/gal)</u>	<u>kg/l (lb/gal)</u> <u>solids applied</u>
A) <u>General, One Component</u>	<u>0.275</u> <u>(2.3)</u>	<u>0.40</u> <u>(3.3)</u>
B) <u>General, Multi-Component</u>		
i) <u>Air Dried</u>	<u>0.340</u> <u>(2.8)</u>	<u>0.55</u> <u>(4.5)</u>
ii) <u>Baked</u>	<u>0.275</u> <u>(2.3)</u>	<u>0.40</u> <u>(3.3)</u>
C) <u>Extreme High Gloss</u>		
i) <u>Air Dried</u>	<u>0.340</u> <u>(2.8)</u>	<u>0.55</u> <u>(4.5)</u>
ii) <u>Baked</u>	<u>0.360</u>	<u>0.61</u>

		<u>(3.0)</u>	<u>(5.1)</u>
D)	<u>Extreme Performance</u>		
	i) <u>Air Dried</u>	<u>0.420</u> <u>(3.5)</u>	<u>0.80</u> <u>(6.7)</u>
	ii) <u>Baked</u>	<u>0.360</u> <u>(3.0)</u>	<u>0.61</u> <u>(5.1)</u>
E)	<u>Heat Resistant</u>		
	i) <u>Air Dried</u>	<u>0.420</u> <u>(3.5)</u>	<u>0.80</u> <u>(6.7)</u>
	ii) <u>Baked</u>	<u>0.360</u> <u>(3.0)</u>	<u>0.61</u> <u>(5.1)</u>
F)	<u>Metallic</u>	<u>0.420</u> <u>(3.5)</u>	<u>0.80</u> <u>(6.7)</u>
G)	<u>Pretreatment Coatings</u>	<u>0.420</u> <u>(3.5)</u>	<u>0.80</u> <u>(6.7)</u>
H)	<u>Solar Absorbent</u>		
	i) <u>Air Dried</u>	<u>0.420</u> <u>(3.5)</u>	<u>0.80</u> <u>(6.7)</u>
	ii) <u>Baked</u>	<u>0.360</u> <u>(3.0)</u>	<u>0.61</u> <u>(5.1)</u>
1)	<u>Air dried</u>	<u>0.34</u> <u>0.34*</u>	<u>(2.8)</u> <u>(2.8)*</u>
2)	<u>Baked</u>	<u>0.34</u> <u>0.28*</u>	<u>(2.8)</u> <u>(2.3)*</u>

(Note: These limitations shall not apply to the use of quick-drying lacquers for repair of scratches and nicks that occur during assembly, provided that the volume of coating does not exceed 0.95 l (1 quart) in any one rolling eight-hour period. On and after May 1, 2011, these limitations shall also not apply to stencil coatings, safety-indicating coatings, solid-film lubricants, electric-insulating and thermal-conducting coatings, touch-up and repair coatings, or coating applications utilizing hand-held aerosol

cans.)

3) On and after May 1, 2011, an owner or operator of a coating line subject to the limitations in subsection (h) of this Section shall apply all coatings using one or more of the following application methods:

A) Electrostatic spray;

B) High volume low pressure (HVLP) spray;

C) Flow coating. For the purposes of this subsection (h), flow coating means a non-atomized technique of applying coating to a substrate with a fluid nozzle with no air supplied to the nozzle;

D) Roll coating;

E) Brush coating;

F) Dip coating, including electrodeposition. For purposes of this subsection (h), electrodeposition means a water-borne dip coating process in which opposite electrical charges are applied to the substrate and the coating. The coating is attracted to the substrate due to the electrochemical potential difference that is created; or

G) Another coating application method capable of achieving a transfer efficiency equal to or better than that achieved by HVLP spraying, if such method is approved in writing by the Agency.

		kg/l	lb/gal
i)	Magnet Wire Coating	0.20	(1.7)
		0.20*	(1.7)*
j)	Miscellaneous Metal Parts and Products Coating		
1)	Clear coating	0.52	(4.3)
		0.52*	(4.3)*
2)	Extreme performance coating		
A)	Air dried	0.42	(3.5)
		0.42*	(3.5)*

	B)	Baked	0.42 0.40*	(3.5) (3.3)*
3)		Steel pail and drum interior coating	0.52 0.52*	(4.3) (4.3)*
4)		All other coatings		
	A)	Air Dried	0.42 0.40*	(3.5) (3.3)*
	B)	Baked	0.36 0.34*	(3.0) (2.8)*
5)		Metallic Coating		
	A)	Air Dried	0.42 0.42*	(3.5) (3.5)*
	B)	Baked	0.36 0.36	(3.0) (3.0)*
6)		For purposes of subsection 219.204(j)(5) of this Section, "metallic coating" means a coating which contains more than 1/4 lb/gal of metal particles, as applied.		
k)		Heavy Off-Highway Vehicle Products Coating	kg/l	lb/gal
	1)	Extreme performance prime coat	0.42 0.42*	(3.5) (3.5)*
	2)	Extreme performance topcoat (air dried)	0.42 0.42*	(3.5) (3.5)*
	3)	Final repair coat (air dried)	0.42 0.42*	(3.5) (3.5)*
	4)	All other coatings are subject to the emission limitations for miscellaneous metal parts and products coatings in subsection (j) above.		
l)		Wood Furniture Coating		

1)	Limitations before March 15, 1998:	kg/l	lb/gal
	A) Clear topcoat	0.67	(5.6)
	B) Opaque stain	0.56	(4.7)
	C) Pigmented coat	0.60	(5.0)
	D) Repair coat	0.67	(5.6)
	E) Sealer	0.67	(5.6)
	F) Semi-transparent stain	0.79	(6.6)
	G) Wash coat	0.73	(6.1)

(Note: Prior to March 15, 1998, an owner or operator of a wood furniture coating operation subject to this Section shall apply all coatings, with the exception of no more than 37.8 l (10 gal) of coating per day used for touch-up and repair operations, using one or more of the following application systems: airless spray application system, air-assisted airless spray application system, electrostatic spray application system, electrostatic bell or disc spray application system, heated airless spray application system, roller coating, brush or wipe coating application system, dip coating application system or high volume low pressure (HVLV) application system.)

2) On and after March 15, 1998, wood furniture sealers and topcoats must comply with one of the limitations specified in subsections (1)(2)(A) through (E), below:

		kg VOM/kg solids	lb VOM/lb solids
A)	Topcoat	0.8	(0.8)
B)	Sealers and topcoats with the following limits:		
	i) Sealer other than acid-cured alkyd amino vinyl sealer	1.9	(1.9)

ii)	Topcoat other than acid-cured alkyd amino conversion varnish topcoat	1.8	(1.8)
iii)	Acid-cured alkyd amino vinyl sealer	2.3	(2.3)
iv)	Acid-cured alkyd amino conversion varnish topcoat	2.0	(2.0)

- C) Meet the provisions of Section 219.215 of this Subpart for use of an averaging approach;
- D) Achieve a reduction in emissions equivalent to the requirements of Section 219.204(1)(2)(A) or (B) of this Subpart, as calculated using Section 219.216 of this Subpart; or
- E) Use a combination of the methods specified in Section 219.204(1)(2)(A) through (D) of this Subpart.

3) Other wood furniture coating limitations on and after March 15, 1998:

		kg/l	lb/gal
A)	Opaque stain	0.56	(4.7)
B)	Non-topcoat pigmented coat	0.60	(5.0)
C)	Repair coat	0.67	(5.6)
D)	Semi-transparent stain	0.79	(6.6)
E)	Wash coat	0.73	(6.1)

4) Other wood furniture coating requirements on and after March 15, 1998:

- A) No source subject to the limitations of subsection (1)(2) or (3) of this Section and utilizing one or more wood furniture coating spray booths shall use strippable spray booth coatings containing more than 0.8 kg VOM/kg solids (0.8 lb VOM/lb solids), as applied.

- B) Any source subject to the limitations of subsection (1)(2) or (3) of this Section shall comply with the requirements of Section 219.217 of this Subpart.
- C) Any source subject to the limitations of subsection (1)(2)(A) or (B) of this Section and utilizing one or more continuous coaters, shall for each continuous coater, use an initial coating which complies with the limitations of subsection (1)(2)(A) or (B) of this Section. The viscosity of the coating in each reservoir shall always be greater than or equal to the viscosity of the initial coating in the reservoir. The owner or operator shall:
 - i) Monitor the viscosity of the coating in the reservoir with a viscosity meter or by testing the viscosity of the initial coating and retesting the coating in the reservoir each time solvent is added;
 - ii) Collect and record the reservoir viscosity and the amount and weight of VOM per weight of solids of coating and solvent each time coating or solvent is added; and
 - iii) Maintain these records at the source for a period of three years.

m)	Plastic Parts Coating: Automotive/Transportation	kg/l	lb/gal
	1) Interiors		
	A) Baked		
	i) Color coat	0.49*	(4.1)*
	ii) Primer	0.46*	(3.8)*
	B) Air Dried		
	i) Color coat	0.38*	(3.2)*
	ii) Primer	0.42*	(3.5)*
	2) Exteriors (flexible and non-flexible)		
	A) Baked		

	i)	Primer	0.60*	(5.0)*
	ii)	Primer non-flexible	0.54*	(4.5)*
	iii)	Clear coat	0.52*	(4.3)*
	iv)	Color coat	0.55*	(4.6)*
	B)	Air Dried		
	i)	Primer	0.66*	(5.5)*
	ii)	Clear coat	0.54*	(4.5)*
	iii)	Color coat (red & black)	0.67*	(5.6)*
	iv)	Color coat (others)	0.61*	(5.1)*
3)		Specialty		
	A)	Vacuum metallizing basecoats, texture basecoats	0.66*	(5.5)*
	B)	Black coatings, reflective argent coatings, air bag cover coatings, and soft coatings	0.71*	(5.9)*
	C)	Gloss reducers, vacuum metallizing topcoats, and texture topcoats	0.77*	(6.4)*
	D)	Stencil coatings, adhesion primers, ink pad coatings, electrostatic prep coatings, and resist coatings	0.82*	(6.8)*
	E)	Head lamp lens coatings	0.89*	(7.4)*
n)		Plastic Parts Coating: Business Machine	kg/l	lb/gal
	1)	Primer	0.14*	(1.2)*

2)	Color coat (non-texture coat)	0.28*	(2.3)*
3)	Color coat (texture coat)	0.28*	(2.3)*
4)	Electromagnetic interference/radio frequency interference (EMI/RFI) shielding coatings	0.48*	(4.0)*
5)	Specialty Coatings		
A)	Soft coat	0.52*	(4.3)*
B)	Plating resist	0.71*	(5.9)*
C)	Plating sensitizer	0.85*	(7.1)*

(Source: Amended at ___Ill. Reg. ____, effective____)

Section 219.205 Daily-Weighted Average Limitations

No owner or operator of a coating line subject to the limitations of Section 219.204 of this Subpart and complying by means of this Section shall operate the subject coating line unless the owner or operator has demonstrated compliance with subsection (a), (b), (c), (d), (e), (f), (g), ~~(h)~~, or (i) of this Section (depending upon the category of coating) through the applicable coating analysis test methods and procedures specified in Section 219.105(a) of this Part and the recordkeeping and reporting requirements specified in Section 219.211(d) of this Subpart:

- a) No owner or operator of a coating line subject to only one of the limitations from among Section 219.204(a)(1), (a)(4), ~~(e)~~, (d), (e), (f), ~~(i)~~, or, prior to May 1, 2011, (c) of this Subpart shall apply coatings on any such coating line, during any day, whose daily-weighted average VOM content exceeds the emission limitation to which the coatings are subject.
- b) No owner or operator of a miscellaneous metal parts and products coating line subject to the limitations of Section 219.204(j) of this Subpart shall apply coatings to miscellaneous metal parts or products on the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met.
 - 1) For each coating line which applies multiple coatings, all of which are subject to the same numerical emission limitation within Section 219.204(j) of this Subpart during the same day (e.g., all coatings used on the line are subject to 0.42 kg/l (3.5 lbs/gal), the daily-weighted average VOM content shall not exceed the coating

VOM content limit corresponding to the category of coating used,
or

- 2) For each coating line which applies coatings subject to more than one numerical emission limitation in Section 219.204(j) of this Subpart, during the same day, the owner or operator shall have a site-specific proposal approved by the Agency and approved by the USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy) 51 Fed. Reg. 43814 (December 4, 1986), must be satisfied.
- c) No owner or operator of a can coating line subject to the limitations of Section 219.204(b) of this Subpart shall operate the subject coating line using a coating with a VOM content in excess of the limitations specified in Section 219.204(b) of this Subpart unless all of the following requirements are met:
 - 1) An alternative daily emission limitation for the can coating operation, i.e. for all of the can coating lines at the source, shall be determined according to subsection (c)(2) of this Section. Actual daily emissions shall never exceed the alternative daily emission limitation and shall be calculated by use of the following equation.

$$E_d = \sum_{i=1}^n V_i C_i$$

where:

E_d = Actual VOM emissions for the day in units of kg/day (lbs/day);

i = Subscript denoting a specific coating applied;

n = Total number of coatings applied in the can coating operation, i.e. all can coating lines at the source;

V_i = Volume of each coating applied for the day in units of l/day (gal/day) of coating (minus water and any compounds which are specifically exempted from the definition of VOM);

C_i = The VOM content of each coating as applied in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM).

- 2) The alternative daily emission limitation (A_d) shall be determined for the can coating operation, i.e. for all of the can coating lines at the source, on a daily basis as follows:

$$A_d = \sum_{i=1}^n V_i L_i \frac{(D_i - C_i)}{(D_i - L_i)}$$

where:

A_d = The VOM emissions allowed for the day in units of kg/day (lbs/day);

i = Subscript denoting a specific coating applied;

n = Total number of surface coatings applied in the can coating operation;

C_i = The VOM content of each surface coating as applied in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM);

D_i = The density of VOM in each coating applied. For the purposes of calculating A_d , the density is 0.882 kg VOM/l VOM (7.36 lbs VOM/gal VOM);

V_i = Volume of each surface coating applied for the day in units of l (gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM);

L_i = The VOM emission limitation for each surface coating applied as specified in Section 219.204(b) of this Subpart in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM).

- d) No owner or operator of a heavy off-highway vehicle products coating line subject to the limitations of Section 219.204(k) of this Subpart shall apply coatings to heavy off-highway vehicle products on the subject coating line unless the requirements of subsection (d)(1) or (d)(2) of this Section are met.
- 1) For each coating line which applies multiple coatings, all of which are subject to the same numerical emission limitation within

Section 219.204(k) of this Subpart, during the same day (e.g., all coatings used on the line are subject to 0.42 kg/l (3.5 lbs/gal), the daily-weighted average VOM content shall not exceed the coating VOM content limit corresponding to the category of coating used, or

- 2) For each coating line which applies coatings subject to more than one numerical emission limitation in Section 219.204(k) of this Subpart, during the same day, the owner or operator shall have a site specific proposal approved by the Agency and approved by the USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy) 51 Fed. Reg. 43814 (December 4, 1986), must be satisfied.
- e) No owner or operator of a wood furniture coating line subject to the limitations of Section 219.204(l)(1) or (l)(3) of this Subpart shall apply coatings to wood furniture on the subject coating line unless the requirements of subsection (e)(1) or (e)(2) of this Section, in addition to the requirements specified in the note to Section 219.204(l)(1) of this Subpart, are met.
- 1) For each coating line which applies multiple coatings, all of which are subject to the same numerical emission limitation within Section 219.204(l)(1) or (l)(3) of this Subpart, during the same day (e.g., all coatings used on the line are subject to 0.67 kg/l (5.6 lbs/gal), the daily-weighted average VOM content shall not exceed the coating VOM content limit corresponding to the category of coating used, or
 - 2) For each coating line which applies coatings subject to more than one numerical emission limitation in Section 219.204(l)(1) or (l)(3) of this Subpart, during the same day, the owner or operator shall have a site specific proposal approved by the Agency and approved by the USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy) 51 Fed. Reg. 43814 (December 4, 1986), must be satisfied.
- f) No owner or operator of a plastic parts coating line subject to the limitations of Section 219.204(m) or (n) of this Subpart shall apply coatings to business machine or automotive/transportation plastic parts on the subject coating line unless the requirements of subsection (f)(1) or (f)(2) of this Section are met.
- 1) For each coating line which applies multiple coatings, all of which are subject to the same numerical emission limitation within

Section 219.204(m) or (n) of this Subpart, during the same day (e.g., all coatings used on the line are subject to 0.42 kg/l (3.5 lbs/gal)), the daily-weighted average VOM content shall not exceed the coating VOM content limit corresponding to the category of coating used, or

- 2) For each coating line which applies coatings subject to more than one numerical emission limitation in Section 219.204(m) or (n) of this Subpart, during the same day, the owner or operator shall have a site specific proposal approved by the Agency and USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy) must be satisfied.
- g) No owner or operator of a metal furniture coating line subject to the limitations of Section 219.204(g) of this Subpart shall apply coatings on the subject coating line unless the requirements of subsection (g)(1) or (g)(2) of this Section are met:
- 1) For each coating line which applies multiple coatings, all of which are subject to the same numerical emission limitation within Section 219.204(g) of this Subpart, during the same day (e.g., all coatings used on the line are subject to 0.34 kg/l (2.8 lbs/gal)), the daily-weighted average VOM content shall not exceed the coating VOM content limit corresponding to the category of coating used, or
 - 2) For each coating line which applies coatings subject to more than one numerical emission limitation in Section 219.204(g) of this Subpart, during the same day, the owner or operator shall have a site specific proposal approved by the Agency and USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy) must be satisfied.
- h) No owner or operator of a large appliance coating line subject to the limitations of Section 219.204(h) of this Subpart shall apply coatings on the subject coating line unless the requirements of subsection (h)(1) or (h)(2) of this Section are met.
- 1) For each coating line which applies multiple coatings, all of which are subject to the same numerical emission limitation within Section 219.204(h) of this Subpart, during the same day (e.g., all coatings used on the line are subject to 0.34 kg/l (2.8 lbs/gal)), the daily-weighted average VOM content shall not exceed the coating VOM content limit corresponding to the category of coating used,

or

- 2) For each coating line which applies coatings subject to more than one numerical emission limitation in Section 219.204(h) of this Subpart, during the same day, the owner or operator shall have a site specific proposal approved by the Agency and USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy) must be satisfied.
- i) On and after May 1, 2011, no owner or operator of a paper coating line subject to the limitations of Section 219.204(c) of this Subpart shall apply coatings on the subject coating line unless the requirements in subsection (i)(1) or (i)(2) of this Section are met:
- 1) For each coating line which applies multiple coatings, all of which are subject to the same numerical emission limitation within Section 219.204(c) during the same day (e.g., all coatings used on the line are subject to 0.40 kg/kg solids [0.08 kg/kg coatings]), the daily-weighted average VOM content shall not exceed the coating VOM content limit corresponding to the category of coating used;
or
 - 2) For each coating line which applies coatings subject to more than one numerical emission limitation in Section 219.204(c) during the same day, the owner or operator shall have a site-specific proposal approved by the Agency and approved by the USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy), 51 Fed. Reg. 43814 (December 4, 1986), must be satisfied.

(Source: Amended at __ Ill. Reg. _____, effective _____)

Section 219.207 Alternative Emission Limitations

- a) Any owner or operator of a coating line subject to Section 219.204 of this Subpart may comply with this Section, rather than with Section 219.204 of this Subpart, if a capture system and control device are operated at all times the coating line is in operation and the owner or operator demonstrates compliance with subsection (c), (d), (e), (f), (g), (h), (i), ~~or~~ (j), or (k) of this Section (depending upon the source category) through the applicable coating analysis and capture system and control device efficiency test methods and procedures specified in Section 219.105 of this Part and the recordkeeping and reporting requirements specified in Section 219.211(e) of this Subpart; and the control device is equipped with the applicable monitoring equipment specified in Section 219.105(d) of

this Part and the monitoring equipment is installed, calibrated, operated and maintained according to vendor specifications at all times the control device is in use. A capture system and control device, which does not demonstrate compliance with subsection (c), (d), (e), (f), (g), (h), (i), (j), or (k) of this Section may be used as an alternative to compliance with Section 219.204 of this Subpart only if the alternative is approved by the Agency and approved by the USEPA as a SIP revision.

- b) Alternative Add-On Control Methodologies
- 1) The coating line is equipped with a capture system and control device that provides 81 percent reduction in the overall emissions of VOM from the coating line and the control device has a 90 percent efficiency, or
 - 2) The system used to control VOM from the coating line is demonstrated to have an overall efficiency sufficient to limit VOM emissions to no more than what is allowed under Section 219.204 of this Subpart. Use of any control system other than an afterburner, carbon adsorption, condensation, or absorption scrubber system can be allowed only if approved by the Agency and approved by the USEPA as a SIP revision. The use of transfer efficiency credits can be allowed only if approved by the Agency and approved by the USEPA as a SIP revision. Baseline transfer efficiencies and transfer efficiency test methods must be approved by the Agency and the USEPA. Such overall efficiency is to be determined as follows:
 - A) Obtain the emission limitation from the appropriate subsection in Section 219.204 of this Subpart;
 - B) Calculate "S" according to the equation in Section 219.206 of this Subpart;
 - C) Calculate the overall efficiency required according to Section 219.105(e) of this Part. For the purposes of calculating this value, according to the equation in Section 219.105(e)(2) of this Part, VOM_1 is equal to the value of "S" as determined above in subsection (b)(2)(B) of this Section.
- c) No owner or operator of a coating line subject to only one of the emission limitations from among Section 219.204(a)(1), (a)(4), ~~(e)~~, (d), (e), (f), or (i), or, prior to May 1, 2011, (c) of this Subpart and equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are

met. No owner or operator of a coating line subject to Section 219.204(a)(2) or (a)(3) of this Part and equipped with a capture system and control device shall operate the coating line unless the owner or operator demonstrates compliance with such limitation in accordance with the topcoat protocol referenced in Section 219.105(b) of this Part.

- d) No owner or operator of a miscellaneous metal parts and products coating line which applies one or more coatings during the same day, all of which are subject to the same numerical emission limitation within Section 219.204(j) of this Subpart (e.g., all coatings used on the line are subject to 0.42 kg/1 [3.5 lbs/gal], and which is equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met.
- e) No owner or operator of a heavy off-highway vehicle products coating line which applies one or more coatings during the same day, all of which are subject to the same numerical emission limitation within Section 219.204(k) of this Subpart (e.g., all coatings used on the line are subject to 0.42 kg/1 [3.5 lbs/gal]), and which is equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met.
- f) No owner or operator of a wood furniture coating line which applies one or more coatings during the same day, all of which are subject to the same numerical emission limitation within Section 219.204(l) of this Subpart (e.g., all coatings used on the line are subject to 0.67 kg/1 [5.6 lbs/gal]), and which is equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met. If compliance is achieved by meeting the requirements in subsection (b)(2) of this Section, then the provisions in the note to Section 219.204(l) of this Subpart must also be met.
- g) No owner or operator of a can coating line and equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (g)(1) or (g)(2) of this Section are met.
 - 1) An alternative daily emission limitation for the can coating operation, i.e. for all of the can coating lines at the source, shall be determined according to Section 219.205(c)(2) of this Subpart. Actual daily emissions shall never exceed the alternative daily emission limitation and shall be calculated by use of the following equation:

$$E_d = \sum_{i=1} V_i C_i (1-F_i)$$

where:

E_d = Actual VOM emissions for the day in units of kg/day (lbs/day);

i = Subscript denoting the specific coating applied;

n = Total number of surface coatings as applied in the can coating operation;

V_i = Volume of each coating as applied for the day in units of l/day (gal/day) of coating (minus water and any compounds which are specifically exempted from the definition of VOM);

C_i = The VOM content of each coating as applied in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM) and

F_i = Fraction, by weight, of VOM emissions from the surface coating, reduced or prevented from being emitted to the ambient air. This is the overall efficiency of the capture system and control device.

- 2) The coating line is equipped with a capture system and control device that provide 75 percent reduction in the overall emissions of VOM from the coating line and the control device has a 90 percent efficiency.
- h) No owner or operator of a plastic parts coating line which applies one or more coatings during the same day, all of which are subject to the same numerical emission limitation within Section 219.204(m) or (n) of this Subpart (e.g., all coatings used on the line are subject to 0.42 kg/l [3.5 lbs/gal]), and which is equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met.
 - i) Prior to May 1, 2011, no owner or operator of a metal furniture coating line which applies one or more coatings during the same day, all of which are subject to the same numerical emission limitation within Section 219.204(g) of this Subpart (e.g., all coatings used on the line are subject to 0.34 kg/l [2.8 lbs/gal]), and which is equipped with a capture system and

control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met.

- j) Prior to May 1, 2011, no owner or operator of a large appliance coating line which applies one or more coatings during the same day, all of which are subject to the same numerical emission limitation within Section 219.204(h) of this Subpart (e.g., all coatings used on the line are subject to 0.34 kg/l [2.8 lbs/gal]), and which is equipped with a capture system and control device shall operate the subject coating line unless the requirements in subsection (b)(1) or (b)(2) of this Section are met.
- k) On and after May 1, 2011, no owner or operator of a paper coating line, metal furniture coating line, or large appliance coating line which is equipped with a capture system and control device shall operate the subject coating line unless either:
- 1) The capture system and control device provide at least 90 percent reduction in the overall emissions of VOM from the coating line;
or
 - 2) The owner or operator complies with the applicable limitation set forth in Section 219.204 of this Subpart by utilizing a combination of low-VOM coatings and a capture system and control device.

(Source: Amended at __Ill. Reg. ____, effective____)

Section 219.210 Compliance Schedule

Every owner or operator of a coating line (of a type included within Section 219.204 of this Subpart) shall comply with the requirements of Section 219.204, 219.205, 219.207 or 219.208 and Section 219.211 or Sections 219.212 and 219.213 of this Subpart in accordance with the appropriate compliance schedule as specified in subsection (a), (b), (c), (d), (e), ~~or (f)~~, or (g) below:

- a) No owner or operator of a coating line which is exempt from the limitations of Section 219.204 of this Subpart because of the criteria in Section 219.208(a) or (b) of this Subpart shall operate said coating line on or after a date consistent with Section 219.106 of this Part, unless the owner or operator has complied with, and continues to comply with, Section 219.211(b) of this Subpart.
- b) No owner or operator of a coating line complying by means of Section 219.204 of this Subpart shall operate said coating line on or after a date consistent with Section 219.106 of this Part, unless the owner or operator has complied with, and continues to comply with, Sections 219.204 and 219.211(c) of this Subpart.

- c) No owner or operator of a coating line complying by means of Section 219.205 of this Subpart shall operate said coating line on or after a date consistent with Section 219.106 of this Part, unless the owner or operator has complied with, and continues to comply with, Sections 219.205 and 219.211(d) of this Subpart.
- d) No owner or operator of a coating line complying by means of Section 219.207 of this Subpart shall operate said coating line on or after a date consistent with Section 219.106 of this Part, unless the owner or operator has complied with, and continues to comply with, Sections 219.207 and 219.211(e) of this Subpart.
- e) No owner or operator of a coating line subject to one or more of the emission limitations contained in Section 219.204 of this Subpart on or after March 15, 1996, choosing to comply by means of Section 219.204, 219.205 or 219.207 of this Subpart, shall operate said coating line on or after March 15, 1996, unless the owner or operator complies with and continues to comply with, respectively, the applicable requirements in Section 219.204, or the alternative control options in Sections 219.205 or 219.207 and the requirements of Section 219.211.
- f) No owner or operator of a coating line subject to one or more of the emission limitations contained in Section 219.204 of this Subpart on or after March 15, 1996, choosing to comply by means of Section 219.212 of this Subpart, shall operate said coating line on or after March 15, 1996, unless the owner or operator complies with and continues to comply with the requirements of Sections 219.212 and 219.213 of this Subpart.
- g) No owner or operator of a coating line subject to the emission limitations in Section 219.204(c)(2), 219.204(g)(2), or 219.204(h)(2) of this Subpart shall operate said coating line on or after a date consistent with Section 219.106(c) of this Part, unless the owner or operator has complied with, and continues to comply with, Section 219.204(c)(2), 219.204(g)(2), or 219.204(h)(2), as applicable, or the alternative control options in Section 219.205 or 219.207, and all applicable requirements in Sections 219.211 and 219.218 of this Subpart.

(Source: Amended at ___ Ill. Reg. _____, effective _____)

Section 219.211 Recordkeeping and Reporting

- a) The VOM content of each coating and the efficiency of each capture system and control device shall be determined by the applicable test methods and procedures specified in Section 219.105 of this Part to

establish the records required under this Section.

- b) Any owner or operator of a coating line which is exempt from the limitations of Section 219.204 of this Subpart because of Section 219.208(a) or (b) of this Subpart shall comply with the following:
- 1) For sources exempt from Section 219.208(a) of this Subpart, by a date consistent with Section 219.106 of this Part, the owner or operator of a coating line or group of coating lines referenced in subsection (b) of this Section shall certify to the Agency that the coating line or group of coating lines is exempt under the provisions of Section 219.208(a) of this Subpart. Such certification shall include:
 - A) A declaration that the coating line is exempt from the limitations of Section 219.204 of this Subpart because of Section 219.208(a) of this Subpart; and
 - B) Calculations which demonstrate that the combined VOM emissions from the coating line and all other coating lines in the same category never exceed 6.8 kg (15 lbs) per day before the application of capture systems and control devices. The following equation shall be used to calculate total VOM emissions:

$$T_e = \sum_{j=1}^m \sum_{i=1}^n (A_i B_i)_j$$

where:

T_e = Total VOM emissions from coating lines each day before the application of capture systems and control devices in units of kg/day (lbs/day);

m = Number of coating lines at the source that otherwise would be subject to the same subsection of Section 219.104 of this Part (because they belong to the same category, e.g., can coating);

j = Subscript denoting an individual coating line;

n = Number of different coatings as applied each day on each coating line;

i = Subscript denoting an individual coating;

A_i = Weight of VOM per volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line in units of kg VOM/l (lbs VOM/gal);

B_i = Volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line in units of l/day (gal/day). The instrument or method by which the owner or operator accurately measured or calculated the volume of each coating as applied on each coating line each day shall be described in the certification to the Agency.

- 2) For sources exempt under Section 219.208(b) of this Subpart, by March 15, 1998, or upon initial start-up, the owner or operator of a coating line or a group of coating lines referenced in subsection (b) of this Section shall certify to the Agency that the source is exempt under the provisions of Section 219.208(b) of this Subpart. Such certification shall include:
 - A) A declaration that the source is exempt from the limitations of Section 219.204(l) of this Subpart because of Section 219.208(b) of this Subpart; and
 - B) Calculations which demonstrate that the source meets the criteria of exemption because of Section 219.208(b) of this Subpart.

- 3) For sources exempt under Section 219.208(a) of this Subpart, on and after a date consistent with Section 219.106 of this Part, the owner or operator of a coating line or group of lines referenced in this subsection shall collect and record all of the following information each day for each coating line and maintain the information at the source for a period of three years:
 - A) The name and identification number of each coating as applied on each coating line; and
 - B) The weight of VOM per volume and the volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line.

- 4) For sources exempt under Section 219.208(b) of this Subpart, on and after March 15, 1998, the owner or operator of a coating line or group of coating lines referenced in this subsection (b) shall collect and record all of the following information for each coating line and maintain the information at the source for a period of three years:
 - A) The name and identification number of each coating as applied on each coating line; and
 - B) The weight of VOM per volume and the volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied on each coating line on a monthly basis.
 - 5) On and after a date consistent with Section 219.106 of this Part, the owner or operator of a coating line or group of coating lines exempted from the limitations of Section 219.204 of this Subpart because of Section 219.208(a) of this Subpart shall notify the Agency of any record showing that total VOM emissions from the coating line or group of coating lines exceed 6.8 kg (15 lbs) in any day before the application of capture systems and control devices by sending a copy of such record to the Agency within 30 days after the exceedance occurs.
 - 6) On and after March 15, 1998, any owner or operator of a source exempt from the limitations of Section 219.204(l) of this Subpart because of Section 219.208(b) of this Subpart shall notify the Agency if the source's VOM emissions exceed the limitations of Section 219.208(b) of this Subpart by sending a copy of calculations showing such an exceedance within 30 days after the change occurs.
- c) Any owner or operator of a coating line subject to the limitations of Section 219.204 of this Subpart other than Section 219.204(a)(2) and (a)(3) of this Subpart and complying by means of Section 219.204 of this Subpart shall comply with the following:
- 1) By a date consistent with Section 219.106 of this Part, or upon initial start-up of a new coating line, or upon changing the method of compliance from an existing subject coating line from Section 219.205, Section 219.207, Section 219.215, or Section 219.216 of this Subpart to Section 219.204 of this Subpart; the owner or operator of a subject coating line shall certify to the Agency that the coating line will be in compliance with Section 219.204 of this Subpart on and after a date consistent with Section 219.106 of this

Part, or on and after the initial start-up date. Such certification shall include:

- A) The name and identification number of each coating as applied on each coating line;
 - B) The weight of VOM per volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line; ~~and~~
 - C) On and after March 15, 1998, for coating lines subject to the limitations of Section 219.204(l)(2)(A) or (B) of this Subpart, the weight of VOM per weight of solids in each coating as applied each day on each coating line; ~~-~~
 - D) For coating lines subject to the limitations of Section 219.204(c)(2) of this Subpart, the weight of VOM per weight of solids (or the weight of VOM per weight of coatings, as applicable) in each coating as applied each day on each coating line; and
 - E) For coating lines subject to the limitations of Section 219.204(g)(2) or 219.204(h)(2) of this Subpart, the application method(s) used to apply coatings on the subject coating line and the weight of VOM per volume of each coating (or the weight of VOM per volume of solids in each coating, as applicable) as applied each day on each coating line.
- 2) On and after a date consistent with Section 219.106 of this Part, or on and after the initial start-up date, the owner or operator of a subject coating line shall collect and record all of the following information each day for each coating line and maintain the information at the source for a period of three years:
- A) The name and identification number of each coating as applied on each coating line;
 - B) The weight of VOM per volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line;
 - C) On and after March 15, 1998, for coating lines subject to the limitations of Section 219.204(l)(2)(A) or (B) of this

Subpart, the weight of VOM per weight of solids in each coating as applied each day on each coating line and certified product data sheets for each coating; ~~and~~

- D) On and after March 15, 1998, for wood furniture coating spray booths subject to the limitation of Section 219.204(l)(4)(A) of this Subpart, the weight of VOM per weight of solids in each strippable spray booth coating as applied each day on each spray booth and certified product data sheets for each coating;-
 - E) For coating lines subject to the limitations of Section 219.204(c)(2) of this Subpart, the weight of VOM per weight of solids (or the weight of VOM per weight of coatings, as applicable) in each coating as applied each day on each coating line, and certified product data sheets for each coating; and
 - F) For coating lines subject to the limitations of Section 219.204(g)(2) or 219.204(h)(2) of this Subpart, the weight of VOM per volume of each coating (or the weight of VOM per volume of solids in each coating, as applicable) as applied each day on each coating line, and certified product data sheets for each coating.
- 3) On and after a date consistent with Section 219.106 of this Part, the owner or operator of a subject coating line shall notify the Agency in the following instances:
- A) Any record showing violation of Section 219.204 of this Subpart shall be reported by sending a copy of such record to the Agency within 30 days following the occurrence of the violation.
 - B) At least 30 calendar days before changing the method of compliance from Section 219.204 to Section 219.205 or Section 219.207 of this Subpart, the owner or operator shall comply with all requirements of subsection (d)(1) or (e)(1) below, respectively. Upon changing the method of compliance from Section 219.204 to Section 219.205 or Section 219.207 of this Subpart, the owner or operator shall comply with all requirements of subsection (d) or (e) of this Section, respectively.
- d) Any owner or operator of a coating line subject to the limitations of Section 219.204 of this Subpart and complying by means of Section

219.205 of this Subpart shall comply with the following:

- 1) By a date consistent with Section 219.106 of this Part, or upon initial start-up of a new coating line, or upon changing the method of compliance for an existing subject coating line from Section 219.204 or Section 219.207 to Section 219.205 of this Subpart; the owner or operator of the subject coating line shall certify to the Agency that the coating line will be in compliance with Section 219.205 on and after a date consistent with Section 219.106 of this Part, or on and after the initial start-up date. Such certification shall include:
 - A) The name and identification number of each coating line which will comply by means of Section 219.205 of this Subpart.
 - B) The name and identification number of each coating as applied on each coating line.
 - C) The weight of VOM per volume and the volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line.
 - D) On and after March 15, 1998, for coating lines subject to the limitations of Section 219.204(l)(2)(A) or (B) of this Subpart, the weight of VOM per weight of solids in each coating as applied each day on each coating line.
 - E) For coating lines subject to the limitations of Section 219.204(c)(2) of this Subpart, the weight of VOM per weight of solids (or the weight of VOM per weight of coatings, as applicable) in each coating as applied each day on each coating line.
 - F) For coating lines subject to the limitations of Section 219.204(g)(2) or 219.204(h)(2) of this Subpart, the weight of VOM per volume of each coating (or the weight of VOM per volume of solids in each coating, as applicable) as applied each day on each coating line.
 - GE) The instrument or method by which the owner or operator will accurately measure or calculate the volume of each coating as applied each day on each coating line.
 - HF) The method by which the owner or operator will create and

maintain records each day as required in subsection (d)(2) of this Section.

~~I~~G) An example of the format in which the records required in subsection (d)(2) of this Section will be kept.

2) On and after a date consistent with Section 219.106 of this Part, or on and after the initial start-up date, the owner or operator of a subject coating line shall collect and record all of the following information each day for each coating line and maintain the information at the source for a period of three years:

A) The name and identification number of each coating as applied on each coating line.

B) The weight of VOM per volume and the volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line.

C) On and after March 15, 1998, for coating lines subject to the limitations of Section 219.204(l)(2)(A) or (B) of this Subpart, the weight of VOM per weight of solids in each coating as applied each day on each coating line.

~~D~~) For coating lines subject to the limitations of Section 219.204(c)(2) of this Subpart, the weight of VOM per weight of solids (or the weight of VOM per weight of coatings, as applicable) in each coating as applied each day on each coating line.

~~E~~) For coating lines subject to the limitations of Section 219.204(g)(2) or 219.204(h)(2) of this Subpart, the weight of VOM per volume of each coating (or the weight of VOM per volume of solids in each coating, as applicable) as applied each day on each coating line.

~~F~~D) The daily-weighted average VOM content of all coatings as applied on each coating line as defined in Section 219.104 of this Part.

3) On and after a date consistent with Section 219.106 of this Part, the owner or operator of a subject coating line shall notify the Agency in the following instances:

A) Any record showing violation of Section 219.205 of this

Subpart shall be reported by sending a copy of such record to the Agency within 30 days following the occurrence of the violation.

- B) At least 30 calendar days before changing the method of compliance with this Subpart from Section 219.205 to Section 219.204 or Section 219.207 of this Subpart, the owner or operator shall comply with all requirements of subsection (c)(1) or (e)(1) of this Section, respectively. Upon changing the method of compliance with this Subpart from Section 219.205 to Section 219.204 or Section 219.207 of this Subpart, the owner or operator shall comply with all requirements of subsection (c) or (e) of this Section, respectively.
- e) Any owner or operator of a coating line subject to the limitations of Section 219.207 and complying by means of Section 219.207(c), (d), (e), (f), (g), ~~or (h)~~, or (k) of this Subpart shall comply with the following:
 - 1) By a date consistent with Section 219.106 of this Part, or upon initial start-up of a new coating line, or upon changing the method of compliance for an existing coating line from Section 219.204 or Section 219.205 to Section 219.207 of this Subpart, the owner or operator of the subject coating line shall perform all tests and submit to the Agency the results of all tests and calculations necessary to demonstrate that the subject coating line will be in compliance with Section 219.207 of this Subpart on and after a date consistent with Section 219.106 of this Part, or on and after the initial start-up date.
 - 2) On and after a date consistent with Section 219.106 of this Part, or on and after the initial start-up date, the owner or operator of a subject coating line shall collect and record all of the following information each day for each coating line and maintain the information at the source for a period of three years:
 - A) The weight of VOM per volume of coating solids as applied each day on each coating line, if complying pursuant to Section 219.207(b)(2) of this Subpart.
 - B) Control device monitoring data.
 - C) A log of operating time for the capture system, control device, monitoring equipment and the associated coating line.

- D) A maintenance log for the capture system, control device and monitoring equipment detailing all routine and non-routine maintenance performed including dates and duration of any outages.
- 3) On and after a date consistent with Section 219.106 of this Part, the owner or operator of a subject coating line shall notify the Agency in the following instances:
- A) Any record showing violation of Section 219.207 of this Subpart shall be reported by sending a copy of such record to the Agency within 30 days following the occurrence of the violation.
 - B) At least 30 calendar days before changing the method of compliance with this Subpart from Section 219.207 to Section 219.204 or Section 219.205 of this Subpart, the owner or operator shall comply with all requirements of subsection (c)(1) or (d)(1) of this Section, respectively. Upon changing the method of compliance with this Subpart Part from Section 219.207 to Section 219.204 or Section 219.205 of this Subpart, the owner or operator shall comply with all requirements of subsection (c) or (d) of this Section, respectively.
- f) Any owner or operator of a primer surfacer operation or topcoat operation subject to the limitations of Section 219.204(a)(2) or (a)(3) of this Subpart shall comply with the following:
- 1) By a date consistent with Section 219.106 of this Part, or upon initial start-up of a new coating operation, the owner or operator of a subject coating operation shall certify to the Agency that the operation will be in compliance with Section 219.204 of this Subpart on and after a date consistent with Section 219.106 of this Part, or on and after the initial start-up date. Such certification shall include:
 - A) The name and identification number of each coating operation which will comply by means of Section 219.204(a)(2) and (a)(3) of this Subpart and the name and identification number of each coating line in each coating operation.
 - B) The name and identification number of each coating as applied on each coating line in the coating operation.

- C) The weight of VOM per volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating line.
 - D) The transfer efficiency and control efficiency measured for each coating line.
 - E) Test reports, including raw data and calculations documenting the testing performed to measure transfer efficiency and control efficiency.
 - F) The instrument or method by which the owner or operator will accurately measure or calculate the volume of each coating as applied each day on each coating line.
 - G) The method by which the owner or operator will create and maintain records each day as required in subsection (f)(2) below.
 - H) An example format for presenting the records required in subsection (f)(2) below.
- 2) On and after a date consistent with Section 219.106 of this Part, or on and after the initial start-up date, the owner or operator of a subject coating operation shall collect and record all of the following information each day for each topcoat or primer surfacer coating operation and maintain the information at the source for a period of three years:
- A) All information necessary to calculate the daily-weighted average VOM emissions from the coating operations in kg (lbs) per 1 (gal) of coating solids deposited in accordance with the proposal submitted, and approved pursuant to Section 219.204(a)(2) or (a)(3) of this Subpart including:
 - i) The name and identification number of each coating as applied on each coating operation.
 - ii) The weight of VOM per volume of each coating (minus water and any compounds which are specifically exempted from the definition of VOM) as applied each day on each coating operation.
 - B) If a control device(s) is used to control VOM emissions, control device monitoring data; a log of operating time for

the capture system, control device, monitoring equipment and the associated coating operation; and a maintenance log for the capture system, control device and monitoring equipment, detailing all routine and non-routine maintenance performed including dates and duration of any outages.

- 3) On and after a date consistent with Section 219.106 of this Part or on and after the initial start-up date, the owner or operator of a subject coating operation shall determine and record the daily VOM emissions in kg (lbs) per 1 (gal) of coating solids deposited in accordance with the proposal submitted and approved pursuant to Section 219.204(a)(2) or (a)(3) of this Subpart within 10 days from the end of the month and maintain this information at the source for a period of three years.
- 4) On and after a date consistent with Section 219.106 of this Part, the owner or operator of a subject coating operation shall notify the Agency in the following instances:
 - A) Any record showing a violation of Section 219.204(a)(2) or (a)(3) of this Subpart shall be reported by sending a copy of such record to the Agency within 15 days from the end of the month in which the violation occurred.
 - B) The owner or operator shall notify the Agency of any change to the operation at least 30 days before the change is effected. The Agency shall determine whether or not compliance testing is required. If the Agency determines that compliance testing is required, then the owner or operator shall submit a testing proposal to the Agency within 30 days and test within 30 days of the approval of the proposal by the Agency and USEPA.
- g) On and after a date consistent with Section 219.106(c) of this Part, or on and after the initial start-up date, whichever is later, the owner or operator of a coating line subject to the requirements of Section 219.218 of this Subpart shall comply with the following:
 - 1) By May 1, 2011, or upon initial start-up, whichever is later, submit a certification to the Agency that includes a description of the practices and procedures that the source will follow to ensure compliance with the applicable requirements in Section 219.218 of this Subpart;

- 2) Notify the Agency of any violation of Section 219.218 of this Subpart by providing a description of the violation and copies of records documenting such violation to the Agency within 30 days following the occurrence of the violation; and
- 3) Maintain at the source all records required by this subsection (g) for a minimum of three years from the date the document was created and make such records available to the Agency upon request.

(Source: Amended at ___ Ill. Reg. _____, effective _____)

Section 219.212 Cross-Line Averaging to Establish Compliance for Coating Lines

- a) On and after March 15, 1996, any owner or operator of a coating line subject to the limitations set forth in Section 219.204 of this Subpart, except coating lines subject to the limitations in Section 219.204(c)(2), (g)(2), or (h)(2) of this Subpart, and with coating lines in operation prior to January 1, 1991 ("pre-existing coating lines"), may, for pre-existing coating lines only, elect to comply with the requirements of this Section, rather than complying with the applicable emission limitations set forth in Section 219.204, if an operational change of the type described below has been made after January 1, 1991, to one or more pre-existing coating lines at the source. An operational change occurs when a pre-existing coating line is replaced with a line using lower VOM coating for the same purpose as the replaced line ("replacement line"). A source electing to rely on this Section to demonstrate compliance with the requirements of this Subpart shall operate pursuant to federally enforceable permit conditions approved by the Agency and USEPA.
- b) An owner or operator of pre-existing coating lines subject to a VOM content limitation in Section 219.204 of this Subpart and electing to rely on this Section to demonstrate compliance with this Subpart must establish, by use of the equations in subsection (d) of this Section, that the calculated actual daily VOM emissions from all participating coating lines, as defined below, are less than the calculated daily allowable VOM emissions from the same group of coating lines. For any pre-existing coating line to be aggregated for the purposes of Section 219.212, 219.213, or 219.214 of this Subpart ("participating coating lines"), the source must establish that:
 - 1) All coatings applied on the participating coating line shall, at all times, have a VOM content less than or equal to the applicable VOM content limitation for such coating listed in Appendix H of this Part; and

- 2) On the date the source elects to rely on this Section to demonstrate compliance with this Subpart, all coatings applied on the participating coating line are not already in compliance with the VOM content limitation for such coating effective on or after March 15, 1996; or the participating coating line is a replacement line, as defined in subsection (a) of this Section with an operational change occurring on or after January 1, 1991.
- c) Notwithstanding subsection (a) of this Section, any owner or operator of a coating line subject to the limitations set forth in Section 219.204 of this Subpart and electing to rely on this Section to demonstrate compliance with this Subpart, may also include as a participating coating line, until December 31, 1999, only, any replacement line that satisfies all of the following conditions:
- 1) The replacement line is operated as a powder coating line;
 - 2) The replacement line was added after July 1, 1988; and
 - 3) The owner or operator also includes as a participating coating line one or more coating lines that satisfy the criteria of a replacement line, as described in subsection (a) of this Section.
- d) To demonstrate compliance with this Section, a source shall establish the following:
- 1) An alternative daily emission limitation shall be determined for all participating coating lines at the source according to subsection (d)(2) of this Section. All participating coating lines shall be factored in each day to demonstrate compliance. Provided compliance is established pursuant to the requirements in this subsection, nothing in this Section requires daily operation of each participating line. Actual daily emissions from all participating coating lines (E_d) shall never exceed the alternative daily emission limitation (A_d) and shall be calculated by use of the following equation:

$$E_d = \sum_{i=1}^n V_i C_i$$

where:

E_d = Actual daily VOM emissions from participating coating lines in units of kg/day (lbs/day);

- i = Subscript denoting a specific coating applied;
- n = Total number of coatings applied by all participating coating lines at the source;
- V_i = Volume of each coating applied for the day in units of l/day (gal/day) of coating (minus water and any compounds which are specifically exempted from the definition of VOM); and
- C_i = The VOM content of each coating as applied in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM).

- 2) The alternative daily emission limitation (A_d) shall be determined for all participating coating lines at the source on a daily basis as follows:

$$A_d = A_1 + A_p$$

where A₁ and A_p are defined in subsections (2)(A) and (2)(B) of this subsection.

- A) The portion of the alternative daily emissions limitation for coating operations at a source using non-powder coating (A₁) shall be determined for all such participating non-powder coating lines on a daily basis as follows:

$$A_1 = \sum_{i=1}^n V_i L_i \frac{(D_i - C_i)}{(D_i - L_i)}$$

where:

- A_i = The VOM emissions allowed for the day in units of kg/day (lbs/day);
- I = Subscript denoting a specific coating applied;
- n = Total number of coatings applied in the participating coating lines;
- C_i = The VOM content of each coating as applied in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any

compounds which are specifically exempted from the definition of VOM);

D_i = The density of VOM in each coating applied. For the purposes of calculating A_1 , the density is 0.882 kg VOM/l VOM (7.36 lbs VOM/gal VOM);

V_i = Volume of each coating applied for the day in units of l (gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM);
and

L_i = The VOM emission limitation for each coating applied, as specified in Section 219.204 of this Subpart, in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM).

B) The portion of the alternative daily emission limitation for coating operations at a source using powdered coating (A_p) shall be determined for all such participating powder coating lines at the source on a daily basis as follows:

$$A_p = \sum_{h=1}^m \sum_{j=1}^n \frac{V_j \cdot L_j \cdot D_j \cdot K_h}{(D_j - L_j)}$$

where:

A_p = The VOM emissions allowed for the day in units of kg/day (lbs/day);

h = Subscript denoting a specific powder coating line;

j = Subscript denoting a specific powder coating applied;

m = Total number of participating powder coating lines;

n = Total number of powder coatings applied in the participating coating lines;

D_j = The assumed density of VOM in liquid coating, 0.882 kg VOM/l VOM (7.36 lbs VOM/gal VOM);

V_j = Volume of each powder coating consumed for the day in units of l (gal) of coating;

- L_j = The VOM emission limitation for each coating applied, as specified in Section 219.204 of this Subpart, in units of kg VOM/l (lbs VOM/gal) of coating (minus water and any compounds which are specifically exempted from the definition of VOM); and
- K = A constant for each individual coating line representing the ratio of the volume of coating solids consumed on the liquid coating system which has been replaced to the volume of powder coating consumed on the replacement line to accomplish the same coating job. This value shall be determined by the source based on tests conducted and records maintained pursuant to the requirements of Section 219.213 of this Subpart demonstrating the amount of coating solids consumed as both liquid and powder. Tests methods and recordkeeping requirements shall be approved by the Agency and USEPA and contained in the source's operating permit as federally enforceable permit conditions, subject to the following restrictions:
- i) K cannot exceed 0.9 for non-recycled powder coating systems; or
 - ii) K cannot exceed 2.0 for recycled powder coating systems.

(Source: Amended at __Ill. Reg. ____, effective ____)

Section 219.218 Work Practice Standards for Paper Coatings, Metal Furniture Coatings, and Large Appliance Coatings

- a) On and after May 1, 2011, every owner or operator of a source subject to the requirements of Section 219.204(c) of this Subpart shall:
- 1) Store all VOM-containing cleaning materials in closed containers;
 - 2) Ensure that mixing and storage containers used for VOM-containing materials are kept closed at all times except when depositing or removing such materials;
 - 3) Minimize spills of VOM-containing cleaning materials;
 - 4) Convey VOM-containing cleaning materials from one location to another in closed containers or pipes; and

- 5) Minimize VOM emissions from the cleaning of storage, mixing, and conveying equipment.
- b) On and after May 1, 2011, every owner or operator of a source subject to the requirements of Section 219.204(g) or 219.204(h) of this Subpart shall:
- 1) Store all VOM-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 VOM-containing coatings, thinners, coating-related waste materials, and cleaning materials are kept closed at all times except when depositing or removing such materials;
 - 3) Minimize spills of VOM-containing coatings, thinners, coating-related waste materials, and cleaning materials, and clean up spills immediately;
 - 4) Convey VOM-containing coatings, thinners, coating-related waste materials, and cleaning materials from one location to another in closed containers or pipes; and
 - 5) Minimize VOM emissions from the cleaning of storage, mixing, and conveying equipment.

(Source: Added at __ Ill. Reg. _____, effective _____)

TECHNICAL SUPPORT DOCUMENT

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**CONTROL OF VOLATILE ORGANIC MATERIAL
EMISSIONS IN NON-ATTAINMENT AREAS
FROM
PAPER, FILM, AND FOIL COATINGS,
LARGE APPLIANCE COATINGS,
AND METAL FURNITURE COATINGS**

AQPSTR 09-10

October 1, 2009

**ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
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List of Acronyms

CAA	Clean Air Act
CO	Carbon Monoxide
CTG	Control Techniques Guidelines
Illinois EPA	Illinois Environmental Protection Agency
NAA	Non-attainment Area
NAAQS	National Ambient Air Quality Standards
NO _x	Nitrogen Oxides
PTE	Potential To Emit
RACT	Reasonably Available Control Technology
SIP	State Implementation Plan
tpy	Tons per year
U.S. EPA	United States Environmental Protection Agency
VOM	Volatile Organic Material

EXECUTIVE SUMMARY

The Clean Air Act (CAA)¹, as amended in 1990, requires that state implementation plans (SIPs) for ozone non-attainment areas (NAAs) be revised in accordance with the implementation of reasonably available control technology (RACT). For control of volatile organic materials (VOM), which are precursors to the formation of ozone, the United States Environmental Protection Agency (U.S. EPA) has published control techniques guidelines (CTGs) to establish RACT categories for certain source categories. The regulated list was first released on March 23, 1995, and includes the following categories: paper, film, and foil coatings, metal furniture coatings, and large appliance coatings. In September of 2007, the U.S. EPA released an update to the CTGs for paper, film, and foil coatings²; large appliance coatings³; and metal furniture coatings⁴. As a result, Illinois Environmental protection Agency (“Illinois EPA”) is proposing the regulations to control VOM emissions from these categories of sources in the Chicago and Metro-East nonattainment areas (“NAAs”). The Chicago NAA includes the counties of Cook, DuPage, Kane, Lake, McHenry, Will, the townships of Aux Sable and Goose Lake in Grundy County, and the Oswego township in Kendall County, while the Metro East NAA includes Jersey, Madison, Monroe, and St. Clair counties.

The Illinois EPA reviewed and relied upon the recommendations contained in the CTGs to develop its proposal to control VOM emissions from the affected sources. There are a total of 24 sources affected by this proposal in the Illinois NAAs. Though it is difficult to quantify actual VOM emissions reductions from this proposal, the Illinois EPA estimates that there will be 21.45 ton per year of reductions in the VOM emissions at a cost of \$1200.00 per ton of VOM removed. The Illinois EPA believes that the proposed regulations are technically feasible and cost effective.

1.0 INTRODUCTION

Pursuant to Section 109 of the CAA¹, and to protect the public health, the U.S. EPA revised the national ambient air quality standard (“NAAQS”) for ozone, effective July 17, 1997. The U.S. EPA lowered the NAAQS for ozone to 0.08 parts per million from the previous 0.12 parts per million. In addition, the time period used for measuring compliance was increased from the previous 1 hour to 8 hours. The U.S. EPA designated areas that did not meet the NAAQS for 8-hour ozone in April 2004. In Illinois, the Chicago and the Metro East/St. Louis areas have been designated as moderate ozone nonattainment areas under the new NAAQS. Included in the Chicago NAA are Cook, DuPage, Kane, Lake, McHenry, and Will counties, as well as the Aux Sable Township and Goose Lake Township in Grundy County, and Oswego Township in Kendall County. The Metro East/St. Louis NAA is comprised of Jersey, Madison, Monroe, and St. Clair counties. The CAA Section 172 requires that SIPs for these non-attainment areas must include emission controls that are economically and technologically feasible. Emission control technologies that meet these criteria are known as reasonably available control technology (“RACT”).

Accordingly, the Illinois EPA is proposing to reduce VOM emissions from the following categories: paper, film, and foil coatings; large appliance coatings; and metal furniture coatings. These three emission categories have been designated as “Consumer and Commercial Products, Group III” by the U.S. EPA. Pursuant to CAA Section 183(e)(3)(C), U.S. EPA determined that CTGs “will be substantially as effective as national regulations in reducing emissions of volatile organic compounds in ozone national ambient air quality standard nonattainment areas.” Based on that determination, U.S. EPA issued final CTGs in lieu of national regulations for the affected categories in September 2007.

The U.S. EPA’s CTG for Paper, Film, and Foil Coatings² suggests applying control methods to reduce VOM emissions for cleaning operations to each source in which the total actual VOM emissions from all paper, film, and foil coating operations are equal to 15 lb/day or more. For coatings, the CTG suggests applying control methods to paper, film, and foil surface coating lines that have a potential to emit (“PTE”) at least 25 tons per year (tpy) of VOM, before the

consideration of controls. However, for sources that have actual emissions greater than 15 lb/day and where no single coating line has the PTE of 25 tpy or more before controls, the CTG recommends applying only the suggested work practices. The U.S. EPA's CTG for paper, film, and foil coatings cautions that this category is not to be confused with the coating that is performed on or in-line with any offset lithographic, screen, letterpress, flexographic, rotogravure, or digital printing press, as it is part of a *printing* process and not a coating process.

The CTGs for large appliance coatings and metal furniture coatings recommend applying control methods to sources in which the total actual VOM emissions from all related operations (including cleaning activities) equal 15 lb/day or more, or an equivalent level (such as 3 tons per 12-month rolling period), before consideration of controls. This threshold level is deemed to be equal to the evaporation of about 2 gallons of solvent per day, which is considered an incidental level that can be expected even in sources that utilize low-solvent coatings (i.e. powder or UV cure coatings)^{3,4}.

2.0 PROCESS DESCRIPTION AND SOURCE OF EMISSIONS

The U.S. EPA's CTGs contain information on various coating processes and their sources of VOM emissions. The following discussion is based on the U.S. EPA's CTG documents.

2.1 Paper, Film, and Foil Coatings

Paper, film, and foil coatings include adhesives used on tapes and labels, and are defined as “any protective, decorative, or functional coating applied on paper, plastic film, or metallic foil to make certain products, including but not limited to, adhesive tapes and labels, book covers, post cards, office copier paper, drafting paper, or pressure sensitive tapes”; this includes coatings applied through saturation or impregnation. Paper, film, and foil surface coatings can also be categorized as a web coating process, which typically involves the application of a continuous layer of coating across either a whole or part of the width of a web substrate to do the following: 1) provide a covering, finish, or functional or protective layer to a substrate; 2) saturate a substrate for lamination; or 3) provide adhesion between two substrates for lamination.

An average coating line can include a series of one or more unwind/feed stations; one or more coating applicators; the flash off area (the portion between two or more consecutive coating applicators or between the coating applicator and the drying oven); one or more drying ovens; and one or more rewind/cutting stations. Many varying kinds of coating applicators can exist, and they include: rotogravure, reverse roll, slot die, knife, flexography, Mayer rod, dip and squeeze, and extrusion/calendering. Further details regarding these types of coating applicators can be found in the paper, film, and foil coatings CTG². In addition, the cleaning activities that occur at associated facilities are carried out to eliminate coating residue or other unwanted materials from equipment related to coating operations; this is done via spray gun cleaning and other such related cleaning operations.

Sources of VOM emissions arise from the evaporation of volatile components of the coatings and cleaning materials. These can mostly be from the process of coating application/flash-off,

coating curing/drying, and cleaning. About 90% of the VOM in the coatings is evaporated in the drying ovens.²

2.2 Large Appliance Coatings

Large appliance coatings include paints, topcoats, basecoats, primers, enamels, sealants, caulks, inks, adhesives, and maskants that are used in the manufacture of large appliances (such as washers and dryers). Coatings from large appliances are defined as any protective, decorative, or functional coating applied onto the surface of large appliances or to the constituent metal parts. Some examples that are listed as large appliances include residential and commercial washers, dryers, ranges, refrigerators, freezers, water heaters, dishwashers, trash compactors, air conditioners, and other similar products. The employment of coatings is an important part in the making of large appliances, as they protect the metal on the large appliances from rusting away by allowing resistance to such factors as moisture, heat, detergent, and even outdoor elements. They must be durable and have superb adhesion properties to prevent chipping or peeling as well.

Typical coating methods include air atomized spraying, airless spraying, electrostatic spraying, dip coating, electrodeposition, and flow coating. In air atomized spraying, compressed air is used to provide transfer efficiencies of up to 40%, while airless spraying employs an airless pump system to force the coating through a nozzle that is made to atomize the coating for a transfer efficiency of between 50 to 60 percent. For electrostatic spraying, an air or an airless gun system can be created to magnetize the coating to the substrate and achieve approximately 85% transfer efficiency. A dip coating process involves dipping a part into a tank that contains the coating to have a transfer efficiency of close to 85%. Electrodeposition is just a type of dip coating method that uses an electric field to aid the placement of a waterborne coating to a substrate. Finally, flow coating is a technique that applies a coating directly onto a substrate without atomizing the coating and usually creates 85% transfer efficiency. Further details concerning the process for large appliance coatings are in the U.S. EPA's CTG for large appliance coatings³.

Primary sources of VOM emissions evolve from the coating application (prime, single or topcoat application)/flash-off and drying/curing of the coatings, and from mixing and/or thinning. In addition, cleaning materials are another source of VOM emissions. Cleaning can involve different types of chemical washes, including solvent cleaning, acid washing, phosphate washing, and de-ionized water washing—solvent cleaning and wetting oil treatments are the highest source of VOM emissions. Cleaning materials can also be used in cleaning coating equipment and to touch up the final products, and are typically VOM solvents, such as methyl ethyl ketone (MEK) and toluene, but there has been a greater trend towards using alcohol and water-based cleaners³.

2.3 Metal Furniture Coatings

Metal furniture coatings include paints used in the manufacture of furniture made in whole or part by metal (such as chairs and tables). Metal furniture coating is defined as “any protective, decorative or functional coating applied onto the surface of any metal furniture or any metal part which will be assembled with other metal, wood, fabric, plastic or glass parts to form metal furniture.” Examples of metal furniture include tables, chairs, waste baskets, beds, desks, lockers, benches, shelving, file cabinets, lamps, and room dividers that are made in whole or in part by metal. Similar to large appliance coatings, the coatings on metal furniture protect them from rusting away by allowing resistance to such elements as moisture, heat, detergent, and even outdoor factors, and they must be durable and have superb adhesion properties to prevent chipping or peeling as well.

Four main processes are involved in the creation of metal furniture manufacturing: 1) raw material preparation; 2) surface preparation; 3) coating and adhesive application operations; and 4) assembly. Surface preparation, coating application operations, and cleaning activities use VOM-containing compounds (e.g. coatings, thinners, and/or cleaning materials). Prior to a metal furniture part or product being coated, its surface must be cleaned; this consists of the following processing steps: 1) alkaline or acid cleaning, 2) water rinse, 3) iron phosphate treatment, 4) water rinse, and 5) pre-treatment and/or another final water rinse. After this stage, the surface coating application occurs, followed by curing or a drying of the coating; the coating could either

be a liquid or powder, and can be sprayed or dipped. Next, the final unit is assembled and packaged for shipment.

Similar to the large appliance coatings, the primary source of VOM emissions can occur from the evaporation of the volatile contents of the coatings and cleaning materials. Most notably, the VOM emissions from coating applications arise when solvent vanishes from the coating as it is being placed onto the part, or even when solvents are being used during the final cleaning process. It is important to state that the more efficient that a coating application technique is in enabling a transfer of coatings to the metal furniture part, the volume of coatings needed during productions decreases, which thereby results in lower VOM emissions⁴.

3.0 TECHNICAL FEASIBILITY OF CONTROLS

After reviewing the original 1977 CTG, all other associated revisions thereafter, and current state and local regulations, the U.S. EPA proposed emission limits and work practices to control VOM emissions from the coating categories involved in Consumer and Commercial Products, Group III: Paper, Film, and Foil Coatings, Large Appliance Coatings, and Metal Furniture Coatings.

3.1 Paper, Film, and Foil Coatings

Common control techniques for reducing VOM emissions from paper, film, and foil surface coatings include pollution prevention measures and the operation of emission capture and add-on systems. Product substitution/reformulation is commonly used as a pollution prevention measure in the paper, film, and foil surface coating industry to decrease VOM emissions from coatings. Lower VOM content coatings, such as waterborne and higher solids contents coatings, or coatings with no solvents may be used to reduce VOM emissions by reducing or eliminating the organic solvent present in the coatings. Coating manufacturers have developed and are continuing to develop waterborne and other alternative coating formulations that replace conventional organic solvent-based coatings. These coating are available for a number of applications. However, for some products, the currently available low-VOM coatings or coatings with no solvent do not meet the performance requirements of some paper, film, and foil surface coating operations.

When low-VOM content coatings cannot be used due to performance requirements calling for higher VOM content coatings, VOM emissions from paper, film, and foil surface coating operations can be reduced by the use of capture systems in conjunction with add-on control systems that either destroy or recover the VOM in the exhaust streams. Add-on control devices reduce the amount of VOM emissions by either destruction or recovery with or without recycling of VOM collected from the exhaust streams. Two categories of add-on control devices are typically used by paper, film, and foil industry: combustion (thermal or catalytic oxidation) and recovery (adsorption and condensation). In general, oxidation and adsorption systems can achieve destruction efficiency of greater than 95 percent as applied to surface coating application

operations with high and constant concentration of VOM. Detailed information on these control technologies are contained in the U.S. EPA's CTG for paper, film, and foil coatings².

Pollution prevention is the most common emission control technique for reducing VOM emissions from cleaning materials. Reducing the composite vapor pressure or VOM content of the cleaning material used, either by substitution or formulation, is one of the pollution prevention measures that is used to reduce VOM emissions from cleaning operations. However, little information is available regarding the types of low-VOM or VOM-free cleaning materials that could be used in the paper, film, and foil surface coating industry.

The CTG for paper, film, and foil surface coatings recommended an overall VOM control efficiency of 90% for each coating line that has a potential to emit at least 25 tpy of VOM from coatings before the consideration of add-on controls. However, as an alternative to the 90% overall control efficiency, the U.S. EPA recommends a limit of 0.20 kg VOM/kg (0.20 lb VOM/lb) solids applied or 0.067 kg VOM/kg (0.067 lb VOM/lb) coatings applied for pressure sensitive tape and label surface coating lines, and a limit of 0.40 kg VOM/kg (0.40 lb VOM/lb) solids applied or 0.08 kg VOM/kg (0.08 lb VOM/lb) coating applied for all other paper, film, and foil surface coating lines. Table 1 summarizes the U.S. EPA's recommended RACT limits for paper, film, and foil coatings.

These limits can be met through daily within-line averaging (i.e. averaging the VOM content of materials used on an individual surface coating line each day).

The U.S. EPA recommends work practices to decrease VOM emissions for cleaning materials, but *not* the application of add-on controls (add-on controls would be too costly because the area to be controlled is very large, and would thereby require a large volume of air to be captured and directed to a control device). Typically, VOM emissions for cleaning materials come from the mixing, storage, and handling of cleaning materials and cleaning-related waste materials. In order to minimize the emissions, the following work practices can be employed: (1) place all VOM-containing cleaning materials in closed containers; (2) guarantee that mixing and storage containers used for VOM-containing materials are kept closed at all times except when

Table 1: RACT Limits for Paper, Film, and Foil Coatings

Units	RACT Limits	
	Pressure Sensitive Tape and Label Surface Coating	Paper, Film, and Foil Surface Coating (does not include Pressure Sensitive Tape and Label Surface Coating)
Emission Reduction (%)	90	90
kg VOM/kg solids (lb VOM/lb solids)	0.20	0.40
kg VOM/kg coatings (lb VOM/lb coatings)	0.067	0.08

depositing or removing these materials; (3) curtail spills of VOM-containing cleaning materials; (4) transfer VOM-containing cleaning materials from one location to another in closed containers or pipes; and (5) reduce VOM emissions from cleaning of storage, mixing, and conveying equipment.

3.2 Large Appliance Coatings

Several kinds of controls are available to industry to control VOM emissions from coatings and the cleaning materials associated with this category. These available controls for coatings include pollution prevention measures, such as product substitution/reformulation and work practices, and emission capture and add-on control systems. The same types of available controls would also apply to cleaning materials associated with large appliance coatings operations.

For product substitution/reformulation, affected sources can use waterborne coatings, higher solids solvent-borne coatings, and powder coatings to reduce VOM emissions through decreasing or even eliminating the amount of organic solvent in the coatings. Several coating

manufacturers provide such environmentally-friendly product substitution/reformulation methods, which are easily convertible from the original solvent-borne coatings, and are generally available. In addition to this, work practices may be used to reduce VOM emissions from coatings during paint mixing, paint storage, and paint transfer operations. These work practices include keeping coating supply lines, holding tanks, coating storage containers, or any such fluid handling equipment well maintained to prevent spills, leaks, or other such problems that would aggravate the amount of VOM released into the air. During mixing operations, mixing vessels should have a top that prevents VOM emissions from being released into the air during the agitation process, and mixed coatings and solvents should be stored in closed containers when they are not being combined.

Emission capture and add-on control systems can also be used to reduce VOM emissions from large appliance coating operations. The most common method for the destruction of VOM from coatings is thermal oxidation, and can include the following: (1) direct, gas-fired, thermal recuperative oxidation; (2) direct, gas-fired thermal regenerative oxidation; (3) direct, electrically heated, thermal regenerative oxidation; (4) direct, electrically heated, catalytic oxidation; and (5) direct, gas-fired, catalytic oxidation. These add-on control systems can achieve a VOM control efficiency between 80% and 98%, with thermal oxidation being the more preferred method for VOM destruction. More information concerning these add-on control systems available for large appliance coatings can be found in the U.S. EPA's CTG for large appliance coatings³.

Available control options for VOM emissions from cleaning materials associated with large appliance coating operations are similar to those for coating operations, including pollution prevention measures (e.g. product substitution/reformulation and work practices) and emission capture/add-on control systems. For product substitution/reformulation, alternative cleaners, such as alcohols and citrus-based cleaners, can be employed to restrict VOM emissions from cleaning operations. An example of a work practice procedure that can be utilized to further reduce VOM emissions from cleaning operations associated with large appliance coatings operations involves nozzle maintenance, which is an integral part of any metal pre-treatment system—an improperly maintained nozzle can lower spray impact and can distort spray systems, and thereby reduce the cleaning efficiency. In addition, storing cleaning materials in covered

containers, minimizing the use of necessary cleaning materials, and collecting and placing solvent-filled cleaning materials in closed containers after they are used can further prevent the vaporization of VOM into the air.

Along with the pollution prevention measures listed above, affected sources can use emission capture and add-on control systems to control VOM emissions from cleaning operations for large appliance coatings. These include carbon adsorption units or oxidizers.

The U.S. EPA believes that such recommendations will reduce VOM emissions from this category by approximately 30%, which is a potential reduction of about 1,000 tons of VOM from the NAA facilities. The U.S. EPA assumes that most facilities will use low-VOM coating materials, due to economic and/or financial reasons.

3.2.1 Emission Limits Based on Low-VOM Coatings

Tables 2 and 3 list the suggested U.S. EPA emission limits based on low-VOM coatings for one-component and multi-component general purpose coatings, as well as specific emission limits for certain specialty coatings (both are separated into baked and air-dried coatings). Table 2 specifies limits in terms of mass of VOM per volume of coating (excluding water and exempt compounds, as applied) and Table 3 specifies the equivalent limits in terms of mass of VOM per volume of solids, as applied.

3.2.2 Optional Add-On Controls for Coating Operations

If a product's performance requirements or other needs require the use of higher-VOM materials than those listed in Tables 2 or 3, an affected source could choose to use add-on control equipment to meet a 90% overall control efficiency. Add-on devices include oxidizers and solvent recovery systems that, when joined with their VOM capture systems, would allow for the source to achieve the 90% overall control efficiency. An affected facility could also combine

Table 2: Mass of VOM per Volume of Coating for Large Appliance Coatings

Coating type	Baked		Air Dried	
	kg/l	lb/gal	kg/l	lb/gal
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 Coatings	0.420	3.5	0.420	3.5
Solar Absorbent	0.360	3.0	0.420	3.5

Table 3: Mass of VOM per Volume of Solids for Large Appliance Coatings

Coating type	Baked		Air Dried	
	kg/l	lb/gal	kg/l	lb/gal
General, One Component	0.40	3.3	0.40	3.3
General, Multi-Component	0.40	3.3	0.55	4.5
Extreme High Gloss	0.61	5.1	0.55	4.5
Extreme Performance	0.61	5.1	0.80	6.7
Heat Resistant	0.61	5.1	0.80	6.7
Metallic	0.80	6.7	0.80	6.7
Pretreatment Coatings	0.80	6.7	0.80	6.7
Solar Absorbent	0.61	5.1	0.80	6.7

coatings and add-on control equipment on a coating unit to meet the recommended mass of VOM limits, as listed in Tables 2 or 3.

3.2.3 Work Practices for Coating Operations and Cleaning Materials

Similar to the control options for cleaning materials operations from the paper, film, and foil coatings subcategory, the U.S. EPA is recommending work practices to minimize VOM emissions from large appliance coatings as well. These work practices are applicable to solvent storage, mixing operations, and handling operations for coatings, thinners, cleaning materials, and waste materials, and include the following: (1) store all VOM-containing coatings, thinners, and cleaning materials in closed containers; (2) minimize spills of VOM-containing coatings, thinners, and cleaning materials; (3) clean up spills immediately; (4) convey any coatings, thinners, and cleaning materials in closed containers or pipes; (5) close mixing vessels that contain VOM coatings and other materials except when specifically in use; and (5) minimize usage of solvents during cleaning of storage, mixing, and conveying of equipment.

3.3 Metal Furniture Coatings

Similar to the available controls for the prior two subcategories, two basic emission control techniques are available to reduce VOM emissions from metal furniture coatings: pollution prevention measures, and emission capture and add-on control systems, pollution prevention being the preferred technique used by most metal furniture coating sources.

A source may choose to substitute higher-solvent coatings with either powder coatings, waterborne coatings, higher solids coatings, UV coatings, electrocoatings, and autophoretic coatings, all of which have little or no solvents. Several manufacturers are slowly veering away from using conventional organic solvent-borne coatings, and are replacing them with waterborne and powder coating formulations. It is important to note that the currently available low-VOM coatings or coatings with no solvents do not meet the performance requirements of some metal furniture and cannot be viable options for the production of these products. Additionally, utilizing more effective application equipment can reduce VOM emissions. Conventional air atomized application systems have typical transfer efficiencies between 25-40% using high atomizing air pressure. More modern technologies include electrostatic and high volume/low pressure (HVLP) spray equipment, which can attain far greater transfer efficiencies, which

results in less dependence on VOM-containing materials. More information on these types of spray applications can be found in the CTG for metal furniture coatings⁴.

Along with pollution prevention measures, VOM emissions from metal furniture coating operations can be reduced via the use of capture systems and add-on control devices, which either destroy or recover the VOM in the exhaust stream. Examples of capture systems include such simple components as hoods and enclosures, which collect solvent-filled air from process vents (such as spray booths or bake oven vents) and/or fugitive emissions from the flash-off area, and direct it to a control device. Control devices for the metal furniture coating industry include combustion (thermal or catalytic oxidation) and recovery (adsorption and absorption). These types of add-on control systems can reach a control efficiency of 95% or greater. Recovered solvents that cannot be reused can either be sold back to the solvent supplier or an independent firm that specializes in reclaiming contaminated solvents, or used as a fuel in coating boilers or coating ovens; the latter option would require burner modifications to burn solvent, since many coating ovens and boilers are gas-fired. Other control technologies, such as condensation, biodegradation, and UV oxidation, are all applicable for VOM emissions control from metal furniture coating operations, but are currently not widely used.

Pollution prevention is the most widely used emission control technique for decreasing VOM emissions from cleaning materials related to metal furniture coating operations. An affected source can reduce the composite VOM vapor pressure or VOM content of the cleaning material being used by using low-VOM or VOM-free cleaning materials. In addition, work practice procedures can be employed to reduce VOM emissions from cleaning material processes, and they include the following:

- Cover mixing and storage vessels for VOM-containing cleaning materials, and cleaning waste materials except when adding, removing, or mixing contents;
- Use closed containers or pipes to store and convey VOM-containing cleaning and cleaning waste materials;
- Minimize spills of VOM-containing cleaning and cleaning waste materials; and
- Minimize VOM emissions during cleaning operations.

3.3.1 Emission Limits Based on Low-VOM Coatings

The emission limits set forth in the U.S. EPA's CTG on metal furniture coatings are for one-component and multi-component general purpose coatings, as well as for certain specialty coatings, all of which are separated by baked and air-dried coatings. Tables 4 and 5 show VOM limits for metal furniture coatings in mass per volume of coating and equivalent limits in mass per volume of solids, respectively.

These VOM content limits can be met through daily within-coating unit averaging (averaging the VOM content of materials used on a single surface coating unit each day). In addition, the U.S. EPA is recommending that affected sources utilize one or more of the following application methods: electrostatic application, high volume low pressure (HVLP) spray, flow coat, roller coat, dip coat including electro-deposition, or other such coating application method that is capable of achieving a transfer efficiency equivalent or better than that which is achieved by HVLP spraying. However, the U.S. EPA is recommending that the following kinds of coatings and coating operations be exempt from the VOM content limits stated above: stencil coatings, safety-induced coatings, solid-film lubricants, electric-insulating and thermal-conducting coatings, touch-up and repair coatings, and coating application utilizing hand-held aerosol cans. The limits set forth in Tables 4 and 5 are the same VOM content limits set forth for large appliance coatings.

3.3.2 Add-On Controls for Coating Operations

The optional add-on controls for coating operations related to metal furniture production are the same as those for large appliance coatings:

- a 90% overall control efficiency for add-on control equipment (including oxidizers and solvent recovery systems; or
- a combination of coatings and add-on control equipment on a coating unit to meet the recommended mass of VOM per volume of coating solids limits.

**Table 4: Mass of VOM per Volume of Coating (excluding water and exempt compounds)
for Metal Furniture Coatings**

Coating type	Baked		Air Dried	
	kg/l	lb/gal	kg/l	lb/gal
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 Coatings	0.420	3.5	0.420	3.5
Solar Absorbent	0.360	3.0	0.420	3.5

Table 5: Mass of VOM per Volume of Solids (as applied) for Metal Furniture Coatings

Coating type	Baked		Air Dried	
	kg/l	lb/gal	kg/l	lb/gal
General, One Component	0.40	3.3	0.40	3.3
General, Multi-Component	0.40	3.3	0.55	4.5
Extreme High Gloss	0.61	5.1	0.55	4.5
Extreme Performance	0.61	5.1	0.80	6.7
Heat Resistant	0.61	5.1	0.80	6.7
Metallic	0.80	6.7	0.80	6.7
Pretreatment Coatings	0.80	6.7	0.80	6.7
Solar Absorbent	0.61	5.1	0.80	6.7

3.3.3 Work Practices for Coating Operations and Cleaning Materials

To further reduce VOM emissions from metal furniture surface coating-related activities, the CTG recommends instilling the following work practices: (1) store all VOM-containing coatings, thinners, and coating-related waste materials in closed containers; (2) ensure that mixing and

storage containers used for VOM-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 VOM-containing coatings, thinners, and coating-related waste materials; and (4) convey VOM-containing coatings, thinners, and coating-related waste materials from one location to another in closed containers or pipes. While work practices are extremely favorable to the goal of reducing VOM emissions, it is important to note that VOM reductions may not be quantifiable.

As for cleaning materials associated with metal furniture coating operations, the U.S. EPA's CTG simply recommends work practices such as: (1) closed container storage of all VOM-containing cleaning materials and used shop towels; (2) ensure that mixing and storage containers used for VOM-containing cleaning materials remain closed at all times except when depositing or removing such materials; (3) minimize spills of VOM-containing cleaning materials; (4) convey VOM-containing cleaning materials from one area to another in closed containers or pipes; and (5) minimize VOM emissions from cleaning of storage, mixing and conveying equipment.

4.0 ECONOMIC REASONABLENESS

The Illinois EPA relied on the U.S. EPA's economic analysis included in the respective CTGs to determine the economic costs and impacts associated with the control of VOM emissions from paper, film, and foil coatings; metal furniture coatings; and large appliance coatings operations in Illinois' NAAs.

4.1 Paper, Film, and Foil Coatings

In order to calculate the approximate costs that are associated with the add-on control recommendation set forth in the paper, film, and foil coatings CTG, the U.S. EPA assumed that about 47% of the facilities in the 2002 National Emissions Inventory (NEI) database (119 facilities) were currently in compliance with the 2002 National Emission Standards for Hazardous Air Pollutants (NESHAP). Based on the average number of coating lines per facility classified in Table 2 of the CTG that had a potential to emit 25 tpy of VOM or greater before consideration of add-on controls, the total annual cost was about \$24.5 million per year. Furthermore, if facilities that exceed the emission thresholds and that are located in NAAs utilized the 90% emission reduction, it would create an emission reduction 20,800 tpy. With this in mind, the CTG states that the expected cost-effectiveness of implementing the CTG's approaches to control VOM emissions would be about \$1,200 per ton. For cleaning materials associated with this category, the U.S. EPA believes that the application of add-on controls would be a costly alternative for decreasing VOM emissions because the area that would be controlled has a large volume of air that would be captured and directed to a control device.²

4.2 Large Appliance Coatings

When suggesting control options, the U.S. EPA assumed that all facilities would choose to use a low-VOM coating materials alternative. This was made for two reasons: 1) complying low-VOM coating materials are already available on the market at a cost that is not much greater than the cost of coating materials with higher VOM contents; and 2) the use of add-on controls to reduce VOM emissions from average spray coating operations would be a more costly

alternative. By applying the emission limits based on low-VOM coatings, the 90% overall control efficiency, as well as utilizing the work practices associated with cleaning materials from such operations, the U.S. EPA believes that the cost-effectiveness for a medium sized facility that uses waterborne prime and higher solids topcoat would be approximately \$425 per ton in 2006 dollars. However, the 2002 NESHAP presented a control cost of \$480,000 for approximately 1,000 tons of HAP reduction from 74 facilities anticipated to be subject to the rule (\$480 per ton of HAP reduced in 2006 dollars). Therefore, for the purpose of establishing cost-effectiveness for VOM emissions control from applicable NAA sources, the U.S. EPA approximates a cost of about \$500 per ton of VOM reduced, and a total annual cost of the 1,000 tpy of emissions reduction to be \$500,000.³

4.3 Metal Furniture Coatings

Using the 2002 NEI database to estimate the number of metal furniture manufacturing sources, the U.S. EPA approximated that there were a total of 456 metal furniture facilities nationally. Out of these 456 facilities, it was estimated that there were about 289 facilities in ozone NAAs, and that 143 of those 289 emitted at or beyond the 15 lb/day VOM emissions threshold. Similar to the CTG for large appliance coatings, the U.S. EPA assumed that all facilities would choose to use a low-VOM coating materials alternative. This was made for two reasons: 1) complying low-VOM coating materials are already available on the market at a cost that is not much greater than the cost of coating materials with higher VOM contents; and 2) the use of add-on controls to reduce VOM emissions from average spray coating operations would be a more costly alternative. In accordance with studies that were carried out for the 2003 NESHAP, the cost to implement the control alternatives from the U.S. EPA's CTG for this category averaged across all sizes of facilities was as high as \$1,670 per facility. For the 143 facilities mentioned previously that exceeded the 15 lb/day applicability threshold, total annual costs were estimated to be approximately \$240,500; such an implementation will result in a 35% (1,200 tpy) reduction in VOM emissions from metal furniture coatings. U.S. EPA calculated the cost effectiveness to be about \$200 per ton in VOM emissions reduction.

5.0 EXISTING AND PROPOSED REGULATIONS

The Illinois EPA reviewed the control techniques recommended in the CTGs to control VOM emissions from coating operations. These recommendations were then compared to current Illinois EPA regulations and the corresponding Illinois EPA inventory to determine if proposed changes needed to be made, such that they would be mirrored with U.S. EPA requirements.

5.1 EXISTING REGULATIONS

Currently, Illinois EPA regulates VOM emissions from various surface coating operations including paper, film, and foil; metal furniture; and large appliance coating operations in the Illinois' NAAs (Chicago and Metro-East).

5.1.1 Paper, Film and Foil Coatings

Parts 218 and 219 of 35 Ill. Adm. Code⁵ contain specific regulations for controlling VOM emissions from paper, film, and foil coatings. VOM content limitations are prescribed for paper coating operations that emit 15 lb/day or more of VOM from all associated coating operations. Table 6 shows the existing VOM content limits for paper coatings.

Table 6: Existing VOM Content Limits for Paper Coatings

<u>Compliance Date</u>	<u>Limitation</u>	
	<i>kg/l</i>	<i>lb/gal</i>
Prior to March 15, 1996	0.35	2.9
On and After March 15, 1996	0.28	2.3

Alternatively, sources may install and operate VOM capture and control systems that provide 81% reduction in overall VOM emissions, and the control device must achieve 90% efficiency

(control devices include afterburner, carbon adsorption, condensation, or absorption scrubber system).

5.1.2 Large Appliance Coatings

Specific regulations for large appliance coatings are located in Subpart F of 35 Ill. Administrative Code Parts 218 and 219. The applicable threshold for the total actual uncontrolled VOM emissions from all large appliance coating operations is 15 lbs/day or more. Furthermore, Illinois EPA does not distinguish between different coating types, and instead divides between a baked and air-dried coating operation that has a compliance date before or after March 15, 1996. Table 7 shows the existing VOM content limits for large appliance coatings in Illinois' NAAs.

Table 7: Existing VOM Content Limits for Large Appliance Coatings

<u>Compliance date</u>	<u>Baked</u>		<u>Air Dried</u>	
	kg/l	lb/gal	kg/l	lb/gal
Until March 15, 1996	0.34	2.8	0.34	2.8
On and After March 15, 1996	0.28	2.3	0.34	2.8

As an alternative to compliant coatings, the rule provides an add-on control option that requires a coating line to be equipped with a capture system and control device that provides an 81% reduction in overall VOM emissions, and the control device (i.e. afterburner, carbon adsorption, condensation, or absorption scrubber system) achieves a 90% efficiency.

5.1.3 Metal Furniture Coatings

Regulations for metal furniture coating operations are very similar to the regulations for large appliance coatings, except with regard to the VOM emission limits for baked or air-dried metal furniture coatings until March 15, 1996:

Table 8: Existing Metal Furniture Coatings Limits

<u>Compliance date</u>	<u>Baked</u>		<u>Air Dried</u>	
	kg/l	lb/gal	kg/l	lb/gal
Until March 15, 1996	0.36	3.0	0.36	3.0
On and After March 15, 1996	0.28	2.3	0.34	2.8

5.2 PROPOSED REGULATIONS

Illinois EPA is proposing amendments to Parts 218 and 219 of 35 Ill. Adm. Code to control VOM emissions from paper coating, metal furniture coating, and large appliance coating. The control requirements are consistent with the recommendations contained in the 2007 CTGs. The proposed compliance date to comply with the regulations is on and after May 1, 2011.

5.2.1 Paper, Film and Foil Coatings

Illinois EPA is not proposing any change to the applicability threshold of 15 lb/day or more for control requirements for paper coating. However, Illinois EPA is proposing to specify the VOM content limits of paper coating in lb (kg) of VOM per lb (kg) of solids and equivalent VOM limits in kg (lb) of VOM per kg (lb) of coating. Except for pressure sensitive tape and label surface coating, the VOM limits are equivalent to the existing VOM limits for paper coating. Table 9 shows the proposed VOM limits for paper coatings.

Table 9: Proposed Limits for Paper Coatings

<u>Units</u>	<u>Proposed Limits</u>	
	Pressure Sensitive Tape and Label Surface Coatings	Paper, Film, and Foil Coatings (not including Pressure Sensitive Tape and Label)
kg VOM/kg solids (lb VOM/lb solids)	0.20	0.40
kg VOM/kg coatings (lb VOM/lb coatings)	0.067	0.08

Affected sources may use add on capture and control systems to comply with the VOM content limits of the coatings. Illinois EPA is proposing to increase the overall control efficiency standards to 90 percent from the existing 81 percent overall control efficiency of the add-on capture and control systems.

In addition, the Illinois EPA is proposing to add Section 218.218: Work Practice Standards for Paper Coatings to include the following standards for cleaning materials from applicable sources related to this category on and after May 1, 2011:

- 1) Store all VOM-containing cleaning materials in closed containers;
- 2) Ensure that mixing and storage containers used for VOM-containing materials are kept closed at all times except when depositing or removing such materials;
- 3) Minimize spills of VOM-containing cleaning materials;
- 4) Convey VOM-containing cleaning materials from one location to another in closed containers or pipes; and
- 5) Minimize VOM emissions from the cleaning of storage, mixing, and conveying equipment.

5.2.2 Large Appliance Coatings

The Illinois EPA is not proposing any change to the applicability requirement of 15 lb VOM/day or more for the control requirements for large appliance coatings. The proposed regulations specify separate VOM content limits for one-component and multi-component general purpose coatings. Also, the proposed regulations provide specific emission limits for certain specialty coatings. For each of these coating types, Illinois EPA is proposing separate emission limits for baked and air-dried coatings. Depending on the type of coating, the VOM limits vary from 2.3 lb/gal (0.275 kg/l) to 3.5 lb/gal (0.42 kg/l). Table 2 of section 3.2.1 contains the various emission limits expressed in terms of mass of VOM per volume of coating for large appliance coatings that Illinois EPA is proposing and Table 3 of section 3.2.1 contains the equivalent emission limits expressed in mass/volume of solids.

The proposed regulations require the use of one or more of the following application methods: electrostatic application, HVLP spray, flow coat, roller coat, dip coat including electrodeposition, or other coating application method, with approval of the Illinois EPA, capable of achieving a transfer efficiency equivalent or better than achieved by HVLP spraying.

In addition, the proposed regulations provide that stencil coatings, safety-indicating coatings, solid-film lubricants, electric-insulating and thermal-conducting coatings, touch-up and repair coatings, or coating applications utilizing hand-held aerosol cans are exempt from VOM content limits.

Affected sources may use add-on capture and control systems to comply with the VOM content limits of the coatings. Illinois EPA is proposing to increase the overall control efficiency standard to 90 percent from the existing 81 percent overall control efficiency.

Also, the Illinois EPA is recommending the following work practice standards for large appliance coatings:

- 1) Store all VOM-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 VOM-containing coatings, thinners, coating-related waste materials, and cleaning materials are kept closed at all times except when depositing or removing such materials;
- 3) Minimize spills of VOM-containing coatings, thinners, coating-related waste materials, and cleaning materials, and clean up spills immediately;
- 4) Convey VOM-containing coatings, thinners, coating-related waste materials, and cleaning materials from one location to another in closed containers or pipes; and
- 5) Minimize VOM emissions from the cleaning of storage, mixing, and conveying equipment.

5.2.3 Metal Furniture Coatings

The proposed applicability, VOM limits, add-on control device efficiency, and work practices requirements for metal furniture coatings are identical to the proposed regulations for large appliance coatings.

6.0 AFFECTED SOURCES and VOM EMISSIONS REDUCTIONS

Illinois EPA reviewed its emissions inventory database to identify any potentially affected sources of the proposed regulations. There are a total of 22 sources in the Chicago NAA and two in the Metro-East NAA potentially affected by the proposed regulations. Out of 22 sources in the Chicago NAA, 16 sources have paper coating operations and six have metal furniture coating operations. Two sources in the Metro-East NAA have paper coating operations. There are no large appliance coaters in either the Chicago or the Metro-East NAAs.

The Illinois EPA reviewed the 2005 VOM emissions inventory and determined that seven sources in the Chicago NAA comply with the paper coating regulations by using add-on capture and control systems. All other affected sources use compliant coatings to comply with the regulations. The Illinois EPA believes that no new add-on capture and control systems will be installed to meet the proposed regulations. Rather, the Illinois EPA expects that affected sources will continue to use compliant coatings, or upgrade their existing add-on capture and control systems to meet the proposed VOM emission limits. Table 10 shows the estimated VOM emissions reductions and Table 11 lists the affected sources.

Table 10: VOM Emission Reductions in the Chicago and Metro-East NAAs

Category	<u>Number of Sources</u> <u>Non-attainment areas</u>		<u>2005 VOM Emissions</u>	
	<u>Chicago</u>	<u>Metro-East</u>	<u>Total</u> <u>(TPY)</u>	<u>Reduction</u> <u>(TPY)</u>
Paper, Film and Foil Coatings	16	2	109.83	21.45
Large Appliance Coatings	None	None	0	0
Metal Furniture Coatings	6	None	89.4	0
TOTAL	22	2	199.23	21.45

Table 11: List of Affected Sources in the Chicago and Metro-East NAAs

I.D. Number	Name of the Facility
031030ACM	Replogle Globes Corp.
031186AHL	Mecalux USA Inc
031600BPK	Edsal Mfg Co Inc
031600EDF	Marvel Group Inc
031600GCL	Dentalez Alabama Corp
111015ABO	Knaack LLC
031015AAM	Alcan Packaging Food and Tobacco Inc
031030ABQ	Lithographic Industries
031051AFP	Microcosm
031081ACU	Tapecoat Company Inc
031198ABP	Sun Process Converting Co
031198ABW	Stimsonite Corp
031288ABA	Federal-Mogul Corp
031600BGU	Color Communication Inc
031600BUF	Chicago Steel container Corp
043005AJS	Rollprint Packaging Product
043005AMQ	Pres-on Tape and Gasket Corp
089035AAK	Olon Industries Inc
089438ADW	Printpack Inc
097005ABB	Nu-way Speaker Products Inc
111010AAT	Flexicon Inc
163010AEZ	Weyerhaeuser Co
163806AAA	Hexacomb Corp
197050AAK	Panduit Corp

7.0 REFERENCES

1. The Clean Air Act as amended in 1990 (42 U.S.C. Section 7401 et seq.).
2. U.S. EPA. “Control Technique Guidelines for Paper, Film, and Foil Coatings”. EPA 453/R07-003, September 2007.
3. U.S. EPA. “Control Technique Guidelines for Large Appliance Coatings”. EPA-453/R-07-004, September 2007.
4. U.S. EPA. “Control Technique Guidelines for Metal Furniture Coatings”. EPA-453/R-07-005, September 2007.