BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	R2021-018
AMENDMENTS TO 35 ILL. ADM. CODE 219, ORGANIC MATERIAL EMISSION STANDARDS FOR THE METRO EAST AREA, AND 35 ILL. ADM. CODE 211, DEFINITIONS AND GENERAL PROVISIONS	)	(Rulemaking-Air)

NOTICE

To: Illinois Pollution Control Board
Don Brown, Clerk
James R. Thompson Center
100 West Randolph, Suite 11-500
Chicago, Illinois 60601-3218

Division Chief of Environmental Enforcement
Office of the Attorney General
100 West Randolph Street, Suite 1200
Chicago, Illinois 60601

Office of Legal Services
Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62701-1271

PLEASE TAKE NOTICE that I have today filed with the Office of the Pollution Control Board the REGULATAORY PROPOSAL entitled “AMENDMENTS TO 35 ILL. ADM. CODE 219, ORGANIC MATERIAL EMISSION STANDARDS FOR THE METRO-EAST AREA, AND 35 ILL. ADM. CODE 211, DEFINITIONS AND GENERAL PROVISIONS" and supporting documents of the Illinois Environmental Protection Agency, a copy of which is herewith served upon you.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: /s/ Charles E. Matoesian
Charles E. Matoesian
Assistant Counsel

DATED: October 5, 2020

1021 N. Grand Ave. East
P.O. Box 19276
Springfield, IL 62794-9276
(217) 782-5544

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	R20-
AMENDMENTS TO 35 ILL. ADM. CODE 219,	)	(Rulemaking-Air)
ORGANIC MATERIAL EMISSION	)	
STANDARDS FOR THE METRO EAST AREA,	)	
AND 35 ILL. ADM. CODE 211, DEFINITIONS	)	
AND GENERAL PROVISIONS	)	

TABLE OF CONTENTS OF REGULATORY SUBMITTAL

Following is a Table of Contents of all pleadings and documents included with the proposed regulatory action:

11. Incorporated Documents:

    40 CFR 82.4 (2020).

12. Certificate of Service

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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	R2021-018
AMENDMENTS TO 35 ILL. ADM. CODE 219, ORGANIC MATERIAL EMISSION STANDARDS FOR THE METRO EAST AREA, AND 35 ILL. ADM. CODE 211, DEFINITIONS AND GENERAL PROVISIONS	)	(Rulemaking-Air)

APPEARANCE

The undersigned hereby enters his appearance as an attorney on behalf of the Illinois Environmental Protection Agency.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

By: /s/Charles E. Matoesian

Charles E. Matoesian
Assistant Counsel
Charles.matoesian@illinois.gov

DATED: October 5, 2020

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APPEARANCE

The undersigned hereby enters her appearance as an attorney on behalf of the Illinois Environmental Protection Agency.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

By: /s/ Dana Vetterhoffer
Dana Vetterhoffer
Deputy General Counsel
Dana.vetterhoffer@illinois.gov

DATED: October 5, 2020

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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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CERTIFICATION OF ORIGINATION

The Illinois Environmental Protection Agency certifies in accordance with 35 Ill. Adm. Code 102.202(i) that this proposal for amendments to 35 Ill. Adm. Code 211, and 219 amends the most recent version of the rules as published on the Illinois Pollution Control Board's website.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

By: /s/ Charles E. Matoesian
Charles E. Matoesian
Assistant Counsel

DATED: October 5, 2020

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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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MOTION FOR EXPEDITED REVIEW

The Illinois Environmental Protection Agency ("Illinois EPA" or "Agency"), by its attorney, and pursuant to 35 Ill. Adm. Code 101.512, respectfully submits this Motion for Expedited Review. In support of this motion, the Illinois EPA states as follows:

1. Expedited review of this rulemaking is necessary because an aerospace facility located in Madison, Monroe, and St. Clair Counties ("Metro-East area") has indicated that it intends to expand its operations by early 2021, such that it will be subject to volatile organic material ("VOM") reasonably available control technologies ("RACT") rules in 35 Ill. Adm. Code Section 219.204 for VOM emissions from coating and cleaning operations. Because Illinois has previously not adopted VOM RACT rules specifically for aerospace facilities, the source would potentially be subject to more general Section 219.204 regulations for miscellaneous metal parts and products coatings. Aerospace regulations would be more appropriate, however, and so should be adopted expeditiously.

2. In December 1997, the United States Environmental Protection Agency ("USEPA") issued a control techniques guideline ("CTG") for coating operations and solvent use at aerospace manufacturing and rework facilities [*Control of Volatile Organic Compound Emissions from Coating Operations at Aerospace Manufacturing and Rework Operations,* EPA-453/R-97-004]. The aerospace CTG recommends RACT emissions control measures and

applicability thresholds for sources in the category. At the time of the issuance of the final aerospace CTG, Illinois EPA did not propose adopting rules for this category as there were no known subject sources.

3. As the aerospace facility referenced above now anticipates expanding operations, regulations specific to these operations should be adopted expeditiously. The aerospace CTG states on page 2-7, "The quality of the coatings is critical to the airworthiness and safety of the final product. Aerospace vehicle manufacturing is strictly controlled by the Federal Aviation Administration, the Department of Defense, and specific customer requirements. Industry specifications for coatings are dictated by these requirements." In addition, the aerospace CTG specifically recognizes that VOM RACT rules for miscellaneous metal parts and products coatings are not appropriate for aerospace applications, stating on page 1-1, "Section 183(b)(3) of the CAA requires the [US]EPA Administrator to issue a CTG for the control of [VOM] emissions from coatings and solvents used in the aerospace industry. This CTG is intended to supersede any potential applicability of the Miscellaneous Metal Part and Products CTG (RACT) requirements for manufacturing and rework operations of aerospace vehicles and components."

4. The Agency's proposed amendments to 35 Ill. Adm. Code 219 and 35 Ill. Adm. Code 211 are therefore intended to establish VOM content limitations, work practices, and recordkeeping and reporting requirements particular to aerospace facilities to ensure that the appropriate requirements are in place by the time the source begins operations in the Metro-East area. If this rulemaking is not expedited, the source would potentially be subject to the Section 219.204 regulations for miscellaneous metal parts and products coatings for a period, regulations that do not appropriately address the unique nature of aerospace operations.

5. As required by 35 Ill. Adm. Code Section 101.512, this Motion is accompanied by an Affirmation attesting that the facts cited herein are true.

WHEREFORE, for the reasons set forth above, the Illinois EPA respectfully requests that the Board expedite review in this matter and proceed to First Notice immediately.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: /s/ Charles E. Matoesian
Charles E. Matoesian
Assistant Counsel

DATED: October 5, 2020

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AFFIRMATION

I, David E. Bloomberg, under oath, hereby state and affirm that I am the Manager of the Air Quality Planning Section for the Illinois EPA Bureau of Air and that the facts cited in the foregoing Motion for Expedited Review are true and correct to the best of my information and belief.

David E. Bloomberg
Manager
Air Quality Planning Section
Bureau of Air

SUBSCRIBED AND SWORN TO BEFORE ME

This 23rd day of September, 2020

Notary Public

OFFICIAL SEAL
DAWN A. HOLLIS
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 03-21-2021

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
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AMENDMENTS TO 35 ILL. ADM. CODE 219, ORGANIC MATERIAL EMISSION STANDARDS FOR THE METRO EAST AREA, AND 35 ILL. ADM. CODE 211, DEFINITIONS AND GENERAL PROVISIONS	)	(Rulemaking-Air)

STATEMENT OF REASONS

I. INTRODUCTION

The Illinois Environmental Protection Agency ("Illinois EPA") submits this Statement of Reasons to the Illinois Pollution Control Board ("Board") pursuant to Sections 27 and 28 of the Environmental Protection Act ("Act") (415 ILCS 5/27 and 28) and 35 Ill. Adm. Code 102.202 in support of the attached proposal of regulations. These regulations are proposed to control emissions of volatile organic material ("VOM"), which is effectively the same as volatile organic compounds ("VOC"), at aerospace manufacturing and rework operations located in the counties of Madison, Monroe, and St. Clair ("Metro-East area"). The Agency's proposal is in response to information indicating that an aerospace facility intends to expand its operations in the Metro-East area and is intended to ensure that limitations specific to aerospace operations are in place when such expansion occurs.

The Agency proposes amending provisions in 35 Ill. Adm. Code 211, Definitions and General Provisions, and 219, Organic Material Emission Standards for the Metro East Area.

II. STATEMENT OF FACTS

The CAA establishes a comprehensive program for controlling and improving the nation's air quality via state and federal regulations. The United Stated Environmental Protection Agency ("USEPA") is charged with identifying air pollutants that endanger the public

health and welfare and with formulating National Ambient Air Quality Standards ("NAAQS") that specify the maximum permissible concentrations of those pollutants in the ambient air pursuant to Sections 108 and 109 of the CAA. 42 U.S.C. §§ 7408-7409.

A. 8-Hour Ozone NAAQS

Ozone is a gas composed of three atoms of oxygen. Ozone occurs both in the Earth's upper atmosphere and at ground level. VOM is a primary precursor to the formation of ground-level ozone, which is formed when oxides of nitrogen ("NOx") and VOM react in the atmosphere in the presence of sunlight. 71 *Fed. Reg.* 58746 (Oct. 5, 2006). Exposure to sufficient concentrations of ground-level ozone is associated with agricultural crop loss, damage to forests and ecosystems, and a variety of human health effects, including acute respiratory symptoms, increased susceptibility to respiratory infection, and pulmonary inflammation. 71 *Fed. Reg.* 58746.

In Illinois, there are two areas designated as nonattainment for an ozone standard: 1) the Chicago-Gary-Lake County, IL-IN designated area (classified as serious for the 2008 ozone standard and marginal for the 2015 standard); and 2) the St. Louis, MO-IL designated area (classified as marginal for the 2015 ozone standard). 40 CFR § 81.314.

B. CAA's Reasonably Available Control Technology ("RACT") Requirements

Section 172(c)(1) of the CAA provides, in pertinent part:

> (c) Nonattainment plan provisions
>
> The plan provisions (including plan items) required to be submitted under this part shall comply with each of the following:
>
> (1) In general
>
> Such plan provisions shall provide for the implementation of all reasonably available control measures as expeditiously as practicable (including such reductions in emissions from existing sources in the area

> as may be obtained through the adoption, at a minimum, of reasonably available control technology) and shall provide for attainment of the national primary ambient air quality standards.

42 U.S.C. § 7502(c)(1). A subset of reasonably available control measures is RACT, which is defined as the lowest emission limitation that a particular source can meet by applying a control technique that is reasonably available considering technological and economic feasibility. *See* 44 *Fed. Reg.* 53762 (September 17, 1979).

Additionally, Section 182(b) of the CAA provides, in pertinent part:

> (b) Moderate Areas
>
> Each State in which all or part of a Moderate Area is located shall, with respect to the Moderate Area, make the submissions described under subsection (a) of this section (relating to Marginal Areas), and shall also submit the revisions to the applicable implementation plan described under this subsection.
>
> …….
>
> (2) Reasonably available control technology
>
> The State shall submit a revision to the applicable implementation plan to include provisions to require the implementation of reasonably available control technology under section 7502(c)(1) of this title with respect to each of the following:
>
> (A) Each category of VOC sources in the area covered by a CTG document issued by the Administrator between November 15, 1990, and the date of attainment.

42 U.S.C. § 7511a(b)(2).

C. Aerospace Manufacturing and Rework Operations

In December 1997, the USEPA issued a control techniques guideline ("CTG") for coating operations and cleaning solvent use at aerospace manufacturing and rework facilities [*Control of Volatile Organic Compound Emissions from Coating Operations at Aerospace Manufacturing and Rework Operations,* EPA-453/R-97-004]. The 1997 aerospace CTG recommends RACT control measures and applicability thresholds for sources in the category.

See, Technical Support Document ("TSD") generally. Under Sections 172 and 182 of the CAA, described above, states were required to submit VOM regulations constituting RACT for aerospace manufacturing and rework operations in ozone nonattainment areas classified as moderate and above. Illinois did not adopt these VOM RACT rules at the time, however, because there were no sources that would have been subject to its requirements. *Id*. at 3.

This proposed rulemaking results from a recent communication from a source located in the Metro-East area indicating that it intends to expand its operations such that it would be subject to VOM RACT rules in 35 Ill. Adm. Code Section 219.204 for VOM emissions from coating and cleaning operations. *Id*. at 3. Because Illinois has previously not adopted VOM RACT rules specifically for aerospace facilities, the source would potentially be subject to more general regulations for miscellaneous metal parts and products coatings. *Id*. Requirements specific to aerospace operations, however, would be more appropriate. The aerospace CTG states on pages 2-7:

> *The quality of the coatings is critical to the airworthiness and safety of the final product. Aerospace vehicle manufacturing is strictly controlled by the Federal Aviation Administration, the Department of Defense, and specific customer requirements. Industry specifications for coatings are dictated by these requirements.*

Additionally, the aerospace CTG specifically recognizes that VOM RACT rules for miscellaneous metal parts and products coatings are not appropriate for aerospace applications, stating on page 1-1:

> *Section 183(b)(3) of the CAA requires the [US]EPA Administrator to issue a CTG for the control of VOC emissions from coatings and solvents used in the aerospace industry. This CTG is intended to supersede any potential applicability of the Miscellaneous Metal Part and Products CTG (RACT) requirements for manufacturing and rework operations of aerospace vehicles and* components.

Illinois is not currently required by the CAA to adopt these rules, as the Metro-East St. Louis ozone nonattainment area is classified as marginal for the 2015 ozone standard, not

moderate or above. Nonetheless, the Illinois EPA is now proposing to adopt rules implementing RACT-level control on certain aerospace facilities located in the Metro-East area to ensure that the most appropriate obligations are in place for the expanded aerospace facility. *Id*.at 9. As explained above, should Illinois not adopt the recommendations in the CTG, the source would be subject to more general coating limits found in Section 219.204(q), which per the CTG are inappropriate for aerospace operations. *Id*. at 3.

The aerospace CTG contains limits that are very specific to the types of coating used in the aerospace industry. *Id*. at 13. Accordingly, Illinois EPA is proposing amendments to 35 Ill. Adm. Code Parts 211 and 219 to implement the provisions of this CTG for aerospace manufacturing and rework facilities located in the Metro-East area.[1]

D. SIP Submittal

If adopted, the proposed rules will be submitted as a revision to Illinois' ozone State Implementation Plan ("SIP") for approval by the USEPA. SIP revisions are required to undergo public notice and opportunity for hearing before they are submitted to USEPA for approval under 40 CFR §51.102 and Appendix V to Part 51. The Board's procedural rules provide for notice that meets this requirement, as set forth under 35 Ill. Adm. Code 102.416. To be adequate, the notice must describe the revisions, in this case the amendatory provisions to Parts 211 and 219 and specify that the adopted rule will be submitted as a SIP revision to USEPA. Therefore, the Illinois EPA recommends that the Board include the following or similar language in its notice of hearing regarding this rulemaking:

> If adopted by the Board, the Illinois EPA will submit the proposed amendments to 35 Ill. Adm. Code Parts 211 and 219 to the United States Environmental Protection Agency ("USEPA") for review and approval as a revision to the Illinois' ozone State

[1] The Agency has not proposed similar amendments to 35 Ill. Adm. Code Part 218 because there are no known sources in the Chicago ozone nonattainment area to which the proposed rulemaking would apply.

> Implementation Plan ("SIP"). The revisions submitted to USEPA will include an analysis demonstrating that the proposal does not interfere with attainment or maintenance of any applicable National Ambient Air Quality Standard, reasonable further progress, or any other applicable requirement of the Clean Air Act ("CAA"). This notice is intended to satisfy the requirements of Section 110(l) of the CAA, 42 U.S.C. § 7410(l) (public notice for SIP revisions).

USEPA, Region V, has reviewed the Illinois EPA's proposal and indicated that it is likely approvable as a revision to Illinois' ozone SIP.

III. PURPOSE AND EFFECT OF THE PROPOSAL

This rulemaking proposal has been prepared in order to ensure that appropriate provisions are in place for aerospace operations located in the Metro-East area that have a potential to emit 25 tons per year or more of VOM. *Id*. at 4. Application of coatings and cleaning with solvents are the significant sources of VOM emissions from aerospace facilities. *Id*. The proposed regulations therefore establish VOM content limitations for aerospace coatings, including exemptions as provided for in the CTG. The regulations also establish recordkeeping and reporting obligations, requirements regarding coating application equipment, and requirements and work practice standards applicable to cleaning operations at aerospace facilities.

According to the aerospace CTG, the proposed rulemaking would result in VOM reductions of approximately 81% from uncontrolled VOM emissions and reduce VOM emissions from coating application and cleaning processes by 30 to 40 percent by implementing the proposed rule's work practice standards. However, the proposed regulations will not be applicable to any uncontrolled aerospace facility in the Metro-East area. Two of the three potentially affected sources identified in Section IV below are currently subject to other coating limits and work practices standards in 35 Ill. Adm. Code Part 219, so many of the reductions anticipated by the aerospace CTG have likely already occurred. Thus, Illinois does not anticipate significant emission reductions due to the adoption of the proposed rule. *Id*. at 12.

IV. GEOGRAPHIC REGIONS AND SOURCES AFFECTED

The geographic region subject to the proposed regulations is the Metro-East area, which for purposes of this rulemaking consists of Madison, Monroe, and St. Clair Counties.

The proposed rule will apply to aerospace manufacturing and rework operations that include the manufacture or rework of commercial, civil, or military aerospace vehicles or components at sources located in the Metro-East area that have a potential to emit 25 tons per year or more of VOM. The Illinois EPA researched and analyzed its emissions database and the classification of sources in the Metro-East area and determined that the following three sources would potentially be affected by the proposed regulations: Gulfstream Aerospace Services Corp. in Cahokia, Premiere Air Center Inc. in East Alton, and Boeing in Mascoutah. *Id*. at 4.

V. TECHNICAL FEASIBILITY AND ECONOMIC REASONABLENESS

In its TSD, the Illinois EPA demonstrates the technical feasibility and economic reasonableness of this proposed rulemaking. Coatings that comply with the aerospace coatings VOM content limitations contained in the Agency's proposal have been widely available and in use for many years. *Id*. at 7. In fact, to the Agency's knowledge, there are no non-compliant coatings on the market in common use. *Id*. Therefore, it is unlikely that there will be additional costs to affected sources associated with the proposed coating limits. *Id*.

Similarly, compliant coating application equipment and cleaning solvents are widely available and commonly utilized within the industry. *Id*. at 7-8.

VI. COMMUNICATION WITH INTERESTED PARTIES

The Illinois EPA engaged in outreach on this proposal. The Illinois EPA provided a draft of the proposed amendments to various stakeholders, including potentially impacted sources, environmental groups, groups or individuals who have expressed an interest in air-related issues

in the Metro-East area, and Region V of USEPA, soliciting comments on the proposal. The Agency received several comments and, in response, made various minor changes to its proposed rule. No comments were received opposing the rulemaking.

These regulations are being proposed after the interested parties have had an opportunity to review the proposal and discuss any issues with the Illinois EPA.

VII. SYNOPSIS OF TESTIMONY

The Illinois EPA plans to call Rory Davis, Regulatory Development Unit Manager, Air Quality Planning Section, Bureau of Air, Illinois EPA, as a witness at hearing. Mr. Davis will testify regarding the proposed amendments and will answer questions. Written testimony will be submitted prior to hearing in accordance with the Board's procedural rules.

VIII. CONCLUSION

WHEREFORE, for the reasons stated above, the Illinois EPA hereby submits this regulatory proposal and requests the Board adopt these proposed rules for the State of Illinois.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: */s/* Charles E. Matoesian___
Charles E. Matoesian
Assistant Counsel
Division of Legal Counsel

DATED: October 5, 2020
1021 North Grand Ave. East
P.O. Box 19276
Springfield, IL 62794-9276

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

PART 211
DEFINITIONS AND GENERAL PROVISIONS

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Section
211.101 Incorporated and Referenced Materials
211.102 Abbreviations and Conversion Factors

SUBPART B: DEFINITIONS

Section
211.121 Other Definitions
211.122 Definitions (Repealed)
211.125 Ablative Coating
211.130 Accelacota
211.150 Accumulator
211.170 Acid Gases
211.200 Acrylonitrile Butadiene Styrene (ABS) Welding
211.210 Actual Heat Input
211.230 Adhesive
211.233 Adhesion Primer
211.234 Adhesive Bonding Primer
211.235 Adhesive Primer
211.240 Adhesion Promoter
211.245 Adhesion Promoter for Aerospace Applications
211.250 Aeration
211.260 Aerosol Adhesive and Adhesive Primer
211.270 Aerosol Can Filling Line
211.271 Aerosol Coating
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211.275 Aerospace Flexible Primer
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211.278 Aerospace Pretreatment Coating
211.280 Aerospace Primer

211.284 Aerospace Specialty Coating
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211.300 Aircraft Fluid Systems
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211.310 Air Contaminant
211.330 Air Dried Coatings
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211.474 Alcohol
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211.485 Animal Pathological Waste
211.490 Annual Grain Through-Put
211.491 Antichafe Coating
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211.495 Anti-Glare/Safety Coating
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211.510 Application Area
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211.530 Architectural Coating
211.540 Architectural Structure
211.550 As Applied
211.560 As-Applied Fountain Solution
211.570 Asphalt
211.590 Asphalt Prime Coat
211.610 Automobile
211.630 Automobile or Light-Duty Truck Assembly Source or Automobile or Light-Duty Truck Manufacturing Plant
211.650 Automobile or Light-Duty Truck Refinishing
211.660 Automotive/Transportation Plastic Parts
211.665 Auxiliary Boiler
211.670 Baked Coatings
211.680 Bakery Oven
211.685 Basecoat/Clearcoat System
211.690 Batch Loading
211.695 Batch Operation

211.696 Batch Process Train
211.710 Bead-Dipping
211.712 Bearing Coating
211.715 Bedliner
211.730 Binders
211.735 Black Coating
211.737 Bonding Maskant
211.740 Brakehorsepower (rated-bhp)
211.750 British Thermal Unit
211.770 Brush or Wipe Coating
211.790 Bulk Gasoline Plant
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211.825 Camouflage Coating
211.830 Can
211.850 Can Coating
211.870 Can Coating Line
211.880 Cap Sealant
211.890 Capture
211.910 Capture Device
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211.950 Capture System
211.953 Carbon Adsorber
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211.1070 Cleaning Materials
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211.1312 Combined Cycle System
211.1315 Combustion Tuning
211.1316 Combustion Turbine
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211.1328 Common Stack
211.1329 Compatible Substrate Primer
211.1330 Complete Combustion
211.1350 Component
211.1370 Concrete Curing Compounds
211.1390 Concentrated Nitric Acid Manufacturing Process
211.1410 Condensate
211.1430 Condensible PM-10
211.1432 Confined Space
211.1435 Container Glass
211.1455 Contact Adhesive
211.1465 Continuous Automatic Stoking
211.1467 Continuous Coater
211.1470 Continuous Process
211.1490 Control Device
211.1510 Control Device Efficiency
211.1515 Control Period
211.1520 Conventional Air Spray
211.1530 Conventional Soybean Crushing Source
211.1550 Conveyorized Degreasing
211.1555 Corrosion Prevention System
211.1560 Cove Base
211.1565 Cove Base Installation Adhesive
211.1567 Critical Use and Line Sealer Maskant
211.1570 Crude Oil
211.1590 Crude Oil Gathering
211.1610 Crushing

211.1620 Cryogenic Flexible Primer
211.1625 Cryoprotective Coating
211.1630 Custody Transfer
211.1650 Cutback Asphalt
211.1655 Cyanoacrylate Adhesive
211.1670 Daily-Weighted Average VOM Content
211.1690 Day
211.1700 Deadener
211.1710 Degreaser
211.1730 Delivery Vessel
211.1735 Department of Defense Classified Coating
211.1740 Diesel Engine
211.1745 Digital Printing
211.1750 Dip Coating
211.1770 Distillate Fuel Oil
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211.1810 Dry Cleaning Operation or Dry Cleaning Facility
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211.1875 Elastomeric Materials
211.1876 Electric Dissipating Coating
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211.1920 Emergency or Standby Unit
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211.1950 Emission Unit
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211.2050 Ethanol Blend Gasoline
211.2055 Ethylene Propylenediene Monomer (DPDM) Roof Membrane
211.2070 Excess Air
211.2080 Excess Emissions
211.2090 Excessive Release
211.2110 Existing Grain-Drying Operation (Repealed)
211.2130 Existing Grain-Handling Operation (Repealed)
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211.APPENDIX A Rule into Section Table
211.APPENDIX B Section into Rule Table

AUTHORITY: Implementing Sections 9, 9.1, 9.9 and 10 and authorized by Sections 27 of the Environmental Protection Act [415 ILCS 5/9, 9.1, 9.9, 10, 27].

SOURCE: Adopted as Chapter 2: Air Pollution, Rule 201: Definitions, R71-23, 4 PCB 191, filed and effective April 14, 1972; amended in R74-2 and R75-5, 32 PCB 295, at 3 Ill. Reg. 5, p. 777, effective February 3, 1979; amended in R78-3 and 4, 35 PCB 75 and 243, at 3 Ill. Reg. 30, p. 124, effective July 28, 1979; amended in R80-5, at 7 Ill. Reg. 1244, effective January 21, 1983; codified at 7 Ill. Reg. 13590; amended in R82-1 (Docket A) at 10 Ill. Reg. 12624, effective July 7, 1986; amended in R85-21(A) at 11 Ill. Reg. 11747, effective June 29, 1987; amended in R86-34 at 11 Ill. Reg. 12267, effective July 10, 1987; amended in R86-39 at 11 Ill. Reg. 20804, effective December 14, 1987; amended in R82-14 and R86-37 at 12 Ill. Reg. 787, effective December 24, 1987; amended in R86-18 at 12 Ill. Reg. 7284, effective April 8, 1988; amended in R86-10 at 12 Ill. Reg. 7621, effective April 11, 1988; amended in R88-23 at 13 Ill. Reg. 10862, effective June 27, 1989; amended in R89-8 at 13 Ill. Reg. 17457, effective January 1, 1990; amended in R89-16(A) at 14 Ill. Reg. 9141, effective May 23, 1990; amended in R88-30(B) at 15 Ill. Reg. 5223, effective March 28, 1991; amended in R88-14 at 15 Ill. Reg. 7901, effective May 14, 1991; amended in R91-10 at 15 Ill. Reg. 15564, effective October 11, 1991; amended in R91-6 at 15 Ill. Reg. 15673, effective October 14, 1991; amended in R91-22 at 16 Ill. Reg. 7656, effective May 1, 1992; amended in R91-24 at 16 Ill. Reg. 13526, effective August 24, 1992; amended in R93-9 at 17 Ill. Reg. 16504, effective September 27, 1993; amended in R93-11 at 17 Ill. Reg. 21471, effective December 7, 1993; amended in R93-14 at 18 Ill. Reg. 1253, effective January 18, 1994; amended in R94-12 at 18 Ill. Reg. 14962, effective September 21, 1994; amended in R94-14 at 18 Ill. Reg. 15744, effective October 17, 1994; amended in R94-15 at 18 Ill. Reg. 16379, effective October 25, 1994; amended in R94-16 at 18 Ill. Reg. 16929, effective November 15, 1994; amended in R94-21, R94-31 and R94-32 at 19 Ill. Reg. 6823, effective May 9, 1995; amended in R94-33 at 19 Ill. Reg. 7344, effective May 22, 1995; amended in R95-2 at 19 Ill. Reg. 11066, effective July 12, 1995; amended in R95-16 at 19 Ill. Reg. 15176, effective October 19, 1995; amended in R96-5 at 20 Ill. Reg. 7590, effective May 22, 1996; amended in R96-16 at 21 Ill. Reg. 2641, effective February 7, 1997; amended in R97-17 at 21 Ill. Reg. 6489, effective May 16, 1997; amended in R97-24 at 21 Ill. Reg. 7695, effective June 9, 1997; amended in R96-17 at 21 Ill. Reg. 7856, effective June 17, 1997; amended in R97-31 at 22 Ill. Reg. 3497, effective February 2, 1998; amended in R98-17 at 22 Ill. Reg. 11405, effective June 22, 1998; amended in R01-9 at 25 Ill. Reg. 108, effective December 26, 2000; amended in R01-11 at 25 Ill. Reg. 4582, effective March 15, 2001; amended in R01-17 at 25 Ill. Reg. 5900, effective April 17, 2001; amended in R05-16 at 29 Ill. Reg. 8181, effective May 23, 2005; amended in R05-11 at 29 Ill. Reg. 8892, effective June 13, 2005; amended in

R04-12/20 at 30 Ill. Reg. 9654, effective May 15, 2006; amended in R07-18 at 31 Ill. Reg. 14254, effective September 25, 2007; amended in R08-6 at 32 Ill. Reg. 1387, effective January 16, 2008; amended in R07-19 at 33 Ill. Reg. 11982, effective August 6, 2009; amended in R08-19 at 33 Ill. Reg. 13326, effective August 31, 2009; amended in R10-7 at 34 Ill. Reg. 1391, effective January 11, 2010; amended in R10-8 at 34 Ill. Reg. 9069, effective June 25, 2010; amended in R10-20 at 34 Ill. Reg. 14119, effective September 14, 2010; amended in R11-23 at 35 Ill. Reg. 13451, effective July 27, 2011; amended in R12-24 at 37 Ill. Reg. 1662, effective January 28, 2013; amended in R13-1 at 37 Ill. Reg. 1913, effective February 4, 2013; amended in R14-7 at 37 Ill. Reg. 19824, effective November 27, 2013; amended in R14-16 at 38 Ill. Reg. 12876, effective June 9, 2014; amended in R14-16 at 39 Ill. Reg. 5410, effective March 24, 2015; amended at 41 Ill. Reg. 1096, effective January 23, 2017; amended in R17-09 at 41 Ill. Reg. 4173, effective March 24, 2017; amended in R17-11 at 41 Ill. Reg. 13389, effective October 23, 2017~~.~~; amended at_____, effective_____.

SUBPART B: DEFINITIONS

Section 211.125 Ablative Coating

"Ablative coating" means a coating that chars when exposed to open flame or extreme temperatures, as would occur during the failure of an engine casing or during aerodynamic heating. The ablative char surface serves as an insulative barrier, protecting adjacent components from the heat or open flame.

(Source: Added at _____, effective_____)

Section 211.234 Adhesive Bonding Primer

"Adhesive bonding primer" means a primer applied in a thin film to aerospace components for the purpose of corrosion inhibition and increased adhesive bond strength by attachment. There are two categories of adhesive bonding primers: primers with a design cure at 250°F or below and primers with a design cure above 250°F.

(Source: Added at _____, effective_____)

Section 211.245 Adhesion Promoter for Aerospace Applications

"Adhesion promoter for aerospace applications" means a very thin coating applied to a substrate to promote wetting and form a chemical bond with the subsequently applied material.

(Source: Added at _____, effective_____)

Section 211.271 Aerosol Coating

"Aerosol coating" means a hand-held, pressurized, nonrefillable container that expels an adhesive or a coating in a finely divided spray when a valve on the container is depressed.

(Source: Added at _____, effective_____)

Section 211.272 Aerospace Coating

"Aerospace coating" means a material that is applied to the surface of an aerospace vehicle or component to form a decorative, protective, or functional solid film, or the solid film itself.

(Source: Added at _____, effective_____)

Section 211.273 Aerospace Coating Operation

"Aerospace coating operation" means using a spray booth, tank, or other enclosure or any area, such as a hangar, for applying a single type of aerospace coating at an aerospace facility. Using the same spray booth for applying another type of coating (e.g., a topcoat after having previously applied a primer) constitutes a separate aerospace coating operation for which compliance determinations are performed separately.

(Source: Added at _____, effective_____)

Section 211.275 Aerospace Flexible Primer

"Aerospace flexible primer" means a primer for aerospace use that meets flexibility requirements such as those needed for adhesive bond-primed fastener heads or on surfaces expected to contain fuel. The aerospace flexible coating is required because it provides a compatible, flexible substrate over bonded sheet rubber and rubber-type coatings as well as a flexible bridge between the fasteners, skin, and skin-to-skin joints on outer aircraft skins. This flexible bridge allows more topcoat flexibility around fasteners and decreases the chance of the topcoat cracking around the fasteners. The result is better corrosion resistance.

(Source: Added at _____, effective_____)

Section 211.277 Aerospace Facility

"Aerospace facility" means any facility that produces, reworks, or repairs any commercial, civil, or military aerospace vehicle or component.

(Source: Added at _____, effective_____)

Section 211.278 Aerospace Pretreatment Coating

"Aerospace pretreatment coating" means an organic coating that contains at least 0.5 percent acids by weight and is applied directly to metal or composite surfaces to provide surface etching, corrosion resistance, adhesion, and ease of stripping.

(Source: Added at _____, effective_____)

Section 211.280 Aerospace Primer

"Aerospace primer" means the first layer and any subsequent layers of identically formulated coating applied to the surface of an aerospace vehicle or component. Primers are typically used for corrosion prevention, protection from the environment, functional fluid resistance, and adhesion of subsequent coatings. Primers that are listed as specialty coatings in 35 Ill. Adm. Code 219.204(r)(2) are not included under this definition.

(Source: Added at _____, effective_____)

Section 211.284 Aerospace Specialty Coating

"Aerospace specialty coating" means a coating that, even though it meets the definition of a primer, topcoat, or self-priming topcoat, has additional performance criteria beyond those of primers, topcoats, and self-priming topcoats for specific applications. These performance criteria may include, but are not limited to, temperature or fire resistance, substrate compatibility, antireflection, temporary protection or marking, sealing, adhesively joining substrates, or enhanced corrosion protection. Aerospace specialty coatings are listed in 35 Ill. Adm. Code 219.204(r)(2).

(Source: Added at _____, effective_____)

Section 211.289 Aerospace Vehicle or Component

"Aerospace vehicle or component" means any fabricated part, processed part, assembly of parts, or completed unit, with the exception of electronic components, of any aircraft including but not limited to airplanes, helicopters, missiles, rockets, and space vehicles. This term includes any raw material, partial or completed fabricated part, assembly of parts, or completed unit of any aircraft, helicopter, missile, or space vehicle, including mockups and prototypes, models, molds, jigs, tooling, hardware jackets, and test coupons.

(Source: Added at _____, effective_____)

Section 211.300 Aircraft Fluid Systems

"Aircraft fluid systems" means those systems that handle hydraulic fluids, fuel, cooling fluids, or oils.

(Source: Added at _____, effective_____)

Section 211.303 Aircraft Transparencies

"Aircraft transparencies" means the aircraft windshield, canopy, passenger windows, lenses and other components which are constructed of transparent materials.

(Source: Added at _____, effective_____)

Section 211.491 Antichafe Coating

"Antichafe coating" means a coating applied to areas of moving aerospace components that may rub during normal operations or installation.

(Source: Added at _____, effective_____)

Section 211.500 Antique Aerospace Vehicle or Component

"Antique aerospace vehicle or component" means an aircraft or component thereof that is at least 30 years old and is not routinely in commercial or military service in the capacity for which it was designed.

(Source: Added at _____, effective_____)

Section 211.520 Aqueous Cleaning Solvent

"Aqueous cleaning solvent" means a cleaning solvent in which water is the primary ingredient (at least 80 percent of cleaning solvent solution as applied must be water). Detergents, surfactants, and bioenzyme mixtures and nutrients may be combined with the water along with a variety of additives, such as organic solvents (e.g., high boiling point alcohols), builders, saponifiers, inhibitors, emulsifiers, pH buffers, and antifoaming agents. Aqueous solutions must have a flash point greater than 93°C (200°F) (as reported by the manufacturer), and the solution must be miscible with water.

(Source: Added at _____, effective_____)

Section 211.712 Bearing Coating

"Bearing coating" means a coating applied to an antifriction bearing, a bearing housing, or the area adjacent to such a bearing in order to facilitate bearing function or to protect base material from excessive wear. A material shall not be classified as a bearing coating if it can also be classified as a dry lubricative material or a solid film lubricant.

(Source: Added at _____, effective_____)

Section 211.737 Bonding Maskant

"Bonding maskant" means a temporary coating used to protect selected areas of aerospace parts from strong acid or alkaline solutions during processing for bonding.

(Source: Added at _____, effective_____)

Section 211.975 Chemical Agent-Resistant Coating

"Chemical agent-resistant coating" means an exterior topcoat designed to withstand exposure to chemical warfare agents or the decontaminants used on these agents.

(Source: Added at _____, effective_____)

Section 211.985 Chemical Milling Maskant

"Chemical milling maskant" means a coating that is applied directly to aluminum components to protect surface areas when chemical milling the component with a Type I or II etchant. Type I chemical milling maskants are used with a Type I etchant and Type II chemical milling maskants are used with a Type II etchant. This definition does not include bonding maskants; critical use and line sealer maskants; seal coat maskants; maskants that must be used with a combination of Type I or II etchants and any of the above types of maskants (i.e., bonding, critical use and line sealer, and seal coat); or maskants that are listed as aerospace specialty coatings in 35 Ill. Adm. Code 219.204(r)(2).

(Source: Added at _____, effective_____)

Section 211.1095 Clear Coating for Aerospace Applications

"Clear coating for aerospace applications" means a transparent coating usually applied over a colored opaque coating, metallic substrate, or placard to give improved gloss and protection to the color coat. In some cases, a clearcoat refers to any transparent coating without regard to substrate.

(Source: Added at _____, effective_____)

Section 211.1326 Commercial Exterior Aerodynamic Structure Primer

"Commercial exterior aerodynamic structure primer" means a primer used on aerodynamic components and structures that protrude from the fuselage, such as wings and attached

components, control surfaces, horizontal stabilizers, vertical fins, wing-to-body fairings, antennae, and landing gear and doors, for the purpose of extended corrosion protection and enhanced adhesion.

(Source: Added at _____, effective_____)

Section 211.1327 Commercial Interior Adhesive

"Commercial interior adhesive" means materials used in the bonding of passenger cabin interior components. These components must meet the Federal Aviation Administration fireworthiness requirements.

(Source: Added at _____, effective_____)

Section 211.1329 Compatible Substrate Primer

"Compatible substrate primer" means either compatible epoxy primer or adhesive primer. Compatible epoxy primer is primer that is compatible with the filled elastomeric coating and is epoxy-based. The compatible substrate primer is an epoxypolyamide primer used to promote adhesion of elastomeric coatings such as impact-resistant coatings. Adhesive primer is a coating that (1) inhibits corrosion and serves as a primer applied to bare metal surfaces or prior to adhesive application, or (2) is applied to surfaces that can be expected to contain fuel. Fuel tank coatings are excluded from this category.

(Source: Added at _____, effective_____)

Section 211.1432 Confined Space

"Confined space" means a space that is large enough and so configured that an employee can bodily enter and perform assigned work; has limited or restricted means for entry or exit (for example, fuel tanks, fuel vessels, and other spaces that have limited means of entry); and is not suitable for continuous employee occupancy.

(Source: Added at _____, effective_____)

Section 211. 1555 Corrosion Prevention System

"Corrosion prevention system" means a coating system that provides corrosion protection by displacing water and penetrating mating surfaces, forming a protective barrier between the metal surface and moisture. Coatings containing oils or waxes are excluded from this definition.

(Source: Added at _____, effective_____)

Section 211.1567 Critical Use and Line Sealer Maskant

"Critical use and line sealer maskant" means a temporary coating, not covered under other maskant categories, used to protect selected areas of aerospace parts from strong acid or alkaline solutions such as those used in anodizing, plating, chemical milling, and processing of magnesium, titanium, or high strength steel; high-precision aluminum chemical milling of deep cuts; and aluminum chemical milling of complex shapes. Materials used for repairs or to bridge gaps left by scribing operations (i.e., line sealer) are also included in this definition.

(Source: Added at _____, effective_____)

Section 211.1620 Cryogenic Flexible Primer

"Cryogenic flexible primer" means a primer designed to provide corrosion resistance, flexibility, and adhesion of subsequent coating systems when exposed to loads up to and surpassing the yield point of the substrate at cryogenic temperatures (-275°F and below).

(Source: Added at _____, effective_____)

Section 211.1625 Cryoprotective Coating

"Cryoprotective coating" means a coating that insulates cryogenic or subcooled surfaces to limit propellant boil-off, maintain structural integrity of metallic structures during ascent or re-entry, and prevent ice formation.

(Source: Added at _____, effective_____)

Section 211.1735 Department of Defense Classified Coating

"Department of Defense classified coating" means a coating that has been determined pursuant to Executive Order 13526, "Classified National Security Information," December 29, 2009, or any successor order to require protection against unauthorized disclosure and is marked to indicate its classified status when in documentary form.

(Source: Added at _____, effective_____)

Section 211.1820 Dry Lubricative Material for Aerospace Applications

"Dry lubricative material for aerospace applications" means a coating consisting of lauric acid, cetyl alcohol, waxes, or other noncrosslinked or resin-bound materials that act as a dry lubricant.

(Source: Added at _____, effective_____)

Section 211.1895 Electrostatic Discharge and Electromagnetic Interference Coating

"Electrostatic discharge and electromagnetic interference coating" means a coating applied to space vehicles, missiles, aircraft radomes, and helicopter blades to disperse static energy or reduce electromagnetic interference.

(Source: Added at _____, effective_____)

Section 211.1915 Elevated-Temperature Skydrol-Resistant Commercial Primer

"Elevated-temperature Skydrol-resistant commercial primer" means a primer applied primarily to commercial aircraft (or commercial aircraft adapted for military use) that must withstand immersion in phosphate-ester hydraulic fluid (Skydrol 500b or equivalent) at 150°F or higher for at least 1,000 hours.

(Source: Added at _____, effective_____)

Section 211.2035 Epoxy Polyamide Topcoat

"Epoxy polyamide topcoat" means a coating used where harder films are required or in some areas where engraving is accomplished in camouflage colors.

(Source: Added at _____, effective_____)

Section 211.2180 Exterior Primer for Large Commercial Aircraft

"Exterior primer for large commercial aircraft" means an aerospace primer, applied to an aircraft of more than 110,000 pounds, maximum certified take-off weight manufactured for non-military use.

(Source: Added at _____, effective_____)

Section 211.2340 Fire-Resistant Interior Coating

"Fire-resistant interior coating" means (1) for civilian aircraft, fire-resistant interior coatings are used on passenger cabin interior parts that are subject to the Federal Aviation Administration fireworthiness requirements; (2) for military aircraft, fire-resistant interior coatings are used on parts subject to the flammability requirements of military specifications for aircraft; and (3) for space applications, fire-resistant interior coatings are used on parts subject to NASA flammability requirements for space shuttles and space stations.

(Source: Added at _____, effective_____)

Section 211.2400 Flight Test Coating

"Flight test coating" means a coating applied to aircraft other than missiles or single-use aircraft prior to flight testing to protect the aircraft from corrosion and to provide required marking during flight test evaluation.

(Source: Added at _____, effective_____)

Section 211.2412 Flush Cleaning at Aerospace Facilities

"Flush cleaning at aerospace facilities" means removal of contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle or component or coating equipment by passing solvent over, into, or through the item being cleaned. The solvent may simply be poured into the item being cleaned and then drained, or assisted by air or hydraulic pressure, or by pumping. Hand-wipe cleaning operations where wiping, scrubbing, mopping, or other hand action are used are not included in this definition.

(Source: Added at _____, effective_____)

Section 211.2480 Fuel Tank Adhesive for Aerospace Applications

"Fuel tank adhesive for aerospace applications" means an adhesive used to bond components exposed to fuel and must be compatible with fuel tank coatings.

(Source: Added at _____, effective_____)

Section 211.2485 Fuel Tank Coating for Aerospace Applications

"Fuel tank coating for aerospace applications" means a coating applied to fuel tank components on an aerospace vehicle for the purpose of corrosion and/or bacterial growth inhibition and to assure sealant adhesion in extreme environmental conditions.

(Source: Added at _____, effective_____)

Section 211.2612 General Aviation

"General aviation" means that segment of civil aviation that encompasses all facets of aviation except air carriers, commuters, and military. General aviation includes charter and corporate-executive transportation, instruction, rental, aerial application, aerial observation, business, pleasure, and other special uses.

(Source: Added at _____, effective_____)

Section 211.2613 General Aviation Rework Facility

"General aviation rework facility" means any aerospace facility with the majority of its revenues resulting from the reconstruction, repair, maintenance, repainting, conversion, or alteration of general aviation aerospace vehicles or components.

(Source: Added at _____, effective_____)

Section 211.2795 Hand-Wipe Cleaning Operation at Aerospace Facilities

"Hand-wipe cleaning at aerospace facilities" means removing contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle or component by physically rubbing it with a material such as a rag, paper, or cotton swab that has been moistened with a cleaning solvent.

(Source: Added at _____, effective_____)

Section 211.2980 High Temperature Coating

Except as specified below, "~~H~~high temperature coating" means, for purposes of 35 Ill. Adm. Code 218 and 219, a coating that is certified to withstand a temperature of 538°C (1000°F) for 24 hours.

"High temperature coating" means, for purposes of 35 Ill. Adm. Code 219.204(r), a coating designed to withstand temperatures of more than 350°F.

(Source: Amended at _____, effective_____)

Section 211.3160 Insulation Covering

"Insulation covering" means material that is applied to foam insulation to protect the insulation from mechanical or environmental damage.

(Source: Added at _____, effective_____)

Section 211.3180 Intermediate Release Coating

"Intermediate release coating" means a thin coating applied beneath topcoats to assist in removing the topcoat in depainting operations and generally to allow the use of less hazardous depainting methods.

(Source: Added at _____, effective_____)

Section 211.3230 Lacquers

"Lacquers" means, with respect to coating of wood furniture, any clear wood finishes formulated with nitrocellulose or synthetic resins to dry by evaporation without chemical reaction, including clear lacquer sanding sealers.

For purposes of 35 Ill. Adm. Code 219.204(r), "lacquers" means a clear or pigmented coating formulated with a nitrocellulose or synthetic resin to dry by evaporation without a chemical reaction. Lacquers are resoluble in their original solvent.

(Source: Amended at _____, effective_____)

Section 211.3360 Limited Access Space

"Limited access space" means internal surfaces or passages of an aerospace vehicle or component that cannot be reached without the aid of an airbrush or a spray gun extension for the application of coatings.

(Source: Added at _____, effective_____)

Section 211.3755 Metalized Epoxy Coating

"Metalized epoxy coating" means an epoxy coating that contains relatively large quantities of metallic pigmentation for appearance and/or added protection.

(Source: Added at _____, effective_____)

Section 211.3850 Miscellaneous Metal Parts and Products Coating

"Miscellaneous metal parts and products coating" means, for purposes of 35 Ill. Adm. Code 218 and 219, any protective, decorative or functional coating applied onto the surface of any metal part or metal product, even if attached to or combined with a nonmetal part or product;

a) Including but not limited to underbody anti-chip (e.g., underbody plastisol) automobile and light-duty truck coatings;

b) But not including the following coatings which are subject to separate regulations: can coatings; coil coatings; metal furniture coatings; large appliance coatings; magnet wire coatings; and prime coat, primer surfacer coat, topcoat, and final repair coat for automobile and light-duty trucks; and aerospace coatings subject to the requirements of Section 219.204(r); and

c) Not including the following coatings: architectural coatings, automobile or light-duty truck refinishing coatings, coatings applied to the exterior of marine vessels, coatings applied to the exterior of airplanes, customized topcoat for automobiles and

trucks if production is less than thirty-five vehicles per day, and high temperature aluminum coating applied to diesel-electric locomotives in Cook County.

(Source: Amended at _____, effective_____)

Section 211.3870 Miscellaneous Metal Parts or Products Coating Line

"Miscellaneous metal parts or products coating line" means, for purposes of 35 Ill. Adm. Code 218 and 219, a coating line in which any protective, decorative, or functional coating is applied onto the surface of any metal part or metal product, even if attached to or combined with a nonmetal part or product;

a) Including but not limited to underbody anti-chip (e.g., underbody plastisol) automobile and light-duty truck coatings;

b) But not including the following coatings which are subject to separate regulations: can coatings;~~,~~ coil coatings;~~,~~ metal furniture coatings;~~,~~ large appliance coatings;~~,~~ magnet wire coatings;~~,~~ ~~and~~ prime coat, primer surfacer coat, topcoat and final repair coat for automobile and light-duty trucks; and aerospace coatings subject to the requirements of Section 219.204(r); and

c) Not including the following coatings: architectural coatings, automobile or light-duty truck refinishing coatings, coatings applied to the exterior of marine vessels, coatings applied to the exterior of airplanes, customized topcoat for automobiles and trucks if production is less than thirty-five vehicles per day, and high temperature aluminum coating applied to diesel-electric locomotives in Cook County.

(Source: Amended at _____, effective_____)

Section 211.3920 Mold Release Coating for Aerospace Applications

"Mold release coating for aerospace applications" means a coating applied to a mold surface to prevent the molded piece from sticking to the mold as it is removed.

(Source: Added at _____, effective_____)

Section 211.4066 Nonstructural Adhesive for Aerospace Applications

"Nonstructural adhesive for aerospace applications" means an adhesive that bonds nonload bearing aerospace components in noncritical applications and is not covered in any other specialty adhesive categories listed in 35 Ill. Adm. Code 219.204(r)(2).

(Source: Added at _____, effective_____)

Section 211.4215 Optical Antireflection Coating

"Optical antireflection coating" means a coating with a low reflectance in the infrared and visible wavelength ranges that is used for antireflection on or near optical and laser hardware.

(Source: Added at _____, effective_____)

Section 211.4535 Part Marking Aerospace Coating

"Part marking aerospace coating" means coatings or inks used to make identifying markings on aerospace materials, components, or assemblies. These markings may be either permanent or temporary.

(Source: Added at _____, effective_____)

Section 211.5072 Primer for General Aviation Rework Facility

"Primer for general aviation rework facility" means an aerospace primer applied at a general aviation rework facility.

(Source: Added at _____, effective_____)

Section 211.5336 Radiation-Effect or Electric Coating

"Radiation-effect or electric coating" means a coating or coating system engineered to interact, through absorption or reflection, with specific regions of the electromagnetic energy spectrum, such as the ultraviolet, visible, infrared, or microwave regions. Uses include, but are not limited to, lightning strike protection, electromagnetic pulse protection, and radar avoidance. Coatings that have been designated as "classified" by the Department of Defense are exempt from this definition.

(Source: Added at _____, effective_____)

Section 211.5338 Radome

"Radome" means, for purposes of the definitions of "Electrostatic Discharge and Electromagnetic Interference" and "Rain Erosion-Resistant Coating," the nonmetallic protective housing for electromagnetic transmitters and receivers (e.g., radar, electronic countermeasures, etc.).

(Source: Added at _____, effective_____)

Section 211.5339 Rain Erosion-Resistant Coating

"Rain erosion-resistant coating" means a coating or coating system used to protect the leading edges of aerospace parts such as flaps, stabilizers, radomes, engine inlet nacelles, etc. against erosion caused by rain impact during flight.

(Source: Added at _____, effective_____)

Section 211.5585 Research and Development Operation

"Research and development operation" means, for purposes of 35 Ill. Adm. Code 218.187, ~~and~~ 219.187, and 219.204(r), an operation whose purpose is for research and development of new processes and products, that is conducted under the close supervision of technically trained personnel, and that is not involved in the manufacture of final or intermediate products for commercial purposes, except in a de minimis manner.

(Source: Amended at _____, effective_____)

Section 211.5675 Rocket Motor Bonding Adhesive

"Rocket motor bonding adhesive" means an adhesive used in rocket motor bonding applications.

(Source: Added at _____, effective_____)

Section 211.5680 Rocket Motor Nozzle Coating

"Rocket motor nozzle coating" means a catalyzed epoxy coating system used in elevated temperature applications on rocket motor nozzles.

(Source: Added at _____, effective_____)

Section 211.5805 Rubber-Based Adhesive

"Rubber-based adhesive" means a quick setting contact cement that provides a strong, yet flexible, bond between two mating surfaces that may be of dissimilar materials.

(Source: Added at _____, effective_____)

Section 211.5855 Scale Inhibitor

"Scale inhibitor" means, for the purposes of 35 Ill. Adm. Code Section 219.204(r), a coating that is applied to the surface of a part prior to thermal processing to inhibit the formation of scale.

(Source: Added at _____, effective_____)

Section 211.5883 Screen Print Ink for Aerospace Applications

"Screen print ink for aerospace applications" means, for purposes of 35 Ill. Adm. Code 219.204(r), an ink used in screen printing processes during fabrication of decorative laminates and decals at aerospace facilities.

(Source: Added at _____, effective_____)

Section 211.5887 Sealant for Aerospace Applications

"Sealant for aerospace applications" means a material used to prevent the intrusion of water, fuel, air, or other liquids or solids from certain areas of aerospace vehicles or components. There are two categories of sealants: extrudable/rollable/brushable sealants and sprayable sealants.

(Source: Added at _____, effective_____)

Section 211.5895 Seal Coat Maskant

"Seal coat maskant" means an overcoat applied over a maskant to improve abrasion and chemical resistance during production operations.

(Source: Added at _____, effective_____)

Section 211.5900 Self-Priming Topcoat for Aerospace Applications

"Self-priming topcoat for aerospace applications" means a topcoat that is applied directly to an uncoated aerospace vehicle or component for purposes of corrosion prevention, environmental protection, and functional fluid resistance. More than one layer of identical coating formulation may be applied to the vehicle or component. Self-priming topcoats for general aviation rework facilities are not included in this definition.

(Source: Added at _____, effective_____)

Section 211.5905 Self-Priming Topcoat for General Aviation Rework Facility

"Self-priming topcoat for general aviation rework facility" means a self-priming topcoat applied at a general aviation rework facility.

(Source: Added at _____, effective_____)

Section 211.5907 Semi-Aqueous Cleaning Solvent

"Semi-aqueous cleaning solvent" means a solution in which water is a primary ingredient (60 percent of the solvent solution, as applied must be water).

(Source: Added at_____, effective_____)

Section 211.6013 Silicone Insulation Material

"Silicone insulation material" means an insulating material applied to exterior metal aerospace surfaces for protection from high temperatures caused by atmospheric friction or engine exhaust. These materials differ from ablative coatings in that they are not "sacrificial."

(Source: Added at _____, effective_____)

Section 211.6055 Smoothing and Caulking Compounds

"Smoothing and caulking compounds" means semi-solid materials which are applied by hand application methods and are used to aerodynamically smooth exterior vehicle surfaces or fill cavities such as bolt hole accesses. A material shall not be classified as a smoothing and caulking compound if it can also be classified as a sealant.

(Source: Added at _____, effective_____)

Section 211.6064 Solid Film Lubricant

"Solid film lubricant" means, for purposes of 35 Ill. Adm. Code 219.204(r), a very thin coating consisting of a binder system containing as its chief pigment material one or more of the following: molybdenum, graphite, polytetrafluoroethylene (PTFE), or other solids that act as a dry lubricant between faying (i.e., closely or tightly fitting) surfaces in aerospace applications.

(Source: Added at _____, effective_____)

Section 211.6133 Space Vehicle

"Space vehicle" means a man-made device, either manned or unmanned, designed for operation beyond earth's atmosphere. This definition includes integral equipment such as models, mock-ups, prototypes, molds, jigs, tooling, hardware jackets, and test coupons. Also included is auxiliary equipment associated with test, transport, and storage, that through contamination can compromise the space vehicle performance.

(Source: Added at _____, effective_____)

Section 211.6137 Specialized Function Coating

"Specialized function coating" means, for purposes of 35 Ill. Adm. Code Section 219.204(r), a coating that fulfills extremely specific engineering requirements in aerospace applications that are limited in use and are characterized by low volume usage. This category excludes coatings covered in other specialty coating categories in 35 Ill. Adm. Code 219.204(r)(2).

(Source: Added at _____, effective_____)

Section 211.6426 Structural Autoclavable Adhesive for Aerospace Applications

"Structural autoclavable adhesive for aerospace applications" means an adhesive used to bond load-carrying aerospace components that is cured by heat and pressure in an autoclave.

(Source: Added at _____, effective_____)

Section 211.6428 Structural Nonautoclavable Adhesive for Aerospace Applications

"Structural nonautoclavable adhesive for aerospace applications" means an adhesive cured under ambient conditions that is used to bond load-carrying aerospace components or other critical functions, such as nonstructural bonding in the proximity of engines.

(Source: Added at _____, effective_____)

Section 211.6575 Temporary Protective Coating for Aerospace Applications

"Temporary protective coating for aerospace applications" means a coating applied to aerospace surfaces to provide scratch or corrosion protection during manufacturing, storage, or transportation. Two types include peelable protective coatings and alkaline removable coatings. These materials are not intended to protect against strong acid or alkaline solutions. Coatings that provide this type of protection from chemical processing are not included in this category.

(Source: Added at _____, effective_____)

Section 211.6583 Thermal Control Coating for Aerospace Applications

"Thermal control coating for aerospace applications" means a coating formulated with specific thermal conductive or radiative properties to permit temperature control of the aerospace substrate.

(Source: Added at _____, effective_____)

Section 211.6670 Topcoat

"Topcoat" means:

Except as used in 35 Ill. Adm. Code 218.204(a)(2) and (q)(5) and 219.204(a)(2), ~~and~~ (q)(5), and (r), a coating applied to a substrate in a multiple coat operation other than prime coat, primer surfacer coat or final repair coat;

For purposes of 35 Ill. Adm. Code 218.204(a)(2) and 219.204(a)(2), the final coating system applied to provide the final color and/or a protective finish. The topcoat may be a monocoat color or basecoat/clearcoat system. In-line repair and two-tone are part of topcoat;

For purposes of 35 Ill. Adm. Code 218.204(q)(5) and 219.204(q)(5), any final coating applied to the interior or exterior of a pleasure craft.

For the purposes of 35 Ill. Adm. Code 219.204(r), a coating that is applied over a primer on an aerospace vehicle or component for appearance, identification, camouflage, or protection. Topcoats that are listed as specialty coatings in 35 Ill. Adm. Code in 219.204(r)(2) are not included under this definition.

(Source: Amended at _____, effective_____)

Section 211.6685 Topcoat for General Aviation Rework Facility

"Topcoat for general aviation rework facility" means a topcoat applied at a general aviation rework facility.

(Source: Added at _____, effective_____)

Section 211.6720 Touch-Up Coating

"Touch-up coating" means:

Except as used in 35 Ill. Adm. Code 218.204(q), 219.204(q), and 219.204(r), ~~for purposes of motor vehicle refinishing operations,~~ a coating applied by brush or hand held, non-refillable aerosol cans to repair minor surface damage and imperfections;

For purposes of 35 Ill. Adm. Code 218.204(q), ~~and~~ 219.204(q), and 219.204(r), a coating used to cover minor coating imperfections appearing after the main coating operation.

(Source: Amended at _____, effective_____)

Section 211.7260 Wet Fastener Installation Coating

"Wet fastener installation coating" means a primer or sealant applied by dipping, brushing, or daubing to fasteners that are installed before the coating is cured.

(Source: Added at _____, effective_____)

Section 211.7275 Wing Coating

"Wing coating" means a corrosion-resistant topcoat that is resilient enough to withstand the flexing of the wings.

(Source: Added at _____, 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

SUBPART A: GENERAL PROVISIONS

SUBPART B: ORGANIC EMISSIONS FROM STORAGE AND LOADING OPERATIONS

SUBPART C: ORGANIC EMISSIONS FROM MISCELLANEOUS EQUIPMENT

SUBPART E: SOLVENT CLEANING

SUBPART F: COATING OPERATIONS

SUBPART G: USE OF ORGANIC MATERIAL

SUBPART H: PRINTING AND PUBLISHING

SUBPART Q: SYNTHETIC ORGANIC CHEMICAL AND POLYMER MANUFACTURING PLANT

SUBPART R: PETROLEUM REFINING AND
RELATED INDUSTRIES; ASPHALT MATERIALS

SUBPART S: RUBBER AND MISCELLANEOUS PLASTIC PRODUCTS

SUBPART T: PHARMACEUTICAL MANUFACTURING

SUBPART V: BATCH OPERATIONS AND AIR OXIDATION PROCESSES

SUBPART W: AGRICULTURE

SUBPART X: CONSTRUCTION

SUBPART Y: GASOLINE DISTRIBUTION

SUBPART Z: DRY CLEANERS

SUBPART AA: PAINT AND INK MANUFACTURING

SUBPART BB: POLYSTYRENE PLANTS

SUBPART FF: BAKERY OVENS

SUBPART GG: MARINE TERMINALS

SUBPART HH: MOTOR VEHICLE REFINISHING

SUBPART II: FIBERGLASS BOAT MANUFACTURING MATERIALS

SUBPART JJ: MISCELLANEOUS INDUSTRIAL ADHESIVES

SUBPART PP: MISCELLANEOUS FABRICATED PRODUCT MANUFACTURING PROCESSES

SUBPART QQ: MISCELLANEOUS FORMULATION MANUFACTURING PROCESSES

SUBPART RR: MISCELLANEOUS ORGANIC CHEMICAL MANUFACTURING PROCESSES

SUBPART TT: OTHER EMISSION UNITS

SUBPART UU: RECORDKEEPING AND REPORTING

219.APPENDIX D	Coefficients for the Total Resource Effectiveness Index (TRE) Equation
219.APPENDIX E	List of Affected Marine Terminals
219.APPENDIX G	TRE Index Measurements for SOCMI Reactors and Distillation Units
219.APPENDIX H	Baseline VOM Content Limitations for Subpart F, Section 219.212 Cross-Line Averaging

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; amended in R10-10 at 34 Ill. Reg. 5392, effective March 23, 2010; amended in R10-8 at 34 Ill. Reg. 9253, effective June 25, 2010; amended in R10-20 at 34 Ill. Reg. 14326, effective September 14, 2010; amended in R10-8(A) at 35 Ill. Reg. 496, effective December 21, 2010; amended in R11-23 at 35 Ill. Reg. 13676, effective July 27, 2011; amended in R11-23(A), at 35 Ill. Reg. 18830, effective October 25, 2011); amended in R12-24 at 37 Ill. Reg. 1722, effective January 28, 2013, amended in R13-18 at 38 Ill. Reg. 1061, effective December 23, 2013.; amended at _____, effective _____.

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SUBPART A: GENERAL PROVISIONS

Section 219.105 Test Methods and Procedures

a) Coatings, Inks and Fountain Solutions
The following test methods and procedures shall be used to determine compliance of as applied coatings, inks, and fountain solutions with the limitations set forth in this Part.

1) Sampling: Samples collected for analyses shall be one-liter taken into a one-liter container at a location and time such that the sample will be representative of the coating as applied (i.e., the sample shall include any

dilution solvent or other VOM added during the manufacturing process). The container must be tightly sealed immediately after the sample is taken. Any solvent or other VOM added after the sample is taken must be measured and accounted for in the calculations in subsection (a)(3) of this Section. For multiple package coatings, separate samples of each component shall be obtained. A mixed sample shall not be obtained as it will cure in the container. Sampling procedures shall follow the guidelines presented in:

A) ASTM D 3925-81 (1985) standard practice for sampling liquid paints and related pigment coating. This practice is incorporated by reference in Section 219.112 of this Part.

B) ASTM E 300-86 standard practice for sampling industrial chemicals. This practice is incorporated by reference in Section 219.112 of this Part.

2) Analyses: The applicable analytical methods specified below shall be used to determine the composition of coatings, inks, or fountain solutions as applied.

A) Method 24 of 40 CFR 60, appendix A, incorporated by reference in Section 219.112 of this Part, shall be used to determine the VOM content and density of coatings. If it is demonstrated to the satisfaction of the Agency and the USEPA that plant coating formulation data are equivalent to Method 24 results, formulation data may be used. In the event of any inconsistency between a Method 24 test and a facility's formulation data, the Method 24 test will govern.

B) Method 24A of 40 CFR 60, appendix A, incorporated by reference in Section 219.112, shall be used to determine the VOM content and density of rotogravure printing inks and related coatings. If it is demonstrated to the satisfaction of the Agency and USEPA that the plant coating formulation data are equivalent to Method 24A results, formulation data may be used. In the event of any inconsistency between a Method 24A test and formulation data, the Method 24A test will govern.

C) The following ASTM methods are the analytical procedures for determining VOM:

i) ASTM D 1475-85: Standard test method for density of paint, varnish, lacquer and related products. This test method is incorporated by reference in Section 219.112 of this Part.

ii) ASTM D 2369-87: Standard test method for volatile content of a coating. This test method is incorporated by reference in Section 219.112 of this Part.

iii) ASTM D 3792-86: Standard test method for water content of water-reducible paints by direct injection into a gas chromatograph. This test method is incorporated by reference in Section 219.112 of this Part.

iv) ASTM D 4017-81 (1987): Standard test method for water content in paints and paint materials by the Karl Fischer method. This test method is incorporated by reference in Section 219.112 of this Part.

v) ASTM D 4457-85: Standard test method for determination of dichloromethane and 1,1,1, trichloroethane in paints and coatings by direct injection into a gas chromatograph. (The procedure delineated above can be used to develop protocols for any compounds specifically exempted from the definition of VOM.) This test method is incorporated by reference in Section 219.112 of this Part.

vi) ASTM D 2697-86: Standard test method for volume non-volatile matter in clear or pigmented coatings. This test method is incorporated by reference in Section 219.112 of this Part.

vii) ASTM D 3980-87: Standard practice for interlaboratory testing of paint and related materials. This practice is incorporated by reference in Section 219.112 of this Part.

viii) ASTM E 180-85: Standard practice for determining the precision of ASTM methods for analysis of and testing of industrial chemicals. This practice is incorporated by reference in Section 219.112 of this Part.

ix) ASTM D 2372-85: Standard method of separation of vehicle from solvent-reducible paints. This method is incorporated by reference in Section 219.112 of this Part.

D) Use of an adaptation to any of the analytical methods specified in (a)(2)(A), (B), and (C) of this Section may not be used unless approved by the Agency and USEPA. An owner or operator must submit sufficient documentation for the Agency and USEPA to find that the analytical methods specified in subsections (a)(2)(A),

(B), and (C) of this Section will yield inaccurate results and that the proposed adaptation is appropriate.

3) Calculations: Calculations for determining the VOM content, water content and the content of any compounds which are specifically exempted from the definition of VOM of coatings, inks and fountain solutions as applied shall follow the guidance provided in the following documents:

A) "A Guide for Surface Coating Calculation", EPA-340/1-86-016, incorporated by reference in Section 219.112 of this Part.

B) "Procedures for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink and Other Coatings" (revised June 1986), EPA-450/3-84-019, incorporated by reference in Section 219.112 of this Part.

C) "A Guide for Graphic Arts Calculations", August 1988, EPA-340/1-88-003, incorporated by reference in Section 219.112 of this Part.

b) Automobile or Light-Duty Truck Test Protocol

1) The protocol for testing, including determining the transfer efficiency of coating applicators, at primer surfacer operations and topcoat operations at an automobile or light-duty truck assembly source shall follow the procedures in the following:

A) Prior to May 1, 2012: "Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations" ("topcoat protocol"), December 1988, EPA-450/3-88-018, incorporated by reference in Section 219.112 of this Part.

B) On and after May 1, 2012: "Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Primer-Surfacer and Topcoat Operations" (topcoat protocol), September 2008, EPA-453/R-08-002, incorporated by reference in Section 219.112 of this Part.

2) Prior to testing pursuant to the applicable topcoat protocol, the owner or operator of a coating operation subject to the topcoat or primer surfacer limit in Section 219.204(a)(1)(B), (a)(1)(C), (a)(2)(B), (a)(2)(C), or (a)(2)(E) shall submit a detailed testing proposal specifying the method by which testing will be conducted and how compliance will be demonstrated consistent with the applicable topcoat protocol. The proposal shall

include, at a minimum, a comprehensive plan (including a rationale) for determining the transfer efficiency at each booth through the use of in-plant or pilot testing, the selection of coatings to be tested (for the purpose of determining transfer efficiency) including the rationale for coating groupings, the method for determining the analytic VOM content of as applied coatings and the formulation solvent content of as applied coatings, and a description of the records of coating VOM content as applied and coating's usage that will be kept to demonstrate compliance. Upon approval of the proposal by the Agency and USEPA, the compliance demonstration for a coating line may proceed.

c) Capture System Efficiency Test Protocols

1) Applicability
The requirements of subsection (c)(2) of this Section shall apply to all VOM emitting process emission units employing capture equipment (e.g., hoods, ducts), except those cases noted in this subsection (c)(1).

A) If an emission unit is equipped with (or uses) a permanent total enclosure (PTE) that meets Agency and USEPA specifications, and which directs all VOM to a control device, then the emission unit is exempted from the requirements described in subsection (c)(2) of this Section. The Agency and USEPA specifications to determine whether a structure is considered a PTE are given in Method 204 of appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part. In this instance, the capture efficiency is assumed to be 100 percent and the emission unit is still required to measure control efficiency using appropriate test methods as specified in subsection (d) of this Section.

B) If an emission unit is equipped with (or uses) a control device designed to collect and recover VOM (e.g., carbon adsorber), an explicit measurement of capture efficiency is not necessary provided that the conditions given below are met. The overall control of the system can be determined by directly comparing the input liquid VOM to the recovered liquid VOM. The general procedure for use in this situation is given in 40 CFR 60.433, incorporated by reference in Section 219.112 of this Part, with the following additional restrictions:

i) The source owner or operator shall obtain data each operating day for the solvent usage and solvent recovery to permit the determination of the solvent recovery efficiency of the system each operating day using a 7-day rolling period. The recovery efficiency for each operating day is computed as the ratio of the total recovered solvent for that

day and the most recent prior 6 operating days to the total solvent usage for the same 7-day period used for the recovered solvent, rather than a 30-day weighted average as given in 40 CFR 60.433 incorporated by reference in Section 219.112 of this Part. This ratio shall be expressed as a percentage. The ratio shall be computed within 72 hours following each 7-day period. A source that believes that the 7-day rolling period is not appropriate may use an alternative multi-day rolling period not to exceed 30 days, with the approval of the Agency and USEPA. In addition, the criteria in subsection (c)(1)(B)(ii) or (c)(1)(B)(iii) must be met.

ii) The solvent recovery system (i.e., capture and control system) must be dedicated to a single coating line, printing line, or other discrete activity that by itself is subject to an applicable VOM emission standard.

iii) However if the solvent recovery system controls more than one coating line, printing line or other discrete activity that by itself is subject to an applicable VOM emission standard, the overall control (i.e., the total recovered VOM divided by the sum of liquid VOM input from all lines and other activities venting to the control system) must meet or exceed the most stringent standard applicable to any line or other discrete activity venting to the control system.

2) Capture Efficiency Protocols

The capture efficiency of an emission unit shall be measured using one of the protocols given below. Appropriate test methods to be utilized in each of the capture efficiency protocols are described in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part. Any error margin associated with a test method or protocol may not be incorporated into the results of a capture efficiency test. If these techniques are not suitable for a particular process, then an alternative capture efficiency protocol may be used, pursuant to the provisions of Section 219.108(b) of this Part.

A) Gas/gas method using temporary total enclosure (TTE). The Agency and USEPA specifications to determine whether a temporary enclosure is considered a TTE are given in Method 204 of appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part. The capture efficiency equation to be used for this protocol is:

$$CE = \frac{G_w}{G_w + F_w}$$

where:

CE = capture efficiency, decimal fraction;

G_w = mass of VOM captured and delivered to control device using a TTE;

F_w = mass of uncaptured VOM that escapes from a TTE.

Method 204B or 204C contained in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, is used to obtain G_w. Method 204D in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, is used to obtain F_w.

B) Liquid/gas method using TTE. The Agency and USEPA specifications to determine whether a temporary enclosure is considered a TTE are given in Method 204 of appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part. The capture efficiency equation to be used for this protocol is:

$$CE = \frac{L - F_W}{L}$$

where:

CE = capture efficiency, decimal fraction;

L = mass of liquid VOM input to process emission unit;

F_w = mass of uncaptured VOM that escapes from a TTE.

Method 204A or 204F contained in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, is used to obtain L. Method 204in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, is used to obtain F_w.

C) Gas/gas method using the building or room (building or room enclosure), in which the affected coating line, printing line or other emission unit is located, as the enclosure, as determined by Method 204 of appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, and in which "F_B" and "G" are

measured while operating only the affected line or emission unit. All fans and blowers in the building or room must be operated as they would under normal production. The capture efficiency equation to be used for this protocol is:

$$CE = \frac{G}{G + F_B}$$

where:

CE = capture efficiency, decimal fraction;

G = mass of VOM captured and delivered to control device;

F_B = mass of uncaptured VOM that escapes from building enclosure.

Method 204B or 204C contained in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, is used to obtain G. Method 204E in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, is used to obtain F_B.

D) Liquid/gas method using the building or room (building or room enclosure), in which the affected coating line, printing line or other emission unit is located, as the enclosure as determined by Method 204 of appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, and in which "F_B" and "L" are measured while operating only the affected line emission unit. All fans and blowers in the building or room must be operated as they would under normal production. The capture efficiency equation to be used for this protocol is:

$$CE = \frac{L - F_B}{L}$$

where:

CE = capture efficiency, decimal fraction;

L = mass of liquid VOM input to process emission unit;

F_B = mass of uncaptured VOM that escapes from building enclosure.

Method 204A or 204F contained in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, is used to

obtain L. Method 204E in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, is used to obtain F_B.

E) Mass balance using Data Quality Objective (DQO) or Lower Confidence Limit (LCL) protocol. For a liquid/gas input where an owner or operator is using the DQO/LCL protocol and not using an enclosure as described in Method 204 of appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, the VOM content of the liquid input (L) must be determined using Method 204A or 204F in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part. The VOM content of the captured gas stream (G) to the control device must be determined using Method 204B or 204C in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part. The results of capture efficiency calculations (G/L) must satisfy the DQO or LCL statistical analysis methodology as described in Section 3 of USEPA's "Guidelines for Determining Capture Efficiency", incorporated by reference at Section 219.112 of this Part. Where capture efficiency testing is done to determine emission reductions for the purpose of establishing emission credits for offsets, shutdowns, and trading, the LCL protocol cannot be used for these applications. In enforcement cases, the LCL protocol cannot confirm non-compliance; capture efficiency must be determined using a protocol under subsection (c)(2)(A), (B), (C) or (D) of this Section, the DQO protocol of this subsection (c)(2)(E), or an alternative protocol pursuant to Section 219.108(b) of this Part.

BOARD NOTE: Where LCL was used in testing emission units that are the subject of later requests for establishing emission credits for offsets, shutdowns, and trading, prior LCL results may not be relied upon to determine the appropriate amount of credits. Instead, to establish the appropriate amount of credits, additional testing may be required that would satisfy the protocol of Section 219.105(c)(2)(A), (B), (C) or (D), the DQO protocol of Section 219.105(c)(2)(E), or an alternative protocol pursuant to Section 219.108(b) of this Part.

3) Simultaneous testing of multiple lines or emission units with a common control device. If an owner or operator has multiple lines sharing a common control device, the capture efficiency of the lines may be tested simultaneously, subject to the following provisions:

A) Multiple line testing must meet the criteria of Section 4 of USEPA's "Guidelines for Determining Capture Efficiency", incorporated by reference at Section 219.112 of this Part;

B) The most stringent capture efficiency required for any individual line or unit must be met by the aggregate of lines or units; and

C) Testing of all the lines of emission units must be performed with the same capture efficiency test protocol.

4) Recordkeeping and Reporting

A) All owners or operators affected by this subsection must maintain a copy of the capture efficiency protocol submitted to the Agency and the USEPA on file. All results of the appropriate test methods and capture efficiency protocols must be reported to the Agency within 60 days after the test date. A copy of the results must be kept on file with the source for a period of 3 years.

B) If any changes are made to capture or control equipment, then the source is required to notify the Agency and the USEPA of these changes and a new test may be required by the Agency or the USEPA.

C) The source must notify the Agency 30 days prior to performing any capture efficiency or control test. At that time, the source must notify the Agency which capture efficiency protocol and control device test methods will be used. Notification of the actual date and expected time of testing must be submitted a minimum of 5 working days prior to the actual date of the test. The Agency may at its discretion accept notification with shorter advance notice provided that such arrangements do not interfere with the Agency's ability to review the protocol and/or observe testing.

D) Sources utilizing a PTE must demonstrate that this enclosure meets the requirement given in Method 204 in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part, for a PTE during any testing of their control device.

E) Sources utilizing a TTE must demonstrate that their TTE meets the requirements given in Method 204 in appendix M or 40 CFR 51, incorporated by reference in Section 219.112 of this Part, for a TTE during any testing of their control device. The source must also provide documentation that the quality assurance criteria for a TTE have been achieved.

F) Any source utilizing the DQO or LCL protocol must submit the following information to the Agency with each test report:

i) A copy of all test methods, Quality Assurance/Quality Control procedures, and calibration procedures to be used from those described in appendix M of 40 CFR 51, incorporated by reference in Section 219.112 of this Part;

ii) A table with information on each sample taken, including the sample identification and the VOM content of the sample;

iii) The quantity of material used for each test run;

iv) The quantity of captured VOM for each test run;

v) The capture efficiency calculations and results for each test run;

vi) The DQO and/or LCL calculations and results; and

vii) The Quality Assurance/Quality Control results, including how often the instruments were calibrated, the calibration results, and the calibration gases used.

d) Control Device Efficiency Testing and Monitoring

1) The control device efficiency shall be determined by simultaneously measuring the inlet and outlet gas phase VOM concentrations and gas volumetric flow rates in accordance with the gas phase test methods specified in subsection (f) of this Section.

2) An owner or operator:

A) That uses an afterburner or carbon adsorber to comply with any Section of this Part shall use Agency and USEPA approved continuous monitoring equipment which is installed, calibrated, maintained, and operated according to vendor specifications at all times the control device is in use except as provided in subsection (d)(3) of this Section. The continuous monitoring equipment must monitor the following parameters:

i) For each afterburner which does not have a catalyst bed, the combustion chamber temperature of each afterburner.

ii) For each afterburner which has a catalyst bed, commonly known as a catalytic afterburner, the temperature rise across each catalytic afterburner bed or VOM concentration of exhaust.

iii) For each carbon adsorber, the VOM concentration of each carbon adsorption bed exhaust or the exhaust of the bed next in sequence to be desorbed.

B) Must install, calibrate, operate and maintain, in accordance with manufacturer's specifications, a continuous recorder on the temperature monitoring device, such as a strip chart, recorder or computer, having an accuracy of ± 1 percent of the temperature measured, expressed in degrees Celsius or ± 0.5° C, whichever is greater.

C) Of an automobile or light-duty truck primer surfacer operation or topcoat operation subject to subsection (d)(2)(A) shall keep a separate record of the following data for the control devices, unless alternative provisions are set forth in a permit pursuant to Title V of the Clean Air Act:

i) For thermal afterburners for which combustion chamber temperature is monitored, all 3-hour periods of operation in which the average combustion temperature was more than 28° C (50° F) below the average combustion temperature measured during the most recent performance test that demonstrated that the operation was in compliance.

ii) For catalytic afterburners for which temperature rise is monitored, all 3-hour periods of operation in which the average gas temperature before the catalyst bed is more than 28° C (50° F) below the average gas temperature immediately before the catalyst bed measured during the most recent performance test that demonstrated that the operation was in compliance.

iii) For catalytic afterburners and carbon adsorbers for which VOM concentration is monitored, all 3-hour periods of operation during which the average VOM concentration or the reading of organics in the exhaust gases is more than 20 percent greater than the average exhaust gas concentration or reading measured by the organic monitoring device during the most recent determination of the recovery efficiency of a carbon adsorber or performance test for a catalytic afterburner, which determination or test that demonstrated that the operation was in compliance.

3) An owner or operator that uses a carbon adsorber to comply with Section 219.401 of this Part may operate the adsorber during periods of

monitoring equipment malfunction, provided that:

A) The owner or operator notifies in writing the Agency and USEPA, within 10 days after the conclusion of any 72 hour period during which the adsorber is operated and the associated monitoring equipment is not operational, of such monitoring equipment failure and provides the duration of the malfunction, a description of the repairs made to the equipment, and the total to date of all hours in the calendar year during which the adsorber was operated and the associated monitoring equipment was not operational;

B) During such period of malfunction the adsorber is operated using timed sequences as the basis for periodic regeneration of the adsorber;

C) The period of such adsorber operation does not exceed 360 hours in any calendar year without the approval of the Agency and USEPA; and

D) The total of all hours in the calendar year during which the adsorber was operated and the associated monitoring equipment was not operational shall be reported, in writing, to the Agency and USEPA by January 31 of the following calendar year.

e) Overall Efficiency

1) The overall efficiency of the emission control system shall be determined as the product of the capture system efficiency and the control device efficiency or by the liquid/liquid test protocol as specified in 40 CFR 60.433, incorporated by reference in Section 219.112 of this Part, (and revised by subsection (c)(1)(B) of this Section) for each solvent recovery system. In those cases in which the overall efficiency is being determined for an entire line, the capture efficiency used to calculate the product of the capture and control efficiency is the total capture efficiency over the entire line.

2) For coating lines which are both chosen by the owner or operator to comply with Section 219.207(a), (d), (e), (f), (g), (l), (m), or (n) of this Part by the alternative in Section 219.207(b)(2) of this Part and meet the criteria allowing them to comply with Section 219.207 instead of Section 219.204 of this Part, the overall efficiency of the capture system and control device, as determined by the test methods and procedures specified in subsections (c), (d) and (e)(1) of this Section, shall be no less than the equivalent overall efficiency which shall be calculated by the following equation:

$$E = \frac{VOM_a - VOM_l}{VOM_a} \times 100$$

where:

E = Equivalent overall efficiency of the capture system and control device as a percentage;

VOM_a = Actual VOM content of a coating, or the daily-weighted average VOM content of two or more coatings (if more than one coating is used), as applied to the subject coating line as determined by the applicable test methods and procedures specified in subsection (a)(4)(i) of this Part in units of kg VOM/1 (lb VOM/gal) of coating solids as applied;

VOM_l = The VOM emission limit specified in Sections 219.204 or 219.205 of this Part in units of kg VOM/1 (lb VOM/gal) of coating solids as applied.

f) Volatile Organic Material Gas Phase Source Test Methods
The methods in 40 CFR 60, appendix A, incorporated by reference in Section 219.112 of this Part delineated below shall be used to determine control device efficiencies.

1) 40 CFR 60, appendix A, Method 18, 25 or 25A, incorporated by reference in Section 219.112 of this Part as appropriate to the conditions at the site, shall be used to determine VOM concentration. Method selection shall be based on consideration of the diversity of organic species present and their total concentration and on consideration of the potential presence of interfering gases. Except as indicated in subsections (f)(1)(A) and (B) below, the test shall consist of three separate runs, each lasting a minimum of 60 min, unless the Agency and the USEPA determine that process variables dictate shorter sampling times.

A) When the method is to be used to determine the efficiency of a carbon adsorption system with a common exhaust stack for all the individual adsorber vessels, the test shall consist of three separate runs, each coinciding with one or more complete sequences through the adsorption cycles of all the individual adsorber vessels.

B) When the method is to be used to determine the efficiency of a carbon adsorption system with individual exhaust stacks for each adsorber vessel, each adsorber vessel shall be tested individually. The test for each adsorber vessel shall consist of three separate runs. Each run shall coincide with one or more complete

adsorption cycles.

2) 40 CFR 60, appendix A, Method 1 or 1A, incorporated by reference in Section 219.112 of this Part, shall be used for sample and velocity traverses.

3) 40 CFR 60, appendix A, Method 2, 2A, 2C or 2D, incorporated by reference in Section 219.112 of this Part, shall be used for velocity and volumetric flow rates.

4) 40 CFR 60, appendix A, Method 3, incorporated by reference in Section 219.112 of this Part, shall be used for gas analysis.

5) 40 CFR 60, appendix A, Method 4, incorporated by reference in Section 219.112 of this Part, shall be used for stack gas moisture.

6) 40 CFR 60, appendix A, Methods 2, 2A, 2C, 2D, 3 and 4, incorporated by reference in Section 219.112 of this Part, shall be performed, as applicable, at least twice during each test run.

7) Use of an adaptation to any of the test methods specified in subsections (f)(1), (2), (3), (4), (5) and (6) of this Section may not be used unless approved by the Agency and the USEPA on a case by case basis. An owner or operator must submit sufficient documentation for the Agency and the USEPA to find that the test methods specified in subsections (f)(1), (2), (3), (4), (5) and (6) of this Section will yield inaccurate results and that the proposed adaptation is appropriate.

g) Leak Detection Methods for Volatile Organic Material
Owners or operators required by this Part to carry out a leak detection monitoring program shall comply with the following requirements:

1) Leak Detection Monitoring

A) Monitoring shall comply with 40 CFR 60, appendix A, Method 21, incorporated by reference in Section 219.112 of this Part.

B) The detection instrument shall meet the performance criteria of Method 21.

C) The instrument shall be calibrated before use on each day of its use by the methods specified in Method 21.

D) Calibration gases shall be:

i) Zero air (less than 10 ppm of hydrocarbon in air); and

ii) A mixture of methane or n-hexane and air at a concentration of approximately, but no less than, 10,000 ppm methane or n-hexane.

E) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Method 21.

2) When equipment is tested for compliance with no detectable emissions as required, the test shall comply with the following requirements:

A) The requirements of subsections (g)(1)(A) through (g)(1)(E) of this Section shall apply.

B) The background level shall be determined as set forth in Method 21.

3) Leak detection tests shall be performed consistent with:

A) "APTI Course SI 417 controlling Volatile Organic Compound Emissions from Leaking Process Equipment", EPA-450/2-82-015, incorporated by reference in Section 219.112 of this Part.

B) "Portable Instrument User's Manual for Monitoring VOM Sources", EPA-340/1-86-015, incorporated by reference in Section 219.112 of this Part.

C) "Protocols for Generating Unit-Specific Emission Estimates for Equipment Leaks of VOM and VHAP", EPA-450/3-88-010, incorporated by reference in Section 219.112 of this Part.

D) "Petroleum Refinery Enforcement Manual", EPA-340/1-80-008, incorporated by reference in Section 219.112 of this Part.

h) Bulk Gasoline Delivery System Test Protocol

1) The method for determining the emissions of gasoline from a vapor recovery system are delineated in 40 CFR 60, subpart XX, section 60.503, incorporated by reference in Section 219.112 of this Part.

2) Other tests shall be performed consistent with:

A) "Inspection Manual for Control of Volatile Organic Emissions from Gasoline Marketing Operations: Appendix D", EPA-340/1-80-012, incorporated by reference in Section 219.112 of this Part.

B) "Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals: Appendix A", EPA-450/2-77-026, incorporated by reference in Section 219.112 of this Part.

i) Notwithstanding other requirements of this Part, upon request of the Agency where it is necessary to demonstrate compliance, an owner or operator of an emission unit which is subject to this Part shall, at his own expense, conduct tests in accordance with the applicable test methods and procedures specific in this Part. Nothing in this Section shall limit the authority of the USEPA pursuant to the Clean Air Act, as amended, to require testing.

j) Cleaning Solvents Subject to Section 219.219(g)

1) For aqueous and semiaqueous cleaning solvents, manufacturers' supplied data shall be used to determine the water content.

2) For hand-wipe cleaning solvents required in Section 219.219(g)(2), manufacturers' supplied data or standard engineering reference texts or other equivalent methods shall be used to determine the vapor pressure or VOM composite vapor pressure for blended cleaning solvents.

(Source: Amended at_____, effective_____)

Section 219.106 Compliance Dates

a) Except as provided in subsection (b), (c), (d), ~~or~~ (e), or (f), 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 the applicable subsections, as well as all applicable requirements in Sections 219.205 through 219.214 and 219.218, by May 1, 2012.

d) Any owner or operator of a source subject to the requirements of Section 219.204(o) of this Part shall comply with the requirements in Section 219.204(o), as well as all applicable requirements in Sections 219.205 through 219.211, 219.214, and 219.217 by August 1, 2010.

e) Any owner or operator of a source subject to the requirements of Section 219.204(a)(2) or 219.204(q) of this Part shall comply with the applicable

requirements in those Sections, as well as all applicable requirements in Sections 219.205 through 219.214 and 219.219, by May 1, 2011.

f) Any owner or operator of a source subject to the requirements of Section 219.204(r) of this Part shall comply with the requirements in Section 219.204(r), as well as all applicable requirements in Sections 219.205, 219.207, 219.208, 219.211, and 219.219, by January 1, 2021.

(Source: Amended at_____, effective_____)

Section 219.110 Vapor Pressure of Organic Material or Solvent

a) If the organic material or solvent consists of only a single compound, the vapor pressure shall be determined by ASTM Method D2879-86 (incorporated by reference in Section 219.112 of this Part) or the vapor pressure may be obtained from a publication such as: Boublik, T., V. Fried and E. Hala, "The Vapor Pressure of Pure Substances," Elsevier Scientific Publishing Co., New York (1973); Perry's Chemical Engineer's Handbook, McGraw-Hill Book Company (1984); CRC Handbook of Chemistry and Physics, Chemical Rubber Publishing Company (1986-87); and Lange's Handbook of Chemistry, John A. Dean, editor, McGraw-Hill Book Company (1985).

b) Except as provided in subsection (d) of this Section, ~~I~~if the organic material or solvent is in a mixture made up of both organic material compounds and compounds which are not organic material, the vapor pressure shall be determined by the following equation:

$$P_{om} = \frac{\sum_{i=1}^{n} P_i X_i}{\sum_{i=1}^{n} X_i}$$

where:

P_{om} = Total vapor pressure of the portion of the mixture which is composed of organic material;

n = Number of organic material components in the mixture;

I = Subscript denoting an individual component;

P_i = Vapor pressure of an organic material component determined in accordance with subsection (a) of this Section;

X_i = Mole fraction of the organic material component of the total organic mixture.

c) If the organic material or solvent is in a mixture made up of only organic material compounds, the vapor pressure shall be determined by ASTM Method D2879-86 (incorporated by reference in Section 219.112 of this Part) or by the above equation.

d) For hand-wipe cleaning solvents used at aerospace facilities subject to Section 219.219(g)(2) of this Part, the composite vapor pressure of a cleaning solvent consisting of multiple components shall be determined by the following equation:

$$PP_c = \sum_{i=1}^{n} \frac{\frac{W_i}{MW_1} \times VP_i}{\frac{W_w}{MW_w} + \sum_{j=1}^{n} \frac{W_j}{MW_j} + \sum_{i=1}^{n} \frac{W_i}{MW_i}}$$

where:

PP_c = Composite vapor pressure of the cleaning solvent in mmHg at 20°C;

n = Number of components in the cleaning solvent

i = Subscript denoting an individual VOM-containing component;

j = Subscript denoting an individual non-VOM component;

W_i = Weight of a VOM-containing component in grams;

W_j = Weight of a non-VOM component in grams;

W_w = Weight of water in grams;

MW_i = Molecular weight a VOM-containing component in grams per gram-mole;

MW_j = Molecular weight of a non-VOM component in grams per gram-mole

MW_w = Molecular weight of water in grams per gram-mole;

VP_i = Vapor pressure of a VOM-containing component in mmHg at 20°C.

(Source: Amended at_____, effective_____)

Section 219.112 Incorporations by Reference

The following materials are incorporated by reference and do not contain any subsequent

additions or amendments:

a) American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken PA 19428-9555

1) ASTM D 2879-86

2) ASTM D 323-08

3) ASTM D 86-82

4) ASTM D 369-69 (1971)

5) ASTM D 396-69

6) ASTM D 2880-71

7) ASTM D 975-68

8) ASTM D 3925-81 (1985)

9) ASTM E 300-86

10) ASTM D 1475-85

11) ASTM D 2369-87

12) ASTM D 3792-86

13) ASTM D 4017-81 (1987)

14) ASTM D 4457-85

15) ASTM D 2697-86

16) ASTM D 3980-87

17) ASTM E 180-85

18) ASTM D 2372-85

19) ASTM D 97-66

20) ASTM E 168-87 (1977)

21) ASTM E 169-87

22) ASTM E 260-91

23) ASTM D 2504-83

24) ASTM D 2382-83

b) Standard Industrial Classification Manual, published by Executive Office of the President, Office of Management and Budget, Washington, D.C., 1987.

c) American Petroleum Institute Bulletin 2517, "Evaporation Loss From Floating Roof Tanks", Second ed., February 1980.

d) 40 CFR 60 (July 1, 1991).

e) 40 CFR 61 (July 1, 1991).

f) 40 CFR 50 (July 1, 1991).

g) 40 CFR 51 (July 1, 1991) and 40 CFR 51, appendix M, Methods 204-204F (July 1, 1999).

h) 40 CFR 52 (July 1, 1991).

i) "A Guide for Surface Coating Calculation", July 1986, United States Environmental Protection Agency, Washington, D.C., EPA-340/1-86-016.

j) "Procedures for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink and Other Coating" (revised June 1986), United States Environmental Protection Agency, Washington D.C., EPA-450/3-84-019.

k) "A Guide for Graphic Arts Calculations", August 1988, United States Environmental Protection Agency, Washington D.C., EPA-340/1-88-003.

l) "Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations", December 1988, United States Environmental Protection Agency, Washington D.C., EPA-450/3-88-018.

m) "Control of Volatile Organic Emissions from Manufacturing of Synthesized Pharmaceutical Products", December 1978, United States Environmental Protection Agency, Washington, D.C., EPA-450/2-78-029.

n) "Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems", December 1978, Appendix B, United States Environmental Protection Agency, Washington, D.C., EPA-450/2-78-051.

o) "Control of Volatile Organic Compound Emissions from Large Petroleum Dry Cleaners", September 1982, United States Environmental Protection Agency, Washington, D.C., EPA-450/3-82-009.

p) "APTI Course SI417 Controlling Volatile Organic Compound Emissions from Leaking Process Equipment", 1982, United States Environmental Protection Agency, Washington, D.C., EPA-450/2-82-015.

q) "Portable Instrument User's Manual for Monitoring VOM Sources", June 1986, United States Environmental Protection Agency, Washington, D.C., EPA-340/1-86-015.

r) "Protocols for Generating Unit-Specific Emission Estimates for Equipment Leaks of VOM and VHAP", October 1988, United States Environmental Protection Agency, Washington, D.C., EPA-450/3-88-010.

s) "Petroleum Refinery Enforcement Manual", March 1980, United States Environmental Protection Agency, Washington, D.C., EPA-340/1-80-008.

t) "Inspection Manual for Control of Volatile Organic Emissions from Gasoline Marketing Operations: Appendix D", 1980, United States Environmental Protection Agency, Washington, D.C., EPA-340/1-80-012.

u) "Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals: Appendix A", December 1977, United States Environmental Protection Agency, Washington, D.C., EPA-450/2-77-026.

v) California Air Resources Board, Compliance Division. Compliance Assistance Program: Gasoline Marketing and Distribution: Gasoline Facilities Phase I & II (October 1988, rev. November 1993) (CARB Manual).

w) "Guidelines for Determining Capture Efficiency", January 1995, Office of Air Quality Planning and Standards, United States Environmental Protection Agency, Research Triangle Park NC.

x) Memorandum "Revised Capture Efficiency Guidance for Control of Volatile Organic Compound Emissions", February1995, John S. Seitz, Director, Office of Air Quality Planning and Standards, United States Environmental Protection Agency.

y) "Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Primer-Surfacer and Topcoat Operations", September 2008, United States Environmental Protection Agency, Washington, D.C., EPA-453/R-08-002.

z) 40 CFR 63 subpart PPPP, appendix A (2008).

aa) 46 CFR subchapter Q (2007).

bb) 46 CFR subchapter T (2008).

cc) 40 CFR 82.4 (2020).

(Source: Amended at_____, effective_____)

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SUBPART E: SOLVENT CLEANING

Section 219.187 Other Industrial Solvent Cleaning Operations

a) Applicability. On and after January 1, 2012:

1) Except as provided in subsection (a)(2) of this Section, the requirements of this Section shall apply to all cleaning operations that use organic materials at sources that emit a total of 226.8 kg per calendar month (500 lbs per calendar month) or more of VOM, in the absence of air pollution control equipment, from cleaning operations at the source other than cleaning operations identified in subsection (a)(2) of this Section. For purposes of this Section, "cleaning operation" means the process of cleaning products, product components, tools, equipment, or general work areas during production, repair, maintenance or servicing, including but not limited to spray gun cleaning, spray booth cleaning, large and small manufactured components cleaning, parts cleaning, equipment cleaning, line cleaning, floor cleaning, and tank cleaning, at sources with emission units;

2) Notwithstanding subsection (a)(1) of this Section:

A) The following cleaning operations shall be exempt from the requirements of subsections (b), (c), (d), (e), (f), and (g) of this Section:

i) Cleaning operations subject to the limitations in Sections 219.182, 219.183, or 219.184;

ii) Janitorial cleaning;

iii) Stripping of cured coatings, inks, or adhesives;

iv) Cleaning operations in printing pre-press areas, including the cleaning of film processors, color scanners, plate processors, film cleaning, and plate cleaning;

B) Cleaning operations for emission units within the following categories shall be exempt from the requirements of subsections (b), (c), (d), (e), (f), and (g) of this Section:

i) Flexible package printing;

ii) Lithographic printing;

iii) Letterpress printing;

iv) Flat wood paneling coating;

v) Large appliance coating;

vi) Metal furniture coating;

vii) Paper, film, and foil coating;

viii) Wood furniture coating;

ix) Plastic parts coating;

x) Miscellaneous metal parts coating;

xi) Fiberglass boat manufacturing;

xii) Miscellaneous industrial adhesives; ~~and~~

xiii) Auto and light-duty truck assembly coating; and

xiv) Aerospace facilities.

C) The following cleaning operations shall be exempt from the requirements of subsections (b), (c), (f), and (g) of this Section:

i) Cleaning of solar cells, laser hardware, scientific instruments, and high-precision optics;

ii) Cleaning conducted as part of performance laboratory tests on coatings, adhesives, or inks; research and development

operations; or laboratory tests in quality assurance laboratories;

iii) Cleaning of paper-based gaskets and clutch assemblies where rubber is bonded to metal by means of an adhesive;

iv) Cleaning of cotton swabs to remove cottonseed oil before cleaning of high-precision optics;

v) Cleaning of medical device and pharmaceutical manufacturing operations if the facility uses no more than 5.7 liters (1.5 gallons) per day of solvents for such cleaning;

vi) Cleaning of adhesive application equipment used for thin metal laminating;

vii) Cleaning of electronic or electrical cables;

viii) Touch-up cleaning performed on printed circuit boards where surface mounted devices have already been attached;

ix) Cleaning of coating and adhesive application processes utilized to manufacture transdermal drug delivery products using no more than three gallons per day of ethyl acetate;

x) Cleaning of application equipment used to apply coatings on satellites and radiation effect coatings;

xi) Cleaning of application equipment used to apply solvent-borne fluoropolymer coatings;

xii) Cleaning of ultraviolet or electron beam adhesive application;

xiii) Cleaning of sterilization indicating ink application equipment if the facility uses no more than 5.7 liters (1.5 gallons) per day of solvents for such cleaning;

xiv) Cleaning of metering rollers, dampening rollers, and printing plates;

xv) Cleaning of numismatic dies; and

xvi) Cleaning operations associated with digital printing;

xvii) Cleaning with aerosol products if the facility uses no more than 4.7 liters (1.25 gallons) per day of such products;

xviii) Cleaning of plastic-based or vinyl-based substrates for use in the screen printing process when using UV curable ink and coating systems;

xix) Cleaning conducted as part of performance tests on coatings, adhesives, or inks that are in research and development and that are not yet commercially used for the applications for which they are being tested. This exemption is limited to the use of up to a total of 90.9 liters (24 gallons) per calendar month and 416.3 liters (110 gallons) of cleaning solvent per calendar year for such cleaning.

b) Material and Control Requirements. No owner or operator of a source subject to this Section, other than manufacturers of coatings, inks, adhesives, or resins, shall perform any cleaning operation subject to this Section unless the owner or operator meets the requirements in subsection (b)(1), (b)(2), or (b)(3). No owner or operator of a source that manufactures coatings, inks, adhesives, or resins shall perform any cleaning operation subject to this Section unless the owner or operator meets the requirements in at least one of the following subsections: (b)(1), (b)(2), (b)(3), (b)(4), or (b)(5).

1) The VOM content of the as-used cleaning solutions does not exceed the following emissions limitations:

A) Product cleaning during manufacturing process or surface preparation for coating, adhesive, or ink application:

		kg/l	lb/gal
i)	Electrical apparatus components and electronic components	0.10	0.83
ii)	Medical device and pharmaceutical manufacturing	0.80	6.7

B) Repair and maintenance cleaning:

		kg/l	lb/gal
i)	Electrical apparatus components and electronic	0.10	0.83

	ii)	Medical device and pharmaceutical manufacturing: tools, equipment, and machinery	0.80	6.7
	iii)	Medical device and pharmaceutical manufacturing: general work surfaces	0.60	5.0

C) Cleaning of ink application equipment:

		kg/l	lb/gal
i)	Rotogravure printing that does not print flexible packaging	0.10	0.83
ii)	Screen printing, including screen reclamation activities	0.50	4.2
iii)	Ultraviolet ink and electron beam ink application equipment, except screen printing	0.65	5.4
iv)	Flexographic printing that does not print flexible packaging	0.10	0.83

		kg/l	lb/gal
D)	Cleaning of equipment used in the manufacture of coatings, inks, adhesives, or resins	0.20	1.67
E)	All other cleaning operations not subject to a specific limitation in subsections (b)(1)(A) through (b)(1)(D) of this Section	0.050	0.42

2) The VOM composite vapor pressure of each as-used cleaning solution used does not exceed 8.0 mmHg measured at 20ºC (68ºF);

3) An afterburner or carbon adsorber is installed and operated that reduces VOM emissions from the subject cleaning operation by at least 85 percent overall, or for sources that manufacture coatings, inks, adhesives, or resins, an afterburner or carbon adsorber is installed and operated that reduces VOM emissions from the subject cleaning operation by at least 80 percent overall and has a 90 percent efficiency. The owner or operator may use an emissions control system other than an afterburner or carbon adsorber if such device reduces VOM emissions from the subject cleaning operation in accordance with the applicable capture and control

requirements of this subsection (b)(3), the owner or operator submits a plan to the Agency detailing appropriate monitoring devices, test methods, recordkeeping requirements, and operating parameters for such control device, and such plan is approved by the Agency and USEPA within federally enforceable permit conditions;

4) For sources that manufacture coatings, inks, adhesives, or resins, the owner or operator complies with the following work practices:

A) Equipment being cleaned is maintained leak-free;

B) VOM-containing cleaning materials are drained from the cleaned equipment upon completion of cleaning;

C) VOM-containing cleaning materials, including waste solvent, are not stored or disposed of in such a manner that will cause or allow evaporation into the atmosphere; and

D) VOM-containing cleaning materials are stored in closed containers;

5) Sources that manufacture coatings, inks, adhesives, or resins may utilize solvents that do not comply with subsection (b)(1) or (b)(2) of this Section provided that all of the following requirements are met:

A) No more than 228 l (60 gal) of fresh solvent is used per calendar month. Solvent that is reused or recycled, either onsite or offsite, for further use in equipment cleaning or in the manufacture of coatings, inks, adhesives, or resins, shall not be included in this limit;

B) Solvents, including cleanup solvents, are collected and stored in closed containers; and

C) Records are maintained in accordance with subsection (e)(6).

c) The owner or operator of a subject source shall demonstrate compliance with this Section by using the applicable test methods and procedures specified in subsection (g) of this Section and by complying with the recordkeeping and reporting requirements specified in subsection (e) of this Section.

d) Operating Requirements. The owner or operator of a source subject to the requirements of this Section shall comply with the following for each subject cleaning operation. Such requirements are in addition to work practices set forth in subsections (b)(4) and (b)(5) of this Section, as applicable:

1) Cover open containers and properly cover and store applicators used to apply cleaning solvents;

2) Minimize air circulation around the cleaning operation;

3) Dispose of all used cleaning solutions, cleaning towels, and applicators used to apply cleaning solvents in closed containers;

4) Utilize equipment practices that minimize emissions;

5) When using cleaning solvent for wipe cleaning, sources that manufacture coatings, inks, adhesives, or resins shall:

A) Cover open containers used for the storage of spent or fresh organic compounds used for cleanup or coating, ink, adhesive, or resin removal; and

B) Cover open containers used for the storage or disposal of cloth or paper impregnated with organic compounds that are used for cleanup or coating, ink, adhesive, or resin removal.

e) Recordkeeping and Reporting Requirements

1) The owner or operator of a source exempt from the limitations of this Section because of the criteria in subsection (a)(1) of this Section shall comply with the following:

A) By January 1, 2012, or upon initial start-up of the source, whichever is later, submit a certification to the Agency that includes:

i) A declaration that the source is exempt from the requirements of this Section because of the criteria in subsection (a)(1);

ii) Calculations that demonstrate that combined emissions of VOM from cleaning operations at the source, other than cleaning operations identified in subsection (a)(2) of this Section, never equal or exceed 226.8 kg/month (500 lbs/month), in the absence of air pollution control equipment. An emission adjustment factor of 0.50 shall be used in calculating emissions from used shop towels if the VOM composite vapor pressure of each associated cleaning solution is demonstrated to be less than 10 mmHg at 20ºC (68ºF) and the used shop towels are kept in closed containers. For cleaning solutions with VOM composite

vapor pressure of equal to or greater than 10 mmHg measured at 20ºC (68ºF) and for shop towels that are not kept in closed containers, no emission adjustment factor shall be used;

B) On and after January 1, 2012, collect and record the following information each month for each cleaning operation, other than cleaning operations identified in subsection (a)(2) of this Section:

i) The name and identification of each VOM-containing cleaning solution as applied in each cleaning operation;

ii) The VOM content of each cleaning solution as applied in each cleaning operation;

iii) The weight of VOM per volume and the volume of each as-used cleaning solution; and

iv) The total monthly VOM emissions from cleaning operations at the source;

C) Notify the Agency of any record that shows that the combined emissions of VOM from cleaning operations at the source, other than cleaning operations identified in subsection (a)(2) of this Section, ever equal or exceed 226.8 kg/month (500 lbs/month), in the absence of air pollution control equipment, within 30 days after the event occurs.

2) All sources subject to the requirements of this Section shall:

A) By January 1, 2012 or upon initial start-up of the source, whichever is later, submit a certification to the Agency that includes:

i) A declaration that all subject cleaning operations are in compliance with the requirements of this Section;

ii) Identification of each subject cleaning operation and each VOM-containing cleaning solution used as of the date of certification in such operation;

iii) If complying with the emissions control system requirement, what type of emissions control system will be used;

iv) Initial documentation that each subject cleaning operation will comply with the applicable limitation, including copies of manufacturer's specifications, test results (if any), formulation data, and calculations;

v) Identification of the methods that will be used to demonstrate continuing compliance with the applicable limitations;

vi) A description of the practices and procedures that the source will follow to ensure compliance with the limitations in subsection (d), and, if applicable, subsection (b)(4); and

vii) A description of each cleaning operation exempt pursuant to subsection (a)(2), if any, and a listing of the emission units on which the exempt cleaning operation is performed;

B) At least 30 calendar days before changing the method of compliance between subsections (b)(1), (b)(2), (b)(4), or (b)(5) and subsection (b)(3) of this Section, notify the Agency in writing of such change. The notification shall include a demonstration of compliance with the newly applicable subsection;

3) All sources complying with this Section pursuant to the requirements of subsection (b)(1) of this Section shall collect and record the following information for each cleaning solution used:

A) For each cleaning solution that is prepared at the source with automatic equipment:

i) The name and identification of each cleaning solution;

ii) The VOM content of each cleaning solvent in the cleaning solution;

iii) Each change to the setting of the automatic equipment, with date, time, description of changes in the cleaning solution constituents (e.g., cleaning solvents), and a description of changes to the proportion of cleaning solvent and water (or other non-VOM);

iv) The proportion of each cleaning solvent and water (or other non-VOM) used to prepare the as-used cleaning solution;

v) The VOM content of the as-used cleaning solution, with supporting calculations; and

vi) A calibration log for the automatic equipment, detailing periodic checks;

B) For each batch of cleaning solution that is not prepared at the source with automatic equipment:

i) The name and identification of each cleaning solution;

ii) Date, time of preparation, and each subsequent modification of the batch;

iii) The VOM content of each cleaning solvent in the cleaning solution;

iv) The total amount of each cleaning solvent and water (or other non-VOM) used to prepare the as-used cleaning solution; and

v) The VOM content of the as-used cleaning solution, with supporting calculations. For cleaning solutions that are not prepared at the site but are used as purchased, the manufacturer's specifications for VOM content may be used if such manufacturer's specifications are based on results of tests of the VOM content conducted in accordance with methods specified in Section 219.105(a) of this Part;

4) All sources complying with this Section pursuant to the requirements of subsection (b)(2) of this Section shall collect and record the following information for each cleaning solution used:

A) The name and identification of each cleaning solution;

B) Date, time of preparation, and each subsequent modification of the batch;

C) The molecular weight, density, and VOM composite partial vapor pressure of each cleaning solvent, as determined in accordance with the applicable methods and procedures specified in Section 219.110 of this Part;

D) The total amount of each cleaning solvent used to prepare the as-used cleaning solution; and

E) The VOM composite partial vapor pressure of each as-used cleaning solution, as determined in accordance with the applicable methods and procedures specified in Section 219.110 of this Part;

5) All sources complying with this Section pursuant to the requirements of subsection (b)(3) of this Section shall comply with the following:

A) By January 1, 2012, or upon initial start-up of the source, whichever is later, and upon initial start-up of a new emissions control system, include in the certification required by subsection (e)(3) of this Section a declaration that the monitoring equipment required under subsection (f) of this Section has been properly installed and calibrated according to manufacturer's specifications;

B) If testing of an emissions control system is conducted pursuant to subsection (g) of this Section, the owner or operator shall, within 90 days after conducting such testing, submit a copy of all test results to the Agency and shall submit a certification to the Agency that includes the following:

i) A declaration that all tests and calculations necessary to demonstrate compliance with subsection (b)(3) of this Section have been properly performed;

ii) A statement whether the subject cleaning operation is or is not in compliance with subsection (b)(3) of this Section;

iii) The operating parameters of the emissions control system during testing, as monitored in accordance with subsection (f) of this Section;

C) Collect and record daily the following information for each cleaning operation subject to the requirements of subsection (b)(3) of this Section:

i) Emissions control system monitoring data in accordance with subsection (f) of this Section, as applicable;

ii) A log of operating time for the emissions control system, monitoring equipment, and associated cleaning equipment;

iii) A maintenance log for the emissions control system and monitoring equipment detailing all routine and non-routine maintenance performed, including dates and duration of any outages;

D) Maintain records documenting the use of good operating practices consistent with the equipment manufacturer's specifications for the cleaning equipment being used and the emissions control system equipment. At a minimum, these records shall include:

i) Records for periodic inspection of the cleaning equipment and emissions control system equipment with date of inspection, individual performing the inspection, and nature of inspection;

ii) Records for repair of malfunctions and breakdowns with identification and description of incident, date identified, date repaired, nature of repair, and the amount of VOM released into the atmosphere as a result of the incident;

6) All sources complying with this Section pursuant to the requirements of subsection (b)(5) of this Section shall collect and record monthly the following information for each cleaning operation subject to the requirements of subsection (b)(5) of this Section:

A) The name, identification, and volume of each VOM-containing cleaning solution as applied in each cleaning operation;

B) The volume of each fresh cleaning solvent used for cleaning coating, ink, adhesive, or resin manufacturing equipment;

C) The volume of cleaning solvent recovered for either offsite or onsite reuse or recycling for further use in the cleaning of coating, ink, adhesive, or resin manufacturing equipment;

7) The owner or operator of a source with cleaning operations that fall under one or more of the exclusions set forth in subsection (a)(2)(C)(v), (a)(2)(C)(xiii) or (a)(2)(C)(xvii), including sources exempt from the limitations of this Section because of the criteria in subsection (a)(1), shall:

A) By January 1, 2012, or upon initial start-up of the source, whichever is later, submit a certification to the Agency that includes a declaration that the source has cleaning operations that fall under one or more of the exclusions set forth in subsection (a)(2)(C)(v), (a)(2)(C)(xiii) or (a)(2)(C)(xvii), and a statement identifying each such cleaning operation and the exclusion applicable to each cleaning operation;

B) Collect and record the name, identification, and volume of each cleaning solvent as applied each day in each cleaning operation that falls under one or more of the exclusions set forth in subsection (a)(2)(C)(v), (a)(2)(C)(xiii), or (a)(2)(C)(xvii); and

C) Notify the Agency in writing if the amount of cleaning solvent used in the cleaning of medical device and pharmaceutical manufacturing operations or of sterilization indicating ink application equipment at the source ever exceeds 5.7 liters (1.5 gallons) per day, or if the amount of aerosol cleaning products used at the source ever exceeds 4.7 liters (1.25 gallons) per day, within 30 days after the exceedance occurs;

8) The owner or operator of a source with cleaning operations that fall under one or more of the exclusions set forth in subsection (a)(2)(C)(xviii) or (a)(2)(C)(xix), including sources exempt from the limitations of this Section because of the criteria in subsection (a)(1), shall:

A) By January 1, 2012, or upon initial start-up of the source, whichever is later, submit a certification to the Agency that includes a declaration that the source has cleaning operations that fall under one or more of the exclusions set forth in subsection (a)(2)(C)(xviii) or (a)(2)(C)(xix), and a statement identifying each such cleaning operation and the exclusion applicable to each cleaning operation;

B) Collect and record the name identification, volume, and VOM content of each cleaning solvent as applied each month in each cleaning operation that falls under one or more of the exclusions set forth in subsection (a)(2)(C)(xviii) or (a)(2)(C)(xix);

C) For cleaning operations that fall under the exclusion set forth in subsection (a)(2)(C)(xviii), collect and record each month information demonstrating that the exempt cleaning solvent is being used exclusively for the cleaning of plastic-based or vinyl-based substrates for use in the screen printing process when using UV curable ink and coating systems; and

D) For cleaning operations that fall under the exclusion set forth in subsection (a)(2)(C)(xix), collect and record each month information demonstrating that the exempt cleaning solvent is being used exclusively for production line performance testing of coatings that are in research and development and are not yet commercially used for the applications for which they are being tested;

9) All sources subject to the requirements of subsections (b) and (d) of this Section shall notify the Agency of any violation of subsection (b) or (d) by providing a description of the violation and copies of records documenting the violation to the Agency within 30 days following the occurrence of the violation;

10) All records required by this subsection (e) shall be retained by the source for at least three years and shall be made available to the Agency upon request.

f) Monitoring Requirements

1) If an afterburner is used to demonstrate compliance, the owner or operator of a source subject to subsection(b)(3) of this Section shall:

A) Install, calibrate, operate, and maintain temperature monitoring devices with an accuracy of $3^{o}C$ or $5^{o}F$ on the emissions control system in accordance with Section 219.105(d)(2) of this Part and in accordance with the manufacturer's specifications. Monitoring shall be performed at all times when the emissions control system is operating; and

B) Install, calibrate, operate and maintain, in accordance with manufacturer's specifications, a continuous recorder on the temperature monitoring devices, such as a strip chart, recorder or computer, with at least the same accuracy as the temperature monitor;

2) If a carbon adsorber is used to demonstrate compliance, the owner or operator of a source subject to subsection (b)(3) shall use Agency and USEPA approved continuous monitoring equipment that is installed, calibrated, maintained, and operated according to vendor specifications at all times the control device is in use. The continuous monitoring equipment shall monitor the VOM concentration of each carbon adsorption bed or the exhaust of the bed next in sequence to be desorbed;

3) If an emissions control system other than an afterburner or carbon adsorber is used to demonstrate compliance, the owner or operator of a source subject to subsection (b)(3) of this Section shall install, maintain, calibrate, and operate such monitoring equipment as set forth in the owner's or operator's plan approved by the Agency and USEPA pursuant to subsection (b)(3).

g) Testing Requirements

1) Testing to demonstrate compliance with the requirements of this Section shall be conducted by the owner or operator within 90 days after a request by the Agency, or as otherwise specified in this Section. Such testing shall be conducted at the expense of the owner or operator and the owner or operator shall notify the Agency in writing 30 days in advance of conducting the testing to allow the Agency to be present during the testing;

2) Testing to demonstrate compliance with the VOM content limitations in subsection (b)(1) of this Section, and to determine the VOM content of cleaning solvents and cleaning solutions, shall be conducted as follows:

   A) The applicable test methods and procedures specified in Section 219.105(a) of this Part shall be used; provided, however, Method 24, incorporated by reference in Section 219.112 of this Part, shall be used to demonstrate compliance; or

   B) The manufacturer's specifications for VOM content for cleaning solvents may be used if such manufacturer's specifications are based on results of tests of the VOM content conducted in accordance with methods specified in Section 219.105(a) of this Part; provided, however, Method 24 shall be used to determine compliance. In the event of any inconsistency between a Method 24 test and the manufacturer's specifications, the Method 24 test shall govern;

3) Testing to determine the VOM composite partial vapor pressure of cleaning solvents, cleaning solvent concentrates, and as-used cleaning solutions shall be conducted in accordance with the applicable methods and procedures specified in Section 219.110 of this Part;

4) For afterburners and carbon adsorbers, the methods and procedures of Section 219.105(d) through (f) shall be used for testing to demonstrate compliance with the requirements of subsection (b)(3) of this Section, as follows:

   A) To select the sampling sites, Method 1 or 1A, as appropriate, 40 CFR 60, appendix A, incorporated by reference in Section 219.112 of this Part;

   B) To determine the volumetric flow rate of the exhaust stream, Method 2, 2A, 2C, or 2D, as appropriate, 40 CFR 60, appendix A, incorporated by reference in Section 219.112 of this Part;

   C) To determine the VOM concentration of the exhaust stream entering and exiting the emissions control system, Method 25 or

25A, as appropriate, 40 CFR 60, appendix A, incorporated by reference in Section 219.112 of this Part. For thermal and catalytic afterburners, Method 25 must be used except under the following circumstances, in which case Method 25A must be used:

i) The allowable outlet concentration of VOM from the emissions control system is less than 50 ppmv, as carbon;

ii) The VOM concentration at the inlet of the emissions control system and the required level of control result in exhaust concentrations of VOM of 50 ppmv, or less, as carbon; and

iii) Due to the high efficiency of the emissions control system, the anticipated VOM concentration at the emissions control system exhaust is 50 ppmv or less, as carbon, regardless of inlet concentration. If the source elects to use Method 25A under this option, the exhaust VOM concentration must be 50 ppmv or less, as carbon, and the required destruction efficiency must be met for the source to have demonstrated compliance. If the Method 25A test results show that the required destruction efficiency apparently has been met, but the exhaust concentration is above 50 ppmv, as carbon, a retest is required. The retest shall be conducted using either Method 25 or Method 25A. If the retest is conducted using Method 25A and the test results again show that the required destruction efficiency apparently has been met, but the exhaust concentration is above 50 ppmv, as carbon, the source must retest using Method 25;

D) During testing, the cleaning equipment shall be operated at representative operating conditions and flow rates;

5) An owner or operator using an emissions control system other than an afterburner or carbon adsorber shall conduct testing to demonstrate compliance with the requirements of subsection (b)(3) of this Section as set forth in the owner's or operator's plan approved by the Agency and USEPA as federally enforceable permit conditions pursuant to subsection (b)(3).

(Source: Amended at_____, 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 subsections (a), (c), (g), (h), (j), (l), (n), (o), ~~and~~ (q), and (r) of this Section, 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:

			kg/l	lb/gal
a)	Automobile or Light-Duty Truck Coating			
	1)	Prior to May 1, 2012:		
		A) Prime coat	0.14	(1.2)
			0.14*	(1.2)*
		B) Primer surface coat	1.81	(15.1)
			1.81*	(15.1)*

BOARD 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)(1)(A) 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
	C) Topcoat		
		1.81	(15.1)
		1.81*	(15.1)*

BOARD 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)(1)(A) 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.)

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

2) On and after May 1, 2012, subject automobile and light-duty truck coating lines shall comply with the following limitations. These limitations shall not apply to materials supplied in containers with a net volume of 0.47 liters (16 oz) or less, or a net weight of 0.45 kg (1 lb) or less:

A) Electrodeposition primer (EDP) operations. For purposes of this subsection (a)(2)(A), "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.

		kg VOM/l coating solids applied	lb VOM/gal coating solids applied
i)	When solids turnover ratio (R_T) is greater than or equal to 0.160	0.084	(0.7)
ii)	When R_T is greater than or equal to 0.040 and less than 0.160	$0.084 \times 350^{0.160-R_T}$	$(0.084 \times 350^{0.160-R_T} \times 8.34)$

B) Primer surfacer operations

		kg VOM/l coating solids deposited	lb VOM/gal coating solids deposited
i)	VOM content limitation	1.44	(12.0)

ii) Compliance with the limitation set forth in subsection (a)(2)(B)(i) 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 219.105(b)(1)(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 surfacer limitation.

C) Topcoat operations

		kg VOM/l coating solids deposited	lb VOM/gal coating solids deposited
i)	VOM content limitation	1.44	(12.0)

ii) Compliance with the limitation set forth in subsection (a)(2)(C)(i) 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)(1)(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 topcoat limitation.

D) Combined primer surfacer and topcoat operations

		kg VOM/l coating solids deposited	lb VOM/gal coating solids deposited
i)	VOM content limitation	1.44	(12.0)

ii) Compliance with the limitation set forth in subsection (a)(2)(D)(i) shall be based on the daily-weighted average from the combined primer surfacer and topcoat operations. Compliance shall be demonstrated in accordance with the topcoat protocol referenced in Section 219.105(b)(1)(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 combined primer surfacer and topcoat limitation.

E) Final repair coat operations

		kg/l coatings	lb/gal coatings
i)	VOM content limitation	0.58	(4.8)

ii) Compliance with the final repair operations limitation set forth in subsection (a)(2)(E)(i) shall be on an occurrence-weighted average basis, calculated in accordance with the equation below, in which clear coatings shall have a weighting factor of 2 and all other coatings shall have a weighting factor of 1. For purposes of this subsection (a)(2)(E)(ii), an "occurrence" is the application of the combination of coatings that constitute a final repair coat for a single automobile or light-duty truck. Section 219.205 does not apply to the final repair coat limitation.

$$VOM_{tot} = \frac{2VOM_{cc} + \sum_{i=1}^{n} VOM_i}{n+2}$$

where:

VOM_{tot} = Total VOM content of all coatings, as applied, on an occurrence weighted average basis, and used to determine compliance with this subsection (a)(2)(E).

i = Subscript denoting a specific coating applied.

n = Total number of coatings applied in the final repair operation, other than clear coatings.

VOM_{cc} = The VOM content, as applied, of the clear coat used in the final repair operation.

VOM_i = The VOM content of each coating used in the final repair operation, as applied, other than clear coatings.

F) Miscellaneous Materials. For reactive adhesives subject to this subsection (a)(2)(F), compliance shall be demonstrated in accordance with the methods and procedures set forth in appendix A to Subpart PPPP of 40 CFR 63, incorporated by reference in Section 219.112 of this Part.

		kg/l	lb/gal
i)	Glass bonding primer	0.90	(7.51)
ii)	Adhesive	0.25	(2.09)
iii)	Cavity wax	0.65	(5.42)
iv)	Trunk sealer	0.65	(5.42)
v)	Deadener	0.65	(5.42)
vi)	Gasket/gasket sealing material	0.20	(1.67)
vii)	Underbody coating	0.65	(5.42)
viii)	Trunk interior coating	0.65	(5.42)
ix)	Bedliner	0.20	(1.67)
x)	Weatherstrip adhesive	0.75	(6.26)
xi)	Lubricating wax/compound	0.70	(5.84)

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

c) Paper Coating

1)	Prior to May 1, 2011:	kg/l	lb/gal
		0.28	(2.3)
2)	On and after May 1, 2011:	kg VOM/kg (lb VOM/lb) solids applied	kg VOM/kg (lb VOM/lb) coatings applied
	A) Pressure sensitive tape and label surface coatings	0.20	(0.067)
	B) All other paper coatings	0.40	(0.08)

3) The paper coating limitation set forth in this subsection (c) shall not apply to any owner or operator of any paper coating line on which flexographic, rotogravure, lithographic, or letterpress printing is performed if the paper coating line complies with the applicable emissions limitations in Subpart H of this Part. In addition, screen printing on paper is not regulated as paper coating, but is regulated under Subpart TT of this Part. 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.

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

			(3.5)	(6.7)
	H)	Solar Absorbent		
		i) Air dried	0.420 (3.5)	0.80 (6.7)
		ii) Baked	0.360 (3.0)	0.61 (5.1)

3) On and after May 1, 2011, the limitations set forth in this subsection (g) 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.

h) Large Appliance Coating

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

		(3.0)	(5.1)
E)	Heat Resistant		
i)	Air dried	0.420 (3.5)	0.80 (6.7)
ii)	Baked	0.360 (3.0)	0.61 (5.1)
F)	Metallic	0.420 (3.5)	0.80 (6.7)
G)	Pretreatment Coatings	0.420 (3.5)	0.80 (6.7)
H)	Solar Absorbent		
i)	Air dried	0.420 (3.5)	0.80 (6.7)
ii)	Baked	0.360	0.61

3) The limitations set forth in this subsection (h) 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 1 (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.

		kg/l	lb/gal
i)	Magnet Wire Coating	0.20 0.20*	(1.7) (1.7)*
j)	Prior to May 1, 2012: Miscellaneous Metal Parts and Products Coating		
1)	Clear coating	0.52 0.52*	(4.3) (4.3)*
2)	Extreme performance coating		
A)	Air dried	0.42 0.42*	(3.5) (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	(3.5)
			0.40*	(3.3)*
	B)	Baked	0.36	(3.0)
			0.34*	(2.8)*
5)	Metallic Coating			
	A)	Air dried	0.42	(3.5)
			0.42*	(3.5)*
	B)	Baked	0.36	(3.0)
			0.36	(3.0)*

6) For purposes of subsection (j)(5) of this Section, "metallic coating" means a coating which contains more than ¼ lb/gal of metal particles, as applied.

BOARD NOTE: On and after May 1, 2012, the limitations in Section 219.204(q) shall apply to this category of coating.

k)	Heavy Off-Highway Vehicle Products Coating		kg/l	lb/gal
1)	Extreme performance prime coat		0.42	(3.5)
			0.42*	(3.5)*
2)	Extreme performance topcoat (air dried)		0.42	(3.5)
			0.42*	(3.5)*
3)	Final repair coat (air dried)		0.42	(3.5)
			0.42*	(3.5)*

4) All other coatings are subject to the emission limitations for miscellaneous metal parts and products coatings in subsection (j).

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)

BOARD 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 (l)(2)(A) through (E):

			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 subsection (l)(2)(A) or (B) of this Section, as calculated using Section 219.216 of this Subpart; or

E) Use a combination of the methods specified in subsections (l)(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 (l)(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 (l)(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 (l)(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 (l)(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)	Prior to May 1, 2012: 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)*

BOARD NOTE: On and after May 1, 2012, the limitations in Section 219.204(q) shall apply to this category of coating.

n)	Prior to May 1, 2012: 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)*

BOARD NOTE: On and after May 1, 2012, the limitations in Section 219.204(q) shall apply to this category of coating.

o) Flat Wood Paneling Coatings. On and after August 1, 2010, flat wood paneling coatings shall comply with one of the following limitations:

1) 0.25 kg VOM/l of coatings (2.1 lb VOM/gal coatings); or

2) 0.35 kg VOM/l solids (2.9 lb VOM/gal solids).

BOARD NOTE: The Board has omitted subsection (p) and adopted a subsection (q) in order to preserve consistent labeling with similar requirements in 35 Ill. Adm. Code 218.

q) Miscellaneous Metal Parts and Products Coatings and Plastic Parts and Products Coatings On and After May 1, 2012. On and after May 1, 2012, the owner or operator of a miscellaneous metal or plastic parts coating line shall comply with the limitations in this subsection (q). The limitations in this subsection (q) shall not apply to aerosol coating products, powder coatings, or primer sealants and ejection cartridge sealants used in ammunition manufacturing. Primer sealants and ejection cartridge sealants shall instead be regulated under Subpart TT of this Part.

1) Metal Parts and Products. For purposes of this subsection (q)(1), "corrosion resistant basecoat" means 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. The limitations in this subsection (q)(1) shall not apply to stencil coats, safety-indicating coatings, solid-film lubricants, electric-insulating and thermal-conducting coatings, magnetic data storage disk coatings, and plastic extruded onto metal parts to form a coating. The limitations in Section 219.219, however, shall apply to these coatings unless specifically excluded in Section 219.219.

		kg VOM/l coating solids applied	lb VOM/gal coating solids applied
A)	General one component coating		
	i) Air dried	0.34 (2.8)	0.54 (4.52)
	ii) Baked	0.28 (2.3)	0.40 (3.35)
B)	General multi-component coating		
	i) Air dried	0.34 (2.8)	0.54 (4.52)
	ii) Baked	0.28 (2.3)	0.40 (3.35)
C)	Camouflage coating	0.42 (3.5)	0.80 (6.67)
D)	Electric-insulating varnish	0.42 (3.5)	0.80 (6.67)

E)	Etching filler	0.42 (3.5)	0.80 (6.67)
F)	Extreme high-gloss coating		
	i) Air dried	0.42 (3.5)	0.80 (6.67)
	ii) Baked	0.36 (3.0)	0.61 (5.06)
G)	Extreme performance coating		
	i) Air dried	0.42 (3.5)	0.80 (6.67)
	ii) Baked	0.36 (3.0)	0.61 (5.06)
H)	Heat-resistant coating		
	i) Air dried	0.42 (3.5)	0.80 (6.67)
	ii) Baked	0.36 (3.0)	0.61 (5.06)
I)	High performance architectural coating	0.42 (3.5)	0.80 (6.67)
J)	High temperature coating	0.42 (3.5)	0.80 (6.67)
K)	Metallic coating		
	i) Air dried	0.42 (3.5)	0.80 (6.67)
	ii) Baked	0.36 (3.0)	0.61 (5.06)
L)	Military specification coating		
	i) Air dried	0.34 (2.8)	0.54 (4.52)

	ii) Baked	0.28 (2.3)	0.40 (3.35)
M)	Mold-seal coating	0.42 (3.5)	0.80 (6.67)
N)	Pan backing coating	0.42 (3.5)	0.80 (6.67)
O)	Prefabricated architectural coating: multi-component		
	i) Air dried	0.42 (3.5)	0.80 (6.67)
	ii) Baked	0.28 (2.3)	0.40 (3.35)
P)	Prefabricated architectural coating: one-component		
	i) Air dried	0.42 (3.5)	0.80 (6.67)
	ii) Baked	0.28 (2.3)	0.40 (3.35)
Q)	Pretreatment coating	0.42 (3.5)	0.80 (6.67)
R)	Repair coats and touch-up coatings		
	i) Air dried	0.42 (3.5)	
	ii) Baked	0.36 (3.01)	
S)	Silicone release coating	0.42 (3.5)	0.80 (6.67)
T)	Solar-absorbent coating		
	i) Air dried	0.42 (3.5)	0.80 (6.67)

	ii) Baked	0.36 (3.0)	0.61 (5.06)
U)	Vacuum-metalizing coating	0.42 (3.5)	0.80 (6.67)
V)	Drum coating, new, exterior	0.34 (2.8)	0.54 (4.52)
W)	Drum coating, new, interior	0.42 (3.5)	0.80 (6.67)
X)	Drum coating, reconditioned, exterior	0.42 (3.5)	0.80 (6.67)
Y)	Drum coating, reconditioned, interior	0.50 (4.2)	1.17 (9.78)
Z)	Ammunition sealants		
	i) Air dried	0.42 (3.5)	0.80 (6.67)
	ii) Baked	0.36 (3.0)	0.61 (5.06)
AA)	Electrical switchgear compartment coatings		
	i) Air dried	0.42	0.80

		(3.5)	(6.67)
ii)	Baked	0.36 (3.0)	0.61 (5.06)
BB)	All other coatings		
i)	Air dried	0.40 (3.3)	0.73 (5.98)
ii)	Baked: primer/topcoat	0.34 (2.8)	0.54 (4.52)

2) Plastic Parts and Products: Miscellaneous. For purposes of this subsection (q)(2), miscellaneous plastic parts and products are plastic parts and products that are not subject to subsection (q)(3), (q)(4), (q)(5), or (q)(6) of this Section. The limitations in subsection (q)(2) shall not apply to touch-up and repair coatings; stencil coats applied on clear or transparent substrates; clear or translucent coatings; coatings applied at a paint manufacturing facility while conducting performance tests on the coatings; any individual coating category used in volumes less than 189.2 liters (50 gallons) in any one calendar year, if the total usage of all such coatings does not exceed 756.9 liters (200 gallons) per calendar year per source and substitute compliant coatings are not available; reflective coatings applied to highway cones; mask coatings that are less than 0.5 mm thick (dried) if the area coated is less than 25 square inches; electromagnetic interference/radio frequency interference (EMI/RFI) shielding coatings; and heparin-benzalkonium chloride (HBAC)-containing coatings applied to medical devices if the total usage of all such coatings does not exceed 378.4 liters (100 gallons) per calendar year per source. The limitations in Section 219.219, however, shall apply to such coatings unless specifically excluded in Section 219.219.)

		kg/l (lb/gal) coatings	kg/l (lb/gal) solids
A)	General one component coating	0.28 (2.3)	0.40 (3.35)
B)	General multi-component	0.42 (3.5)	0.80 (6.67)
C)	Electric dissipating coatings and shock-free coatings	0.80 (6.7)	8.96 (74.7)

D)	Extreme performance (2-pack coatings)	0.42 (3.5)	0.80 (6.67)
E)	Metallic coating	0.42 (3.5)	0.80 (6.67)
F)	Military specification coating		
	i) 1-pack coatings	0.28 (2.3)	0.54 (4.52)
	ii) 2-pack coatings	0.42 (3.5)	0.80 (6.67)
G)	Mold-seal coating	0.76 (6.3)	5.24 (43.7)
H)	Multi-colored coating	0.68 (5.7)	3.04 (25.3)
I)	Optical coating	0.80 (6.7)	8.96 (74.7)
J)	Vacuum-metalizing coating	0.80 (6.7)	8.96 (74.7)

3) Plastic Parts and Products Automotive/Transportation

		kg/l (lb/gal) coatings	kg/l (lb/gal) solids
A)	High bake coatings − interior and exterior parts		
	i) Flexible primer	0.54 (4.5)	1.39 (11.58)
	ii) Non-flexible primer	0.42 (3.5)	0.80 (6.67)
	iii) Basecoats	0.52 (4.3)	1.24 (10.34)
	iv) Clear coat	0.48	1.05

		(4.0)	(8.76)
v)	Non-basecoat/clear coat	0.52 (4.3)	1.24 (10.34)
B)	Low bake/air dried coatings − exterior parts		
i)	Primers	0.58 (4.8)	1.66 (13.80)
ii)	Basecoat	0.60 (5.0)	1.87 (15.59)
iii)	Clear coats	0.54 (4.5)	1.39 (11.58)
iv)	Non-basecoat/clear coat	0.60 (5.0)	1.87 (15.59)
C)	Low bake/air dried coatings − interior parts		
i)	Color coat	0.38 (3.2)	0.67 (5.66)
ii)	Primer	0.42 (3.5)	0.80 (6.67)
D)	Touchup and repair coatings	0.62 (5.2)	2.13 (17.72)
E)	Specialty		
i)	Vacuum metallizing basecoats	0.66 (5.5)	2.62 (21.8)
ii)	Vacuum metallizing topcoats	0.77 (6.4)	6.06 (49.1)

F) Red, yellow, and black coatings: Subject coating lines shall comply with a limit determined by multiplying the appropriate limit in subsections (q)(3)(A) through (q)(3)(C) of this Section by 1.15.

4) Plastic Parts and Products: Business Machine. The limitations of this subsection (q)(4) shall not apply to vacuum metallizing coatings, gloss reducers, texture topcoats, adhesion primers, electrostatic preparation coatings, stencil coats, and resist coats other than plating resist coats. The limitations in Section 219.219, however, shall apply to such coatings unless specifically excluded in Section 219.219.

		kg/l (lb/gal) coatings	kg/l (lb/gal) solids
A)	Primers	0.35 (2.9)	0.57 (4.80)
B)	Topcoat	0.35 (2.9)	0.57 (4.80)
C)	Color coat (texture coat)	0.28 (2.3)	0.40 (4.80)
D)	Color coat (non-texture coat)	0.28 (2.3)	0.40 (4.80)
E)	Texture coats other than color texture coats	0.35 (2.9)	0.57 (4.80)
F)	EMI/RFI shielding coatings	0.48 (4.0)	1.05 (8.76)
G)	Fog coat	0.26 (2.2)	0.38 (3.14)
H)	Touchup and repair	0.35 (2.9)	0.57 (4.80)

5) Pleasure Craft Surface Coatings

		kg/l (lb/gal) coatings	kg/l (lb/gal) solids
A)	Extreme high gloss coating − topcoat	0.60 (5.0)	1.88 (15.6)

B)	High gloss coating − topcoat	0.42 (3.5)	0.80 (6.7)
C)	Pretreatment wash primer	0.78 (6.5)	6.67 (55.6)
D)	Finish primer surfacer		
	Prior to January 1, 2014	0.60 (5.0)	1.88 (15.6)
	On and after January 1, 2014	0.42 (3.5)	0.80 (6.7)
E)	High build primer/surfacer	0.34 (2.8)	0.55 (4.6)
F)	Aluminum substrate antifoulant coating	0.56 (4.7)	1.53 (12.8)
G)	Other substrate antifoulant coating	0.40 (3.3)	0.73 (5.8)
H)	Antifouling Sealer/Tie Coat	0.42 (3.5)	0.80 (6.7)
I)	All other pleasure craft surface coatings for metal or plastic	0.42 (3.5)	0.80 (6.7)

6) Motor Vehicle Materials

		kg/l (lb/gal) coatings
A)	Cavity wax	0.65 (5.42)
B)	Sealer	0.65 (5.42)
C)	Deadener	0.65 (5.42)
D)	Gasket/gasket sealing material	0.20 (1.67)

E)	Underbody coating	0.65 (5.42)
F)	Trunk interior coating	0.65 (5.42)
G)	Bedliner	0.20 (1.67)
H)	Lubricating wax/compound	0.70 (5.84)

r) Aerospace Facilities. On and after January 1, 2021, the owner or operator of an aerospace facility must comply with the coating limitations in this subsection (r). The limitations in this subsection (r) shall not apply to the following activities where coating of aerospace components and vehicles may take place: research and development, quality control, laboratory testing, and electronic parts and assemblies (except for coating of completed assemblies). The limitations in this subsection (r) shall also not apply to aerospace facility operations involving space vehicles or rework operations performed on antique aerospace vehicles or components. The coating limitations in subsection (r)(2) of this Section shall not apply to aerosol coatings, Department of Defense classified coatings, or to the use of separate formulations of aerospace specialty coatings in volumes of less than 50 gallons per year, subject to a maximum exemption of 200 gallons for all such formulations applied annually.

1) VOM Content Limitations for Primers, Topcoats, and Chemical Milling Maskants

		kg/l	lb/gal
A)	Aerospace primer	0.350	(2.9)
B)	Primer for general aviation rework facility	0.540	(4.5)
C)	Exterior primer for large commercial aircraft (components or fully assembled)	0.650	(5.4)
D)	Topcoat	0.420	(3.5)
E)	Topcoat for general aviation rework facility	0.540	(4.5)

F)	Self-priming topcoat for aerospace applications	0.420	(3.5)
G)	Self-priming topcoat for general aviation rework facility	0.540	(4.5)
H)	Chemical milling maskant, type I	0.622	(5.2)
I)	Chemical milling maskant, type II	0.160	(1.3)

2) VOM Content Limitations for Aerospace Specialty Coatings

		kg/l	lb/gal
A)	Ablative coating	0.600	(5.0)
B)	Adhesion promoter for aerospace applications	0.890	(7.4)
C)	Adhesive bonding primer cured above 250 degrees Fahrenheit	1.030	(8.6)
D)	Adhesive bonding primer cured at or below 250 degrees Fahrenheit	0.850	(7.1)
E)	Aerospace flexible primer	0.640	(5.3)
F)	Aerospace pretreatment coating	0.780	(6.5)
G)	Antichafe coating	0.660	(5.5)
H)	Bearing coating	0.620	(5.2)
I)	Bonding maskant	1.230	(10.3)
J)	Caulking and smoothing compounds	0.850	(7.1)
K)	Chemical agent-resistant coating	0.550	(4.6)
L)	Clear coating for aerospace applications	0.720	(6.0)
M)	Commercial exterior aerodynamic structure primer	0.650	(5.4)

N)	Commercial interior adhesive	0.750	(6.3)
O)	Compatible substrate primer	0.780	(6.5)
P)	Corrosion prevention system	0.710	(5.9)
Q)	Critical use and line sealer maskant	1.020	(8.5)
R)	Cryogenic flexible primer	0.650	(5.4)
S)	Cryoprotective coating	0.600	(5.0)
T)	Cyanoacrylate adhesive	1.020	(8.5)
U)	Dry lubricative material for aerospace applications	0.870	(7.3)
V)	Electrostatic discharge and electromagnetic interference coating	0.800	(6.7)
W)	Elevated temperature Skydrol-resistant commercial primer	0.740	(6.2)
X)	Epoxy-polyamide topcoat	0.660	(5.5)
Y)	Extrudable, rollable, or brushable sealant for aerospace applications	0.280	(2.3)
Z)	Fire-resistant interior coating	0.800	(6.7)
AA)	Flight test coatings: missile or single use aircraft	0.420	(3.5)
BB)	Flight test coatings: all other	0.840	(7.0)
CC)	Fuel tank adhesive for aerospace applications	0.620	(5.2)
DD)	Fuel tank coating for aerospace applications	0.720	(6.0)
EE)	High temperature coating	0.850	(7.1)
FF)	Insulation covering	0.740	(6.2)

GG)	Intermediate release coating	0.750	(6.3)
HH)	Lacquer	0.830	(6.9)
II)	Metalized epoxy coating	0.740	(6.2)
JJ)	Mold release coating for aerospace applications	0.780	(6.5)
KK)	Nonstructural adhesive for aerospace applications	0.360	(3.0)
LL)	Optical anti-reflective coating	0.750	(6.3)
MM)	Part marking aerospace coating	0.850	(7.1)
NN)	Radiation-effect or electric coating	0.800	(6.7)
OO)	Rain erosion-resistant coating	0.850	(7.1)
PP)	Rocket motor bonding adhesive	0.890	(7.4)
QQ)	Rocket motor nozzle coating	0.660	(5.5)
RR)	Rubber-based adhesive	0.850	(7.1)
SS)	Scale inhibitor	0.870	(7.3)
TT)	Screen print ink for aerospace applications	0.840	(7.0)
UU)	Seal coat maskant	1.230	(10.3)
VV)	Sprayable sealant for aerospace applications	0.600	(5.0)
WW)	Silicone insulation material	0.850	(7.1)
XX)	Solid film lubricant	0.870	(7.3)
YY)	Specialized function coating	0.890	(7.4)
ZZ)	Structural autoclavable adhesive for aerospace applications	0.060	(0.5)

AAA)	Structural nonautoclavable adhesive for aerospace applications	0.850	(7.1)
BBB)	Temporary protective coating for aerospace applications	0.320	(2.7)
CCC)	Thermal control coating for aerospace applications	0.800	(6.7)
DDD)	Wet fastener installation coating	0.670	(5.6)
EEE)	Wing coating	0.850	(7.1)

(Source: Amended at_____, 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), (i), ~~or~~ (j), or (k) 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), (a)(1)(D), (a)(2)(A), (a)(2)(E), (a)(2)(F), (c)(1), (d), (e), (f), (i), or (o) 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) Prior to May 1, 2012, 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 that 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 that 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.

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

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 that 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 that 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 that 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 0.882kg 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 that 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 that 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 that 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 that 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 that 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 that 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) Prior to May 1, 2012, 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 that 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 that 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 that 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 that 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 that 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 that 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 that 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 that 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 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.

j) On and after May 1, 2012, no owner or operator of a miscellaneous metal parts and products coating line, plastic parts or products coating line, pleasure craft surface coating line, or motor vehicle materials coating line subject to the limitations of Section 219.204(q) of this Subpart shall apply coatings on the subject coating line unless the requirements of subsection (j)(1) or (j)(2) of this Section are met:

1) For each coating line that applies multiple coatings, all of which are subject to the same numerical emission limitation within Section 219.204(q) 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 that applies coatings subject to more than one numerical emission limitation in Section 219.204(q) of this Subpart, during the same day, the owner or operator shall have a site specific proposal approved by the Agency and approved by USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy) must be satisfied.

k) No owner or operator of an aerospace facility subject to the limitations of Section 219.204(r) of this Subpart shall apply coatings at the subject facility unless the requirements of subsection (k)(1) or (k)(2) of this Section are met:

1) For each averaging plan that involves multiple coatings, all of which are subject to the same numerical emission limitation within Section 219.204(r) 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;

2) For each averaging plan that involves coatings subject to more than one numerical emission limitation in Section 219.204(r) of this Subpart, during the same day, the owner or operator shall have a site specific proposal approved by the Agency and approved by USEPA as a SIP revision. To receive approval, the requirements of USEPA's Emissions Trading Policy Statement (and related policy) must be satisfied.

(Source: Amended at_____, effective_____)

Section 219.207 Alternative Emission Limitations

a) Any owner or operator of a coating line subject to Section 219.204 of this Subpart, except coating lines subject to Section 219.204(q)(6), 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), (j), (k), (l), ~~or~~ (m), or (n) 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), (k), (l), ~~or~~ (m), or (n) 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) Unless complying with an emission limitation in Section 219.204 that is already expressed in terms of weight of VOM per volume of

solids, calculate "S" according to the equation in Section 219.206 of this Subpart. For coating lines subject to an emission limitation in Section 219.204 that is already expressed in terms of weight of VOM per volume of solids, "S" is equal to such emission limitation;

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 in subsection (b)(2)(B) of this Section. If the coating line is subject to an emission limitation in Section 219.204 of this Subpart that is already expressed in terms of weight of VOM per volume of solids, VOM_1 is equal to that emission limitation.

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), (a)(1)(D), (a)(2)(A),(a)(2)(E), (a)(2)(F), (c)(1), (d), (e), (f), or (i) 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)(1)(B) (a) (1)(C), (a)(2)(B), (a)(2)(C), or (a)(2)(D) of this Subpart 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)(1)(A) or (b)(1)(B), as applicable.

d) No owner or operator of a miscellaneous metal parts and products coating line that 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/l (3.5 lbs/gal)), and that 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 that 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/l (3.5 lbs/gal)), and that 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 that 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/l (5.6 lbs/gal)), and that 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 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:

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

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 that 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 that 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 that 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 that 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 that 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 that 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 that 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 that 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 that 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.

l) No owner or operator of a flat wood paneling coating line that 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 of the flat wood paneling coating line complies with all requirements set forth in subsection (b)(2) of this Section.

m) On and after May 1, 2011, no owner or operator of a miscellaneous metal parts and products coating line, plastic parts and products coating line, or pleasure craft surface coating line that is equipped with a capture system and control device shall operate the subject coating line unless:

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 of the coating line complies with all requirements set forth in subsection (b)(2) of this Section.

n) No owner or operator of an aerospace facility that is equipped with a capture system and control device shall operate the subject aerospace coating operation unless:

1) The capture system and control device provide at least 90 percent reduction in the overall emissions of VOM from the aerospace coating operation; or

2) The owner or operator of the aerospace coating operation complies with all requirements set forth in subsection (b)(2) of this Section.

(Source: Amended at_____, effective_____)

Section 219.208 Exemptions From Emission Limitations

a) Exemptions for all coating categories except wood furniture coating and aerospace facilities. The limitations of this Subpart shall not apply to coating lines within a source, that otherwise would be subject to the same subsection of Section 219.204 (because they belong to the same coating category, e.g., can coating), provided that combined actual emissions of VOM from all lines at the source subject to that subsection never exceed 6.8 kg/day (15 lbs/day) before the application of capture systems and control devices. (For example, can coating lines within a source would not be subject to the limitations of Section 219.204(b) of this Subpart if the combined actual emissions of VOM from the can coating lines never exceed 6.8 kg/day (15 lbs/day) before the application of capture systems and control devices.) Prior to May 2012, volatile organic material emissions from heavy off-highway vehicle products coating lines must be combined with VOM emissions from miscellaneous metal parts and products coating lines to determine applicability. On and after May 1, 2012, VOM emissions from heavy off-highway vehicle products coating lines shall be combined with VOM emissions from miscellaneous metal parts and products coating lines and plastic parts and products coating lines to determine applicability. Any owner or operator of a coating source shall comply with 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(a) of this Subpart if total VOM emissions from the subject coating lines are always less than or equal to 6.8 kg/day (15 lbs/day) before the application of capture systems and control devices and, therefore, are not subject to the limitations of Section 219.204 of this Subpart. Once a category of coating lines at a source is subject to the limitations in Section 219.204 of this Part the coating lines are always subject to the limitations in Section 219.204 of this Subpart.

b) Applicability for wood furniture coating

1) The limitations of this Subpart shall apply to a source's wood furniture coating lines if the source contains process emission units, not regulated by Subparts B, E, F (excluding Section 219.204(l) of this Subpart), H (excluding Section 219.405 of this Part), Q, R, S, T (excluding Section 219.486 of this Part), V, X, Y, Z or BB of this Part, which as a group both:

A) Have a maximum theoretical emissions of 91 Mg (100 tons) or more per calendar year of VOM if no air pollution control equipment were used, and

B) Are not limited to less than 91 Mg (100 tons) of VOM per calendar year if no air pollution control equipment were used, through production or capacity limitations contained in a federally enforceable permit or SIP revision.

2) The limitations of this Subpart shall apply to a source's wood furniture coating lines, on and after March 15, 1996, if the source contains process emission units, which as a group, have a potential to emit 22.7 Mg (25 tons) or more of VOM per calendar year and have not limited emissions to less than 22.7 Mg (25 tons) of VOM per calendar year through production or capacity limitations contained in a federally enforceable operating permit or SIP revision, and that:

A) Are not regulated by Subparts B, E, F (excluding Section 219.204(l) of this Subpart), H, Q, R, S, T (excluding Section 219.486 of this Part), V, X, Y, Z or BB of this Part; and

B) Are not included in any of the following categories: synthetic organic chemical manufacturing industry (SOCMI) distillation, SOCMI reactors, plastic parts coating (business machines), plastic parts coating (other), offset lithography, industrial wastewater, autobody refinishing, SOCMI batch processing, volatile organic liquid storage tanks and clean-up solvents operations.

3) If a source ceases to fulfill the criteria of subsection (b)(1) or (b)(2) of this Section, the limitations of Section 219.204(l) of this Subpart shall continue to apply to any wood furniture coating line which was ever subject to the limitations of Section 219.204(l) of this Subpart.

4) For the purposes of subsection (b) of this Section, an emission unit shall be considered to be regulated by a Subpart if it is subject to the limitations of that Subpart. An emission unit is not considered regulated by a Subpart if it is not subject to the limits of that Subpart, e.g., the emission unit is covered by an exemption in the Subpart or the applicability criteria of the Subpart are not met.

5) Any owner or operator of a wood furniture coating line to which the limitations of this Subpart are not applicable due to the criteria in subsection (b) of this Section shall, upon request by the Agency or the USEPA, submit records to the Agency and the USEPA within 30 calendar days from the date of the request that document that the coating line is exempt from the limitations of this Subpart.

c) On and after March 15, 1996, the limitations of this Subpart shall not apply to touch-up and repair coatings used by a coating source described by Section 219.204(b), (d), (f), (g), (i), and (q)(5) of this Subpart; provided that the source-wide volume of such coatings used does not exceed 0.95 1 (1 quart) per eight-hour period or exceed 209 1/yr (55 gal/yr) for any rolling 12 month period. Recordkeeping and reporting for touch-up and repair coatings shall be consistent with subsection (d) of this Section.

d) Prior to May 1, 2012, the limitations of this Subpart shall not apply to touch-up and repair coatings used by a coating source described by Section 219.204(j), (m), and (n) of this Subpart, provided that the source-wide volume of the coatings used does not exceed 0.95 l (1 quart) per eight-hour period or exceed 209 l/yr (55 gal/yr) for any rolling twelve month period. Recordkeeping and reporting for touch-up and repair coatings shall be consistent with subsection (e) of this Section.

e) On and after March 15, 1996, the owner or operator of a coating line or a group of coating lines using touch-up and repair coatings that are exempted from the limitations of Section 219.204(b), (d), (f), (g), (i), (j), (m), (n), and (q)(5) of this Subpart because of the provisions of subsection (c) or (d) of this Section shall:

1) Collect and record the name, identification number, and volume used of each touch-up and repair coating, as applied on each coating line, per eight-hour period and per month;

2) Perform calculations on a daily basis, and maintain at the source records of such calculations of the combined volume of touch-up and repair coatings used source-wide for each eight-hour period;

3) Perform calculations on a monthly basis, and maintain at the source records of such calculations of the combined volume of touch-up and repair coatings used source-wide for the month and the rolling 12 month period;

4) Prepare and maintain at the source an annual summary of the information required to be compiled pursuant to subsections (e)(1) and (e)(2) of this Section on or before January 31 of the following year;

5) Maintain at the source for a minimum period of three years all records required to be kept under this subsection (e) and make such records available to the Agency upon request;

6) Notify the Agency in writing if the use of touch-up and repair coatings at the source ever exceeds a volume of 0.95 1 (1 quart) per eight-hour period or exceeds 209 1/yr (55 gal/yr) for any rolling 12 month period within 30 days after any such exceedance. Such notification shall include a copy of any records of such exceedance; and

7) "Touch-up and repair coatings" means, for purposes of 35 Ill. Adm. Code 219.208, any coating used to cover minor scratches and nicks that occur during manufacturing and assembly processes.

f) Applicability for aerospace facilities

1) Except as provided in subsection (f)(6), the requirements of this Subpart shall apply to an aerospace facility's aerospace coating operations and cleaning operations on and after January 1, 2021, if the source contains process emission units, which as a group have a potential to emit 22.7 Mg (25 tons) or more of VOM per calendar year and have not limited emissions to less than 22.7 Mg (25 tons) of VOM per calendar year through production or capacity limitations contained in a federally enforceable permit or SIP revision.

2) If a source ceases to fulfill the criteria of subsection (f)(1) of this Section, the requirements of this Subpart shall continue to apply to any aerospace facility which was ever subject to the requirements of this Subpart.

3) The limitations of Section 219.204(r)(2) shall not apply to touch-up coatings at aerospace facilities, provided that the combined source-wide volume of the coatings that do not comply with the limitations of Section 219.204(r)(2) of this Part used at an aerospace facility does not exceed

2.85 l (3 quarts) per 24-hour period or exceed 209 l/yr (55 gal/yr) for any rolling twelve-month period. Recordkeeping and reporting for touch-up coatings shall be consistent with Section 219.211 (j)(2).

4) The requirements in Section 219.211(k) shall apply to an aerospace facility's aerospace coating operations and cleaning operations on and after January 1, 2021, if the source contains process emission units, which as a group, have a potential to emit less than 22.7 Mg (25 tons) of VOM per calendar year or have limited emissions to less than 22.7 Mg (25 tons) of VOM per calendar year through production or capacity limitations contained in a federally enforceable operating permit or SIP revision.

(Source: Amended at_____, 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 that is exempted 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 that 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:

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 that 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 that 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 that 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 that 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)(1)(B), (a)(1)(C), (a)(2)(B), (a)(2)(C), ~~or~~ (a)(2)(D), or (r) 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. The 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 that 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 (h)(2) of this Subpart, the application methods 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;

   F) For coating lines subject to the limitations of Section 219.204(o) of this Subpart, the weight of VOM per volume of coatings or solids, as applicable, for each coating as applied each day on each coating line;

   G) For coating lines subject to the limitations of Section 219.204(a)(2)(A) of this Subpart, the weight of VOM per volume of solids in each coating as applied each day on each coating line, and the solids turnover ratio of the EDP operation, with supporting calculations;

H) For coating lines subject to the limitations of Section 219.204(a)(2)(E), the weight of VOM per volume and volume of each coating used in the final repair coat operation, and the weight of VOM per volume of the final repair coat as applied, calculated on an occurrence weighted average basis;

I) For coating lines subject to the limitations of Section 219.204(q) 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.

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, unless otherwise specified, 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 that 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;

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;

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;

G) For coating lines subject to the limitations of Section 219.204(o) of this Subpart, the weight of VOM per volume of coatings or solids, as applicable, for each coating, as applied each day on each coating line;

H) For coating lines subject to the limitations of Section 219.204(a)(2)(A) of this Subpart, the weight of VOM per volume of solids in each coating as applied each day on each coating line, certified product data sheets for each coating, and the solid turnover ratio for the EDP operation, calculated on a calendar monthly basis, with supporting calculations;

I) For coating lines subject to the limitations of Section 219.204(a)(2)(E), the weight of VOM per volume and volume of each coating used in the final repair coat operation, the weight of VOM per volume of the final repair coat as applied, calculated on an occurrence weighted average basis, and certified product data sheets for each coating;

J) For coating lines subject to the limitations of Section 219.204(q) 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), as applicable. 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, as applicable.

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. The 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(a)(2)(A) of this Subpart, the weight of VOM per volume of solids in each coating as applied each day on each coating line.

F) 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.

G) For coating lines subject to the limitations of Section 219.204(g)(2) or (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.

H) For coating lines subject to the limitations of Section 219.204(o) of this Subpart, the weight of VOM per volume of coatings or solids,

as applicable, for each coating, as applied each day on each coating line.

I) For coating lines subject to the limitations of Section 219.204(q) 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.

J) 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.

K) The method by which the owner or operator will create and maintain records each day as required in subsection (d)(2) of this Section.

L) 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 that 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(a)(2)(A) of this Subpart, the weight of VOM per volume 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 (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.

G) For coating lines subject to the limitations of Section 219.204(o) of this Subpart, the weight of VOM per volume of coatings or solids, as applicable, for each coating, as applied each day on each coating line.

H) For coating lines subject to the limitations of Section 219.204(q) 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.

I) 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, as applicable. 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, as applicable.

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), (h), or (k), (l), (m), or (n) 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 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, or combined primer surfacer and topcoat operation, subject to the limitations of

Section 219.204(a)(1)(B), (a)(1)(B), (a)(2)(C), or (a)(2)(D) 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. The certification shall include:

   A) The name and identification number of each coating operation that will comply by means of Section 219.204(a)(1)(B),(a)(1)(C), (a)(2)(B), (a)(2)(C), or (a)(2)(D) 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) of this Section.

   H) An example format for presenting the records required in subsection (f)(2) of this Section.

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 demonstrate compliance with the topcoat protocol referenced in Section 219.105(b)(1)(B) and to calculate the daily-weighted average VOM emissions from the coating operations in kg/l (lbs/gal) of coating solids deposited in accordance with the proposal submitted, and approved pursuant to Section 219.204(a)(1)(B), (a)(1)(C), (a)(2)(B), (a)(2)(C), or (a)(2)(D) 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 or devices are 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/l (lbs/gal) of coating solids deposited in accordance with the proposal submitted and approved pursuant to Section 219.204 (a)(1)(B), (a)(1)(C), (a)(2)(B), (a)(2)(C), or (a)(2)(D) 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)(1)(B), (a)(1)(C), (a)(2)(B), (a)(2)(C), or (a)(2)(D) 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 after 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 the 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 those records available to the Agency upon request.

h) On and after a date consistent with Section 219.106 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 219.219 of this Subpart, except aerospace facilities, shall comply with the following:

1) By May 1, 2012, or upon initial start-up, whichever is later, submit a certification to the Agency that includes:

A) A description of the practices and procedures that the source will follow to ensure compliance with the applicable requirements in Section 219.219 of this Subpart;

B) For sources subject to Section 219.219(a)(6), the work practices plan specified in that Section;

C) For sources subject to Section 219.219(b)(6), the application methods used to apply coatings on the subject coating line;

2) Notify the Agency of any violation of Section 219.219 of this Subpart by providing a description of the violation and copies of records documenting the 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 (h) for a minimum of three years from the date the document was created and make those records available to the Agency upon request.

i) On and after a date consistent with Section 219.106(d) of this Part, or on and after the initial start-up date, whichever is later, the owner or operator of a flat wood paneling coating line subject to the requirements in Section 219.217 of this Subpart shall comply with the following:

1) By August 1, 2010, 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 219.217(c) and (d) of this Subpart; and

2) Notify the Agency of any violation of Section 219.217 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.

j) On and after January 1, 2021, the owner or operator of an aerospace facility subject to the requirements of this Subpart pursuant to Section 219.208(f)(1) of this Subpart shall comply with the following:

1) Each owner or operator using coatings listed in Section 219.204(r) shall:

A) Maintain a current list of coatings in use with category and VOM content as applied; and

B) Record coating usage on an annual basis.

2) Each owner or operator using touch-up coatings that do not meet the limitations of Section 219.204(r)(2) shall:

A) Collect and record the name, identification number, and volume used of each touch-up coating that does not meet the limitations of Section 219.204(r)(2), as applied in each aerospace coating operation, per 24-hour period and per month;

B) Perform calculations on a daily basis, and maintain at the source records of such calculations, of the combined volume of touch-up coatings that do not meet the limitations of Section 219.204(r)(2) used source-wide for each 24-hour period;

C) Perform calculations on a monthly basis, and maintain at the source records of such calculations, of the combined volume of

touch-up coatings that do not meet the limitations of Section 219.204(r)(2) used source-wide for the month and the rolling 12-month period;

D) Prepare and maintain at the source an annual summary of the information required to be compiled pursuant to subsections (j)(2)(A), (j)(2)(B), and (j)(2)(C) of this Section on or before January 31 of the following year;

E) Maintain at the source for a minimum period of three years all records required to be kept under this subsection (j)(2) and make such records available to the Agency upon request; and

F) Notify the Agency in writing if the combined use of touch-up coatings that do not meet the limitations of Section 219.204(r)(2) at the source ever exceeds a volume of 2.85 l (3 quarts) per 24-hour period or exceeds 209 l/yr (55 gal/yr) for any rolling 12-month period within 30 days after any such exceedance. Such notification shall include a copy of any records of such exceedance.

3) Each owner or operator using cleaning solvents required in Section 219.219(e) or (g) shall:

A) For aqueous and semiaqueous hand-wipe cleaning solvents, maintain a list of materials used with corresponding water contents;

B) For vapor pressure compliant hand-wipe cleaning solvents:

i) Maintain a current list of cleaning solvents in use with their respective vapor pressures or, for blended solvents, VOM composite vapor pressures.

ii) Record cleaning solvent usage on an annual basis; and

C) For cleaning solvents with a vapor pressure greater than 45 mm Hg used in exempt hand-wipe cleaning operations:

i) Maintain a list of exempt hand-wipe cleaning processes.

ii) Record cleaning solvent usage on an annual basis.

4) Each owner or operator using control equipment under Section 219.207(n), shall meet all applicable testing, monitoring, and recordkeeping requirements of Section 219.105(c), (d), and (e).

5) By January 1, 2021, or upon initial start-up, whichever is later, the owner or operator of an aerospace facility shall 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 of Section 219.219(e) and (g).

6) Each owner and operator of an aerospace facility shall notify the Agency of any violation of this Part 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.

k) Exempt Aerospace Facilities

1) For aerospace facilities that are exempt under Section 219.208(f)(1) of this Subpart, by January 1, 2021, or upon initial start-up, the owner or operator of an aerospace facility shall certify to the Agency that the source is exempt under such provisions. Such certification shall include:

A) A declaration that the source is exempt under Section 219.208(f)(1) of this Subpart; and

B) Calculations that demonstrate that the source meets the criteria for exemption.

2) For sources exempt under Section 219.208(f)(1) of this Subpart, on and after January 1, 2021, the owner or operator of an aerospace facility shall collect and record all of the following information for each aerospace coating operation and cleaning operation, as applicable, and maintain the information at the source for a period of three years. The owner or operator shall, upon request by the Agency or the USEPA, submit the information to the Agency and the USEPA within 30 calendar days from the date of the request, along with any other documentation necessary to demonstrate that the aerospace facility is exempt from the requirements of this Subpart:

A) The name and identification number of each coating as applied and cleaning solvent used; 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 and cleaning solvent used on a monthly basis.

3) On and after January 1, 2021, any owner or operator of an aerospace facility exempt under Section 219.208(f)(1) of this Subpart shall notify the Agency if the source's VOM emissions exceed the criteria in Section 219.208(f)(1) of this Subpart by sending a copy of calculations showing such an exceedance within 30 days after the exceedance occurs.

(Source: Amended at_____, effective_____)

Section 219.219 Work Practice Standards for Aerospace Facilities, Automobile and Light-Duty Truck Assembly Coatings, and Miscellaneous Metal and Plastic Parts Coatings

a) Every owner or operator of a coating line subject to the requirements of Section 219.204(a)(2) 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, and coating-related waste materials are kept closed at all times except when depositing or removing those materials;

3) Minimize spills of VOM-containing coatings, thinners, and coating-related waste materials;

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

5) Minimize VOM emissions from cleaning of storage, mixing, and conveying equipment;

6) Develop and implement a work practice plan to minimize VOM emissions from cleaning and from purging of equipment associated with coating lines subject to the limitations in Section 219.204(a)(2). The plan shall specify practices and procedures that the source will follow to ensure that VOM emissions from the operations listed in this subsection (a)(6) are minimized. If the owner or operator of the subject coating line has already implemented a work practice plan for the coating line pursuant to Subpart IIII of 40 CFR 63, incorporated by reference in Section 219.112 of this Part, the owner or operator may revise the plan as necessary to comply with this Section.

A) Vehicle body wiping;

B) Coating line purging;

C) Flushing of coating systems;

D) Cleaning of spray booth grates, walls, and equipment; and

F) Cleaning of external spray booth areas.

b) Except as provided in subsection (c) of this Section, every owner or operator of a coating line described in Section 219.204(q) 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 these materials;

3) Minimize spills of VOM-containing coatings, thinners, coating-related waste materials, and cleaning materials;

4) Convey VOM-containing coatings, thinners, coating-related waste materials, and cleaning materials from one location to another in closed containers or pipes;

5) Minimize VOC emissions from cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers; and

6) 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 (b)(6)(C), 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 (b)(6)(E), 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;

F) Airless spray;

G) Air-assisted airless spray; or

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

c) Notwithstanding subsection (b) of this Section, the application method limitations in subsection (b)(6) shall not apply to the following:

1) Coating lines complying with Section 219.207(m)(1);

2) For metal parts and products coating operations: touch-up coatings, repair coatings, textured finishes, stencil coatings, safety-indicating coatings, solid-film lubricants, electric-insulating and thermal-conducting coatings, magnetic data storage disk coatings, and plastic extruded onto metal parts to form a coating;

3) For pleasure craft surface coating operations: extreme high gloss coatings;

4) For plastic parts and products coating operations: airbrush operations using 18.9 liters (5 gallons) or less of coating per year.

5) For ammunition sealant operations: cap sealants and mouth waterproofing sealants.

d) Subsections (e) and (g) shall not apply to the following activities where cleaning of aerospace components and vehicles may take place: research and development, quality control, laboratory testing, and cleaning of electronic parts and assemblies (except for cleaning of completed assemblies). Subsections (e) and (g) shall also not apply to aerospace facility operations involving space vehicles or rework operations performed on antique aerospace vehicles or components. Subsections (e) and (g) shall also not apply to aqueous cleaning solvents.

e) Except as provided in subsections (d) and (f) of this Section, every owner or operator of an aerospace facility shall:

1) Ensure that all fresh and used cleaning solvents, except semi-aqueous cleaning solvents, used in solvent cleaning operations are stored in containers that shall be kept closed at all times except when filling or emptying;

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 these materials;

3) Ensure that cloth and paper, or other absorbent applicators, moistened with cleaning solvents are stored in closed containers (cotton-tipped swabs used for very small cleaning operations are exempt);

4) Minimize spills of VOM-containing coatings, thinners, coating-related waste materials, and cleaning materials;

5) Convey VOM-containing coatings, thinners, coating-related waste materials, and cleaning materials from one location to another in closed containers or pipes;

6) Minimize VOM emissions from cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers; and

7) 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 (e)(7)(C), 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 (e)(7)(E), 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;

F) Brush coating;

G) Cotton-tipped swab application; or

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

f) The application method limitations in subsection (e)(7) shall not apply to the following:

1) Any situation that normally requires the use of an airbrush or an extension on the spray gun to properly reach limited access spaces;

2) The application of aerospace specialty coatings;

3) The application of coatings that contain fillers that adversely affect atomization with HVLP spray guns and that the Agency has determined cannot be applied by any of the application methods specified in subsection (e)(7) above;

4) The application of coatings that normally have a dried film thickness of less than 0.0013 centimeter (0.0005 inch) and that the Agency has determined cannot be applied by any of the application methods specified in subsection (e)(7) above;

5) The use of airbrush application methods for stenciling, lettering, and other identification markings;

6) The use of hand-held spray can application methods; and

7) Application of touch-up and repair coatings.

g) Cleaning Operations at Aerospace Facilities

1) Hand-wipe cleaning at aerospace facilities. Hand-wipe cleaning (excluding cleaning of spray gun equipment performed in accordance with subsection (g)(3)) shall use cleaning solvents that meet the definition of aqueous cleaning solvent or have a composite vapor pressure of 45 mm Hg (24.1 in. H_2 O) or less at 20°C (68°F).

2) The following cleaning operations are exempt from the requirements of subsection (g)(1):

A) Cleaning during the manufacture, assembly, installation, maintenance, or testing of components of breathing oxygen systems that are exposed to the breathing oxygen;

B) Cleaning during the manufacture, assembly, installation, maintenance, or testing of parts, subassemblies, or assemblies that are exposed to strong oxidizers or reducers (e.g., nitrogen tetroxide, liquid oxygen, hydrazine);

C) Cleaning and surface activation prior to adhesive bonding;

D) Cleaning of electronics parts and assemblies containing electronics parts;

E) Cleaning of aircraft fluid systems and ground support equipment fluid systems that are exposed to the fluid, including air-to-air heat exchangers and hydraulic fluid systems;

F) Cleaning of fuel cells, fuel tanks, and confined spaces;

G) Surface cleaning of solar cells, coated optics, and thermal control surfaces;

H) Cleaning during fabrication, assembly, installation, and maintenance of upholstery, curtains, carpet, and other textile materials used on the interior of the aircraft;

I) Cleaning of metallic and nonmetallic materials used in honeycomb cores during the manufacture or maintenance of these cores, and cleaning of the completed cores used in the manufacture of aerospace vehicles or components;

J) Cleaning of aircraft transparencies, polycarbonate, or glass substrates;

K) Cleaning and solvent usage associated with research and development, quality control, or laboratory testing;

L) Cleaning operations, using nonflammable liquids, conducted within 5 feet of energized electrical systems. Energized electrical systems means any AC or DC electrical circuit on an assembled aircraft once electrical power is connected, including interior passenger and cargo areas, wheel wells and tail sections; and

M) Cleaning operations identified as essential uses under the Montreal Protocol for which the United States Environmental Protection Agency Administrator has allocated essential use allowances or exemptions in 40 CFR 82.4.

3) Spray gun cleaning at aerospace facilities. Spray gun cleaning, in which spray guns are used for the application of coatings or any other materials that require the spray guns to be cleaned, shall be cleaned by one or more of the following methods:

A) Enclosed system.

i) Clean the spray gun in an enclosed system that is closed at all times except when inserting or removing the spray gun. Cleaning shall consist of forcing solvent through the gun.

ii) Each owner or operator using an enclosed spray gun cleaner shall visually inspect the seals and all other potential sources of leaks at least once per month. Each inspection shall occur while the spray gun cleaner is in operation. If leaks are found in the enclosed system, the enclosed cleaner shall be shut down until the leak is repaired or its use is permanently discontinued.

B) Nonatomized cleaning. Clean the spray gun by placing cleaning solvent in the pressure pot and forcing it through the gun with the atomizing cap in place. No atomizing air shall be used. Direct the cleaning solvent from the spray gun into a vat, drum, or other waste container that is closed when not in use.

C) Disassembled spray gun cleaning. Disassemble the spray gun and clean the components by hand in a vat, which shall remain closed at all times except when in use. Alternatively, soak the components in a vat, which shall remain closed during the soaking period and when not inserting or removing components.

D) Atomizing cleaning. Clean the spray gun by forcing the cleaning solvent through the gun and direct the resulting atomized spray into a waste container that is fitted with a device designed to capture the atomized cleaning solvent emissions.

4) Flush cleaning at aerospace facilities. For cleaning solvents used in flush cleaning of parts, assemblies, and coating line components, the used cleaning solvent (except for semiaqueous cleaning solvents) must be emptied into an enclosed container or collection system that is kept closed when not in use or captured with wipers provided they comply with the housekeeping requirements of (e)(1) through (3) of this Section. Aqueous cleaning solvents are exempt from these requirements.

(Source: Amended at_____, effective_____)

TECHNICAL SUPPORT DOCUMENT

for

CONTROL of VOM from AEROSPACE COATING and SOLVENT USE

AQPSTR 19-08

October 2020

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
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SPRINGFIELD, IL 62794-9276

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Table of Contents

List of Acronyms

CAA	Clean Air Act
acfm	actual cubic feet per minute
Act	Illinois Environmental Protection Act
CFR	Code of Federal Regulations
CTG	Control Techniques Guidelines
g/L	grams per liter
HAP	hazardous air pollutant
HVLP	high-volume low-pressure spray
IAC	Illinois Administration Code
Illinois EPA	Illinois Environmental Protection Agency
lb/gal	pounds per gallon
mmHg	millimeters of mercury
MW	molecular weight
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
ppmv	parts per million by volume
PTE	potential to emit
RACT	Reasonably Available Control Technology
scfm	standard cubic feet per minute
SIP	State Implementation Plan
TPY	tons per year
TSD	technical support document
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound
VOM	volatile organic material

1.0 Executive Summary

The purpose of this Technical Support Document ("TSD") is to present the rationale and methodology relied upon to support the Illinois Environmental Protection Agency's ("Illinois EPA" or "Agency") proposed regulatory changes to control Volatile Organic Material ("VOM") emissions from aerospace manufacturing and rework facilities ("aerospace facilities") in the counties of Madison, Monroe, and St. Clair ("Metro-East area"). To evaluate the potential for implementing the new emission standards for Illinois sources, the Illinois EPA reviewed and evaluated the requirements of the Clean Air Act ("CAA"), the Illinois Environmental Protection Act, the United States Environmental Protection Agency's ("USEPA") *Control Techniques Guidelines for Control of Volatile Organic Compound Emissions from Coating Operations at Aerospace Manufacturing and Rework Operations* ("Aerospace CTG"), the National Emission Standards for Hazardous Air Pollutants for Aerospace Manufacturing and Rework Operations ("Aerospace NESHAP") at Title 40 of the Code of Federal Regulations Part 63 Subpart GG, and other available information, including regulations in other states. In addition, Illinois EPA staff held conversations with representatives of potentially affected sources in Illinois. Based on all of this information, Illinois EPA is proposing the adoption of the aerospace CTG control measures for the Metro-East area.

This TSD discusses the Agency's reasons for proposing the rulemaking, the technical feasibility, economic reasonableness, and cost effectiveness of the proposed control measures, as well as the sources potentially affected by the proposed regulation.

The Illinois EPA has determined that the proposed regulations to implement the aerospace CTG control measures are both technically feasible and economically reasonable. Currently, Illinois EPA has identified three potentially affected sources in the Metro-East area.

The proposed regulatory changes, if adopted, will add the CTG-recommended control measures for the Metro-East area in Title 35 of the Illinois Administration Code ("IAC") Part 219.

2.0 Introduction

The Illinois EPA is proposing a rule limiting emissions of VOM from aerospace manufacturing and rework facilities. The proposed limits for VOM emissions from the source category are informed by the aerospace CTG. Illinois has previously not adopted VOM RACT rules specifically for aerospace facilities because there have not been any sources that would be subject to its requirements. However, a source contacted the Agency with concerns about an expansion of its aerospace facility in the Metro-East area. After expanding operations, the source is expected to be large enough such that Illinois should add specific aerospace coating limits to avoid a situation where the source would potentially be subject to more general Section 219.204 regulations for miscellaneous metal parts and products coatings, which are inappropriate for the aerospace industry, as recognized in the aerospace CTG and CAA Section 183(b), which required the promulgation of a CTG in that source category. The aerospace CTG states on page 2-7:

> "*The quality of the coatings is critical to the airworthiness and safety of the final product. Aerospace vehicle manufacturing is strictly controlled by the Federal Aviation Administration, the Department of Defense, and specific customer requirements. Industry specifications for coatings are dictated by these requirements.*"[1]

Additionally, the aerospace CTG specifically recognizes that VOM RACT rules for miscellaneous metal parts and products coatings are not appropriate for aerospace applications, stating on page 1-1:

> "*Section 183(b)(3) of the CAA requires the [US]EPA Administrator to issue a CTG for the control of VOC emissions from coatings and solvents used in the aerospace industry. This CTG is intended to supersede any potential applicability of the Miscellaneous Metal Part and Products CTG (RACT) requirements for manufacturing and rework operations of aerospace vehicles and* components.*"*[1]

The Agency has not proposed similar amendments to 35 IAC Part 218 because there are no known sources in the Chicago area to which the proposed rulemaking would apply.

3.0 Potentially Affected Source Description

The aerospace industry consists of civilian and military original equipment manufacturers and rework facilities, and a number of subcontractors, with some of those subcontractors dedicated to the aerospace industry and others often classified under non-aerospace industrial classifications. The industry manufactures and reworks complete aerospace vehicles and aerospace parts. Examples of aerospace vehicles are airplanes, helicopters, missiles, rockets, satellites, and spacecraft. Aerospace facilities may employ all or some of the following operations: fabricating, processing, assembling, repairing, and coating. Application of coatings and cleaning with solvents are the significant sources of VOM emissions from aerospace facilities.

Illinois EPA researched and analyzed its emissions database and the classification of sources in the Metro-East area and determined that there were three sources that would potentially be affected by the proposed regulations. The aerospace CTG has been relied upon to determine potentially affected aerospace facilities in Illinois. The applicability threshold for aerospace facilities in the proposed regulation is a facility's potential to emit ("PTE") being greater than 25 tons per of VOM per year. These three sources are Gulfstream Aerospace Services Corp. in Cahokia, Premiere Air Center Inc. in East Alton, and Boeing in Mascoutah. The Agency's determination of likely applicability for these three sources results from the Agency's efforts to follow the aerospace CTG screening suggestions and not from any final determination of whether an emission source would be affected by the proposed regulations. Drafts of the proposed regulations have been shared with all of these potentially affected sources during the Agency's outreach process, and none have opposed its adoption.

4.0 Unit Description and Emissions

This Section describes emission units at the potentially affected aerospace facilities.

The aerospace CTG describes in detail the following operations with significant potential to emit VOM:

- Coating Application
- Sealing
- Adhesive Bonding
- Cleaning
  - Hand-Wipe and Flush Cleaning
  - Spray Gun and Coating Line Cleaning

4.1 Coatings and Application

Coating application is a process of painting a surface area. Several common application methods are brush coating, dip coating, flow coating, roll coating, electrodeposition, electrostatic spray, high-volume low-pressure ("HVLP") spray, and low-volume low-pressure spray.

The aerospace CTG states on page 2-6:

> "*A coating is a material that is applied to the surface of a part to form a decorative, protective, or functional solid film. The most common coatings are the broad categories of nonspecialized primers and topcoats … There are also numerous specialty coatings covered by this guidance that provide additional performance characteristics, such as temperature, fluid, fire resistance, flexibility, substrate compatibility, antireflection, temporary protection or marking, sealing, adhesively joining substrates, enhanced corrosion protection, or compatibility with a space environment*." [1]

Several types of coating processes include specialty coatings, but primers and topcoats are the two main types of coatings used.

Coating Application Emissions: Coatings are a mixture of solids and liquids. The function of the liquids, some of which contains VOM, is to dissolve the solids and control the viscosity of the coating for easy delivery to the target surface area. At the end of coating process, the liquids evaporate and leave the solids in the target surface area, thus the entire VOM content of the coating is emitted in the absence of add-on pollution control equipment. The VOM content limits proposed in this rulemaking have been taken directly from the aerospace CTG, and a more detailed description of those coatings can be found there.

4.2 Sealing

Sealing is a process of applying sealant material, primarily to seal out moisture and contaminants to prevent corrosion, usually before the start of coating applications, to a target area. Sealants are specialty coatings but have low VOM content relative to most of the other specialty coatings listed in the CTG.

4.3 Adhesive Bonding

Adhesive bonding is the process of gluing two surfaces together. The surfaces are thinly coated with an adhesive before the parts are joined together and cured. Adhesives are also specialty coatings, and the aerospace CTG listed several types of adhesives that includes adhesion promoter and bonding primers.

4.4 Cleaning

Cleaning operations in the aerospace industry occur during or before the coating process, and when switching between two different coating processes. Most cleaning agents used are solvents containing VOM.

4.4.1 Hand-Wipe and Flush Cleaning

Hand-wipe cleaning is generally cleaning of parts and assemblies by hand in a vat of cleaning solution using a wide variety of cleaning solvents. Flush cleaning is used when assemblies and parts have concealed or inaccessible areas. The parts are cleaned by passing the cleaning agent over, into, or through the part and then draining the agent. The procedure can be repeated as many times as necessary.

4.4.2 Spray Gun and Coating Line Cleaning

Spray guns used to apply coatings used at aerospace facilities and coating lines themselves must be cleaned when switching coatings and when they will not be immediately reused. Spray guns can be cleaned either manually or with enclosed spray gun cleaners.

Manual cleaning involves disassembling, cleaning, and then reassembling the coating equipment. Enclosed spray gun cleaning is an automated process that pumps the cleaning agent through the spray gun and any other coating pipes in the enclosed space.

5.0 VOM Control Options and Cost Effectiveness

Controlling VOM emissions from aerospace facilities can be achieved by using lower-VOM coatings and cleaning solvents, or by using add-on emission control systems. The following is a discussion of the cost effectiveness of the options available to facilities.

5.1 Compliant Coatings and Work Practices

The aerospace CTG states that the most common cost-effective control option available for aerospace facilities is the use of coatings that are compliant with CTG limits and the proposed regulations, and by implementing the CTG work practices also in the proposed regulations.

5.1.1 Aerospace CTG Compliant Coatings

Coating application processes at aerospace facilities can be divided into three categories: primers, topcoats, and specialty coatings. Primers and topcoats constitute the majority of coatings used at aerospace facilities. Compliant coatings are generally waterborne coatings, consisting of close to 80 percent water and 20 percent solids, or coatings consisting of a high solids content relative to the VOM content that contain 60 percent solids or more. To a lesser extent, powder coating can be used, but since those usually require baking to cure, they are more commonly used for smaller aerospace parts.

For specialty coatings, the aerospace CTG states on page 3-1, "Specialty coatings typically have relatively low usage, so reformulation to lower VOC contents does not produce significant air quality benefits nor is it economically feasible for the paint suppliers. …Therefore, lower VOC formulations are not available for most of the low volume specialty coating categories." The CTG does include limits for these specialty coatings that have been determined to be reasonable, and those have been included in the proposed amendments.

5.1.2 Technical Feasibility and Economic Reasonableness of Compliant Coatings

Compliant coatings for aerospace primers, topcoats, and specialty coatings have been widely available since the 1998 implementation of the aerospace CTG, thus the CTG limits proposed in this rulemaking are technically feasible.

The proposed regulations are also economically reasonable. The aerospace industry has been using CTG-compliant coatings since 1998. Based on Agency analysis, there are no non-compliant coatings on the market in common use. Therefore, it is unlikely that there will be additional costs to affected sources associated with the proposed coating limits.

5.1.2.1 Coating Delivery Equipment

The purpose of regulating coating delivery equipment is to improve transfer efficiency, thus emitting less VOM in the application of coatings.

The aerospace CTG lists three equipment changes that have been implemented by aerospace industry to reduce VOM emissions: (1) HVLP Spray Guns, (2) Electrostatic Spray Guns, and (3) Conventional High Transfer Efficiency Application Methods.

HVLP spray guns use a high volume of coating at low pressure to coat a surface area. The lower air pressure improves transfer efficiency by using lower particle speeds and a more controlled spray pattern with less overspray and bounce back from the substrate. The use of HVLP coating application can reduce VOM emissions by 10 – 40 percent.

Electrostatic spray guns use an electric charge to more efficiently deposit the coating on the target area. In electrostatic spray systems, atomized particles of coating acquire an electric

charge at the end of the spray nozzle, which causes the particles to be attracted to the grounded parts that are being coated. Electrostatic spray guns are most commonly used for coating metal parts and can reduce VOM emissions by 30 – 40 percent. Using both HVLP and electrostatic application together can reduce VOM emissions by 35 – 50 percent.

Additional conventional high transfer efficiency application methods recommended by the aerospace CTG include dip coating, roll coating, brush coating, and flow coating. Dip and roll coating have high transfer efficiency effective in reducing VOM emissions.

5.1.2.2 Coating Delivery Equipment Cost

It is unlikely that any source potentially affected by the proposed regulation would need to change or replace their coating delivery equipment to comply with the proposed regulations. The coating methods have been in use for several decades, and Illinois EPA's research indicates that these equipment types are currently in use at the potentially affected sources and will be in use at the source planning an expansion.

Further, a memorandum from Eastern Research Group, Inc., in comments regarding the Aerospace NESHAP review in 2015, states: "Because high-efficiency application equipment generates less coating overspray than conventional equipment, the costs of upgrading to new equipment can be offset by cost savings from reduced coating consumption and reduced spray booth filter maintenance. For these reasons, many facilities are likely to have already switched to high-efficiency application methods."[2]

Thus, the required use of high-efficiency coating equipment in the aerospace CTG and the proposed regulations is technically feasible and economically reasonable, and such equipment is likely already in use at all potentially affected sources in Illinois.

5.1.3 Cleaning Materials and Work Practices

The aerospace CTG recommends cleaning materials and work practices to limit VOM emissions. The list of feasible substitutions from high-VOM cleaning materials are aqueous, semi-aqueous, citrus-based, and low vapor pressure cleaning materials.

The aerospace CTG does not provide cost estimates for cleaning product substitutions and methods, but such substitutes have been in use for many years and are easily available as the most commonly used cleaning products in the aerospace industry.

5.2 Add-on Pollution Control Equipment

Pollution control equipment available for VOM emissions at aerospace facilities includes carbon adsorption systems and incinerators or oxidizers. The aerospace CTG Model Rule includes the option of complying with the proposed limits by using approved air pollution control equipment. This option has been included in the proposed amendments, however the Agency set the overall capture and control efficiency requirement for control systems at 90% rather than the 81% suggested in the CTG. The Agency opted for this level of control as it is more in line with the

requirements of recent VOM rules Illinois has adopted, and with the control efficiencies of modern pollution control equipment.

Add-on control systems may not be cost effective for smaller sources of emissions because a large volume of air with small concentration of VOM must be captured and routed to the control, but larger sources may find this option more cost-effective.

The technical feasibility and economic reasonableness of add-on pollution control equipment can be left to affected sources to consider, as it is alternative to feasible and reasonable VOM coating limits in the proposed amendments.

6.0 Existing and Proposed Regulations

The proposed amendments will apply to aerospace facilities, defined as any commercial or military aircraft original manufacturers, as well as any sources that produce, rework, or repair aerospace vehicles or components, and are involved in coating processes, coating application, or solvent use for cleaning in those activities.

Illinois currently has no rules specifically applicable to aerospace coating processes. Illinois EPA analysis indicates that two of the potentially affected sources discussed in this document are currently subject to rules for miscellaneous metal parts and products coatings, plastic parts and products coatings, and pleasure craft coatings, all found in 35 IAC Part 219. These coating rules have an applicability threshold of 15 pounds of VOM per day. While these sources are currently subject to the aforementioned coating rules, coatings applied to the exterior of airplanes are exempt from the miscellaneous metal parts and products limits. Upon adoption of the proposed rule, these exterior coatings will be subject to the primer and topcoat limits in the proposed 219.204(r)(1).

The aerospace NESHAP applies to aerospace manufacturing and rework facility hazardous air pollutant ("HAP") and VOM emissions if the source has a PTE greater than 25 TPY of all HAPs or greater than 10 TPY of any individual HAP. Illinois EPA analysis indicates that there are no sources in the state that meet this applicability threshold.

7.0 Proposed Regulations

In drafting the proposed regulations, the Illinois EPA reviewed the USEPA aerospace CTG, the aerospace NESHAP, and other states' regulations. The proposed regulations are intended to reflect the CTG-recommended RACT-level control of VOM for aerospace facilities and apply to aerospace coatings and cleaning activities at aerospace facilities in the Metro-East area that have the potential to emit 25 tons of VOM or more per year. The Agency has determined that affected facilities can achieve the proposed aerospace coating limitations and work practices with minimal or no additional cost.

7.1 Coating VOM Limits

The aerospace industry VOM emitting process types are grouped into five categories: primers, topcoats, maskants, specialty coatings, and cleaning solvent use. Table 5 lists the proposed VOM content limits for primers, topcoats, and maskants, and Table 6 lists proposed VOM content limits for specialty coatings. Sources which use noncomplying coatings can instead comply with the proposed rule by using an add-on control system and achieving an overall control efficiency of 90% or greater.

Table 1 Illinois EPA Proposed Primer, Topcoat, and Maskant VOM Content Limits

Category	Coating Type	VOM Limits	
		kg/L	lb/gal
Primers	Aerospace primer	0.350	2.9
	Primer for general aviation rework facility	0.540	4.5
	Exterior primer for large commercial aircraft (components or fully assembled)	0.650	5.4
Topcoats	Topcoat and Self-priming topcoat for aerospace applications	0.420	3.5
	Topcoat for general aviation rework facility and Self-priming topcoat for general aviation rework facility	0.540	4.5
Maskants	Chemical milling maskants, type I	0.622	5.2
	Chemical milling maskants, type II	0.160	1.3

Table 2 Illinois EPA Proposed Specialty Coating VOM limits

Specialty Coating Type		VOM Limits	
		kg/L	lb/gal
1	Ablative Coating	0.600	5.0
2	Adhesion Promoter for aerospace applications	0.890	7.4
3	Adhesive Bonding Primers: Cured at 250 °F or below	0.850	7.1
4	Adhesive Bonding Primers: Cured above 250 °F	1.030	8.6
5	Aerospace flexible primer	0.640	5.3
6	Antichafe coating	0.660	5.5
7	Bearing coating	0.620	5.2
8	Bonding maskant	1.230	10.3
9	Caulking and smoothing compounds	0.850	7.1
10	Chemical agent-resistant coating	0.550	4.6
11	Clear coating for aerospace applications	0.720	6.0
12	Commercial exterior aerodynamic structure primer	0.650	5.4
13	Commercial interior adhesive	0.760	6.3
14	Compatible substrate primer	0.780	6.5
15	Corrosion prevention system	0.710	5.9
16	Critical use and line sealer maskant	1.020	8.5

Specialty Coating Type		VOM Limits	
		kg/L	lb/gal
17	Cryogenic flexible primer	0.645	5.4
18	Cryoprotective coating	0.600	5.0
19	Cyanoacrylate adhesive	1.020	8.5
20	Dry lubricative material	0.880	7.3
21	Electrostatic discharge and electromagnetic interference coating	0.800	6.7
22	Elevated-temperature skydrol-resistant commercial primer	0.740	6.2
23	Epoxy polyamide topcoat	0.660	5.5
24	Extrudable, rollable, brushable sealant	0.280	2.3
25	Fire-resistant (interior) coating	0.800	6.7
26	Flight-test coatings: missile or single use aircraft	0.420	3.5
27	Flight-test coatings: all other	0.840	7.0
28	Fuel tank adhesive for aerospace applications	0.620	5.2
29	Fuel-tank coating for aerospace applications	0.720	6.0
30	High temperature coating	0.850	7.1
31	Insulation covering	0.740	6.2
32	Intermediate release coating	0.750	6.3
33	Lacquer	0.830	6.9
34	Metallized epoxy coating	0.740	6.2
35	Mold release coating for aerospace applications	0.780	6.5
36	Nonstructural adhesive for aerospace applications	0.360	3.0
37	Optical anti-reflective coating	0.750	6.3
38	Part marking aerospace coating	0.850	7.1
39	Pretreatment coating	0.780	6.5
40	Radiation-effect or electric coating	0.800	6.7
41	Rain erosion-resistant coating	0.850	7.1
42	Rocket motor bonding adhesive	0.890	7.4
43	Rocket motor nozzle coating	0.660	5.5
44	Rubber-based adhesive	0.850	7.1
45	Scale inhibitor	0.880	7.3
46	Screen print ink for aerospace applications	0.840	7.0
47	Seal coat maskant	1.230	10.3
48	Sprayable sealant for aerospace applications	0.600	5.0
49	Silicone insulation material	0.850	7.1
50	Solid film lubricant	0.880	7.3
51	Specialized function coating	0.890	7.4
52	Structural autoclavable adhesive for aerospace applications	0.060	0.5
53	Structural nonautoclavable adhesive for aerospace applications	0.850	7.1
54	Temporary protective coating for aerospace applications	0.320	2.7
55	Thermal control coating for aerospace applications	0.800	6.7

Specialty Coating Type		VOM Limits	
		kg/L	lb/gal
56	Wet fastener installation coating	0.675	5.6
57	Wing Coating	0.850	7.1

7.2 Coating Applications

Illinois EPA is proposing the aerospace CTG RACT-level control recommendation for coating application processes for primers, topcoats, maskants, and specialty coatings, requiring these coatings to be applied using one or more of the coating techniques: flow/curtain coating; dip coating; roll coating; brush coating; cotton-tipped swab application; HVLP spraying; electrostatic spray; airless spray; air-assisted airless spray; or any other coating spray application methods that achieve a transfer efficiency equivalent to HVLP or electrostatic spray application techniques.

7.3 Solvent Cleaning Operations

Illinois EPA is proposing the CTG-recommended requirements to conduct hand-wipe cleaning with an aqueous cleaning solvent or a cleaning solvent with a vapor pressure less than or equal to 45 mmHg at 20° C (0.87 psia at 68º F). Other solvent cleaning operations at aerospace facilities are subject to work practices and housekeeping measures.

7.4 Rule Applicability

The proposed rule will apply to aerospace facilities that include the manufacture or rework of commercial, civil, or military aerospace vehicles or components at sources located in the Metro-East area that have a potential to emit 25 tons per year or more of VOM. The proposed regulation does not apply to research and development, laboratory testing, or quality control. The proposed regulations also exempt touchup coatings up to a certain level, aerosol coatings, United States Department of Defense classified coatings, coating of space vehicles, and coating of antique aerospace vehicles or components. Finally, the proposed regulations exempt the use of separate formulations of specialty coatings in volumes of less than 50 gallons per year of a single formulation with maximum exemption of 200 gallons per year for all total formulations.

7.5 Emissions Reduction

According to the aerospace CTG, the proposed rulemaking would result in VOM reductions of approximately 81% from uncontrolled VOM emissions and reduce VOM emissions from coating application and cleaning processes by 30% to 40% by implementing the proposed rule's work practice standards. However, the proposed regulations will not be applicable to any currently uncontrolled aerospace facility. As discussed in Section 6.0 above, two of the potentially affected sources are currently subject to other coating limits and work practices standards in 35 Ill. Adm. Code Part 219. The third is the source that plans to expand its operations and thus is not yet subject. Thus, Illinois does not anticipate significant emission reductions due to the adoption of the proposed rule.

8.0 Demonstration of noninterference under Section 110(l) of the CAA

Section 110(l) of the CAA states:

> *"Each revision to an implementation plan submitted by a State under this Act shall be adopted by such State after reasonable notice and public hearing. The Administrator shall not approve a revision of a plan if the revision would interfere with any applicable requirement concerning attainment and reasonable further progress (as defined in CAA Section 171), or any other applicable requirement of this Act."*

Sources in the aerospace industry in the Metro-East area have had to meet the requirements of other coating rules in Title 35 IAC Part 219 in the absence of an aerospace coating rule. The VOM content limits of these rules differ for particular coating types from the limits in the proposed regulations. However, aircraft exterior coatings account for the great majority of volume used and VOM emissions from the potentially affected sources, and those coatings are currently exempt from the current regulations, as discussed in Section 6.0, above. Applying the proposed limits will reduce the potential to emit at the potentially affected sources in Illinois.

Specifically, the Agency evaluated the two potentially affected sources currently subject to coating rules in Illinois. In one case, over 91.9 percent of the coatings applied at the source by volume (6,080 of 6,618 gallons) were exempt from the miscellaneous metal parts coating limits because they were being applied to aircraft exteriors. This accounted for 95.9 percent of the VOM emissions from coatings applied at the facility (25.05 of 26.12 TPY). The allowable VOM content for these coatings used to estimate that source's potential to emit is 8.24 lb/gal. Under the proposed rules, these coatings will be subject to the primer and topcoat limits in the proposed Section 219.204(r)(1), which range from 2.9 to 5.4 lb/gal. This will reduce the source's PTE for VOM significantly. While the permit for the other potentially affected source is not as specific in its calculations for PTE for VOM, Agency analysis confirms that, similar to the first source analyzed, greater than 90% of the coatings applied at the source are applied to aircraft exteriors, and those coatings account for greater than 90% of emissions at the source. Thus, the adoption of the proposed limits for those coatings will result in reducing the PTE for VOM significantly at the source.

The adoption of the proposed regulations will result in reducing the VOM PTE at potentially affected sources in Illinois, and will not result in an increase in emissions of any other pollutant.

Additionally, as noted above, CAA section 183(b) and USEPA recognize the unique coating requirements the aerospace industry must meet. USEPA stated in the CTG on page 2-7:

> "*The quality of the coatings is critical to the airworthiness and safety of the final product. Aerospace vehicle manufacturing is strictly controlled by the Federal Aviation Administration, the Department of Defense, and specific customer requirements. Industry specifications for coatings are dictated by these requirements.*"

Consequently, USEPA issued the aerospace CTG, which is specifically applicable to aerospace coating processes.

The Illinois EPA does not anticipate that the adoption of these aerospace CTG measures will result in additional emissions of any pollutant at existing sources in Illinois. The proposed rule will not interfere with any applicable requirement concerning attainment and reasonable further progress, or any other applicable requirement of the CAA. If adopted, the proposed rules will be submitted as a revision of the Illinois SIP for approval by the USEPA.

Documents Relied Upon

1. USEPA, "Control of Volatile Organic Compound Emissions from Coating Operations at Aerospace Manufacturing and Rework Operations", December 1997. https://www3.epa.gov/airquality/ctg_act/199712_voc_epa453_r-97-004_aerospace_rework.pdf

2. Eastern Research Group, Inc., "Estimated Cost Impacts for Proposed Amendments to 40 CFR 63, Subpart GG", January 12, 2015. EPA-HQ-OAR-2014-0830-0005

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Guideline Series

Control of Volatile Organic Compound Emissions from Coating Operations at Aerospace Manufacturing and Rework Operations

CTG

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Control of Volatile Organic Compound Emissions from Coating Operations at Aerospace Manufacturing and Rework Operations

Emission Standards Division

U. S. Environmental Protection Agency
Office of Air and Radiation
Office of Air Quality Planning and Standards
Research Triangle Park, NC 27711

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1.0 INTRODUCTION

The Clean Air Act (CAA) as amended in 1990 requires that State implementation plans (SIP's) for certain ozone nonattainment areas be revised to require the implementation of reasonably available control technology (RACT) to control volatile organic compound (VOC) emissions. The U. S. Environmental Protection Agency (EPA) has defined RACT as the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. The EPA has issued, and is continuing to issue, control techniques guideline documents (CTG's) that present feasible RACT control measures for VOC source categories. The CTG's recommend "presumptive norms" of control for each source category, but individual sources may have alternative RACT requirements imposed by making an adequate infeasibility demonstration (44 FR 53761, September 17, 1979).

Section 183(b)(3) of the CAA requires the EPA Administrator to issue a CTG for the control of VOC emissions from coatings and solvents used in the aerospace industry. This CTG is intended to supersede any potential applicability of the Miscellaneous Metal Part and Products CTG (RACT) requirements for manufacturing and rework operations of aerospace vehicles and components. According to the CAA, this CTG guidance should also reflect control resulting from applying the "best available control (BAC) measures." Section 183(e)(1)(A) defines "BAC" as the "most effective equipment, measures, processes, methods, systems or techniques, including chemical reformulation, product or feedstock substitution, repackaging, and directions for use,

consumption, storage, or disposal." Therefore, this CTG departs from the approach followed in the other CTG's by not recommending a single approach for determining RACT, but investigating a range of approaches to reduce VOC emissions from aerospace operations. Several optional approaches comprise the presumptive RACT found in this CTG.

The CTG's are intended to provide State and local air pollution control authorities with an information base for proceeding with their analyses of RACT for their own regulations. The CTG's contain a review of current knowledge and data concerning the technology, impacts, and costs associated with various emission control techniques. Where applicable, the EPA recommends that States adopt requirements consistent with the presumptive RACT. However, these measures are only a recommendation; States may develop their own RACT requirements on a case-by-case basis, considering the economic and technical circumstances of individual sources. It should be noted that no Federal laws or regulations preclude States from requiring more stringent controls than those recommended as RACT. A particular State, for example, may broaden the applicability by revising the "aerospace vehicle or component" definition to include models, mock-ups, prototypes, and production equipment such as molds, jigs, and tooling. Some States may need additional control in order to meet the national ambient air quality standards (NAAQS) for ozone in some areas.

This CTG identifies presumptive RACT for controlling VOC emissions from aerospace coatings and cleaning solvents. National emission standards for hazardous air pollutants (NESHAP) for aerospace manufacturing and rework operations were published on September 1, 1995 (60 FR 45948). While these final standards address the reduction of HAP emissions, the control techniques required by the NESHAP will result in reductions of VOC emissions as well. In addition, the control techniques required by the NESHAP are similar to those addressed in this CTG for reducing VOC emissions. Because the emission reductions, costs, and environmental impacts have already been determined for major HAP

sources and are attributed to the NESHAP (see Docket No. A-90-20, Subcategory II-B), these impacts are not summarized in this CTG.

While the Aerospace NESHAP sets limits for maximum HAP and VOC content for topcoats, primers, maskants, clean-up solvents, and cleaning operations, the CTG establishes presumptive RACT limits for VOC's. The CTG includes requirements for Specialty Coatings, which are not covered by the Aerospace NESHAP. The Clean Air Act specifies that solvents will be addressed in the Aerospace CTG. However, because the CTG is guidance to be adopted as individual State regulations and SIP's, it does not specify detailed requirements for monitoring, testing, recordkeeping, and reporting as the NESHAP has done. Rather, the States are directed under previous EPA guidance for establishing RACT (57 FR 13502, April 16, 1992) to develop "enforceable regulations" containing such requirements. While EPA is providing an example of such a regulation in the model rule (Appendix B), this CTG allows States the flexibility to address those requirements as long as they meet EPA enforceability criteria.

2.0 AEROSPACE MANUFACTURING AND REWORK OPERATIONS

2.1 GENERAL

The aerospace industry being evaluated includes all manufacturing facilities that produce an aerospace vehicle or component and all facilities that rework or repair these aerospace products. Aerospace vehicle or component is defined as, but not limited to, any fabricated part, processed part, assembly of parts, or completed unit of any aircraft including, but not limited to, airplanes, helicopters, missiles, rockets, and space vehicles. In addition to manufacturing and rework facilities, some shops may specialize in providing a service, such as chemical milling, rather than actually producing a component or assembly. In general, aerospace manufacturing and rework facilities are covered by the SIC codes listed in Table 2-1. However, facilities classified under other SIC codes may be subject to the proposed rule if the facility meets the definition of a major source and the definition of an aerospace manufacturing or rework facility.

TABLE 2-1. AEROSPACE MANUFACTURING SIC CODES

SIC Code	Description
3720	Aircraft and Parts
3721	Aircraft
3724	Aircraft Engines and Engine Parts
3728	Aircraft Parts and Equipment
3760	Guided Missiles, Space Vehicles, and Parts
3761	Guided Missiles and Space Vehicles
3764	Space Propulsion Units and Parts
3769	Space Vehicle Equipment
4512	Air Transportation, Scheduled
4581	Airports, Flying Fields, and Services
9711	National Security

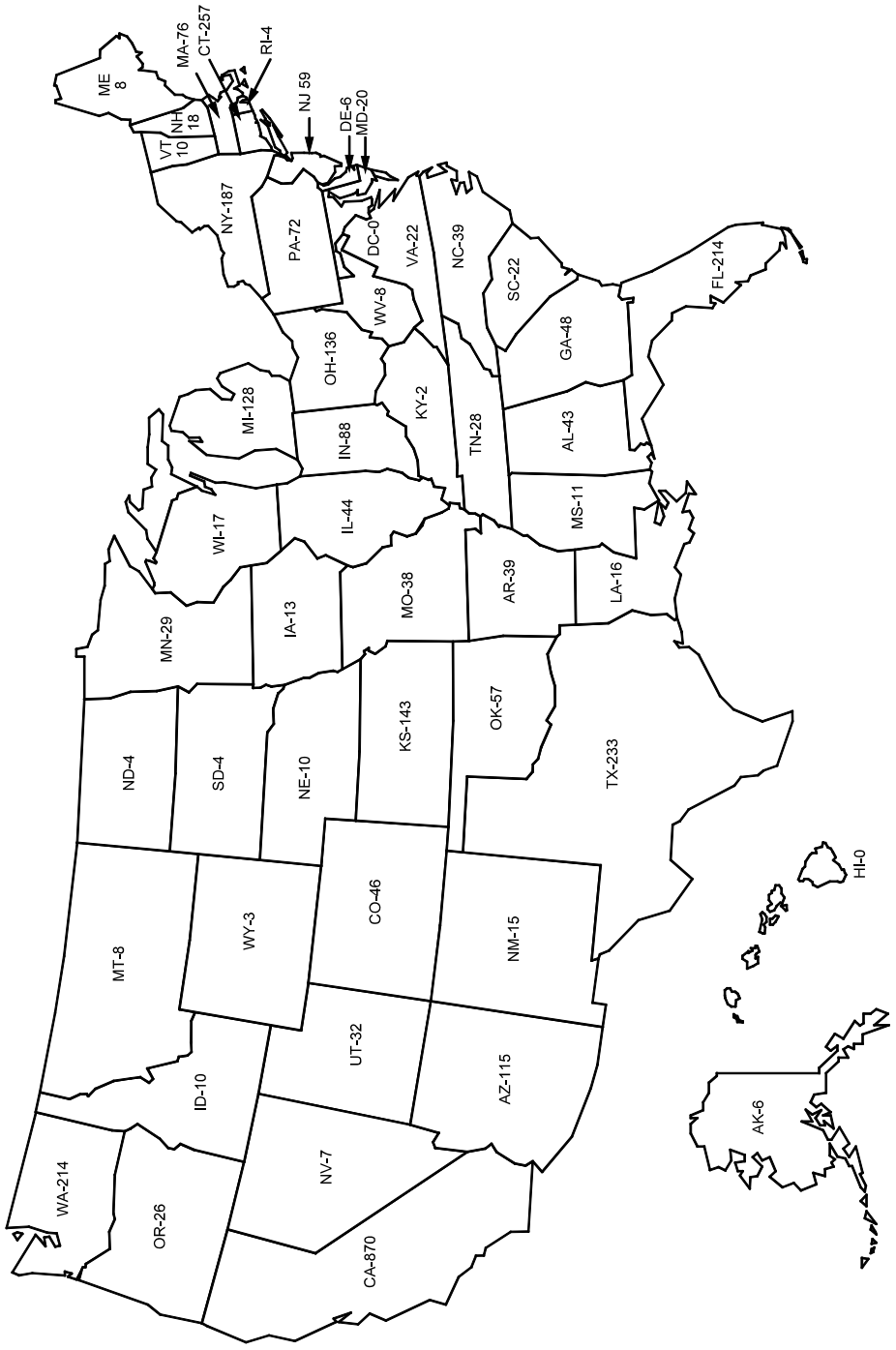
Aerospace facilities may be divided into four market segments: commercial original equipment manufacturers (OEM), commercial rework facilities, military OEM's, and military rework facilities. The commercial OEM segment of the market includes the manufacture of commercial aircraft as well as the production of business and private aircraft. The military OEM segment of the market includes military installations and defense contractors that manufacture aircraft, missiles, rockets, satellites, and spacecraft. Rework facilities, both commercial and military, may rework many of the above end products.

Based on information obtained through the Federal Aviation Administration and the U.S. Department of Commerce - Bureau of the Census, there are an estimated 2,869 aerospace facilities that could be subject to this guidance. Of this number, 1,395 produce or rework commercial products, and 1,474 produce or rework military products. The combined VOC emissions from these facilities are estimated to be over 213,000 megagrams/year (Mg/yr) (234,000 tons/yr).

In addition to these facilities, there are numerous subcontractors that manufacture or rework aerospace vehicles or

components. The subcontractors may work directly for the OEM or rework facilities, or indirectly through first line subcontractors. Because most of these subcontractors perform various types of work, they are often classified under non-aerospace SIC codes. Consequently, an estimate of the number of subcontractors cannot be made. One company alone, however, employs the services of over 5,000 subcontractors.

Aerospace manufacturing facilities and rework operations typically are located in or near industrial centers in areas of medium to high population density. Some States with a large number of aerospace manufacturers are California, Texas, Connecticut, Florida, and Washington. Figure 2-1 presents the number of aerospace manufacturing facilities by State.


ME 8
MA-76
CT-257
RI-4
NJ 59
DE-6
MD-20
VT 10
NH 18
NY-187
PA-72
DC-0
VA-22
NC-39
SC-22
FL-214
WV-8
OH-136
GA-48
MI-128
KY-2
TN-28
AL-43
IN-88
WI-17
IL-44
MS-11
MO-38
AR-39
LA-16
MN-29
IA-13
ND-4
SD-4
NE-10
KS-143
OK-57
TX-233
MT-8
WY-3
CO-46
NM-15
HI-0
ID-10
UT-32
AZ-115
AK-6
WA-214
OR-26
NV-7
CA-870

Aerospace manufacturing facilities range in size from small shops that produce a single aerospace component, such as propellers, to large corporations that produce the entire aircraft. Aerospace rework facilities, however, are usually large facilities that must be able to rework or repair every facet of several models of large commercial or military aircraft.

The hours of operation at aerospace manufacturing and rework facilities may vary greatly due to the production backlog at each facility. The hours of operation may range from 8 hours (or less) per day, 5 days per week, to 24 hours per day, 7 days per week.

2.2 PROCESS DESCRIPTION

Aerospace manufacturing and rework operations typically consist of the following basic operations: materials receiving, machining and mechanical processing, coating application, chemical milling, heat treating, cleaning, metal processing and finishing, coating removal (depainting), composite processing, and testing. Many aerospace manufacturing and rework facilities may employ all of these processes in their operations, as with an OEM facility that produces the entire aerospace vehicle. However, an aerospace facility may only employ a subset of these operations, as with a facility that produces a single component or assembly or a facility that provides a service such as chemical milling. Of these operations, coating application and cleaning are the significant sources of VOC emissions and are the processes covered by this Aerospace CTG in the following sections.

2.2.1 Coating Application

A coating is a material that is applied to the surface of a part to form a decorative, protective, or functional solid film. The most common coatings are the broad categories of nonspecialized primers and topcoats that are regulated for major sources under the Aerospace NESHAP. There are also numerous specialty coatings covered by this guidance that provide

additional performance characteristics, such as temperature, fluid, fire resistance, flexibility, substrate compatibility, antireflection, temporary protection or marking, sealing, adhesively joining substrates, enhanced corrosion protection, or compatibility with a space environment. Each material is different because it must meet individual performance standards particular to a specific design. The quality of the coatings is critical to the airworthiness and safety of the final product. Aerospace vehicle manufacturing is strictly controlled by the Federal Aviation Administration, the Department of Defense, and specific customer requirements. Industry specifications for coatings are dictated by these requirements.

Most aerospace coatings are solvent-borne, which contain a mixture of organic solvents, many of which are VOC's. The most common VOC solvents used in coatings are toluene, xylene, methyl ethyl ketone, and methyl isobutyl ketone. The VOC content ranges differ for the various coating categories.

2.2.1.1 Sealing. Sealants, predominately composed of polysulfide, are applied throughout the aerospace vehicle structure primarily to seal out moisture and contaminants to prevent corrosion, such as on faying (i.e., closely or tightly fitting) surfaces, inside holes and slots, and around installed fasteners. They are also used to seal fuel tanks and pressurized components. Sealants are applied using tubes, spatulas, brushes, rollers, or spray guns. Sealants are often stored frozen and thawed before use, and many are two-component mixtures that cure after mixing. Typically, a sealant is applied before assembly or fastener installation, and the excess is squeezed out or extruded from between the parts as the assembly is completed. This ensures a moisture-tight seal between the parts.

2.2.1.2 Adhesive Bonding. Adhesive bonding involves joining together two or more metal or nonmetal components. This process is typically performed when the joints being formed are essential to the structural integrity of the aerospace vehicle or component. Bonding surfaces are typically roughened mechanically or etched chemically to provide increased surface area for

Figure 2-1. Active U.S. aerospace manufacturing facilities.

bonding and then treated chemically to provide a stable corrosion-resistant oxide layer. The surfaces are then thinly coated with an adhesive bonding primer to promote adhesion and protect from subsequent corrosion. Structural adhesives are applied as either a thin film or as a paste. The parts are joined together and cured either at ambient temperature, in an oven, or in an autoclave to cure the adhesive and provide a permanent bond between the components.

Nonstructural adhesives are used to bond materials that are not critical to the structural integrity of the aerospace vehicle or component, such as gaskets around windows and carpeting or to nonstructurally joined components. These adhesives are applied using tubes, brushes, and spray guns.

2.2.2 Cleaning

Cleaning agents for hand-wipe, flush, and spray equipment cleaning consist of solvents such as methyl ethyl ketone, methyl isobutyl ketone, toluene, various solvent blends, or alkaline materials.

2.2.2.1 Hand-Wipe and Flush Cleaning. Aerospace components are cleaned frequently during manufacturing to remove contaminants such as dirt, grease, and oil, and to prepare the components for the next operation. Cleaning is typically performed by a hand wiping process using a wide variety of cleaning solvents. Assemblies and parts with concealed or inaccessible areas may be flush-cleaned by passing the cleaning agent over, into, or through the part. The cleaning agent is then drained from the part and the procedure is repeated as many times as necessary to ensure the required cleanliness.

2.2.2.2 Spray Gun and Coating Line Cleaning. Spray guns and coating lines used to apply the various coatings used at aerospace facilities must be cleaned when switching from one coating to another and when they are not going to be immediately reused. Spray guns can be cleaned either manually or with enclosed spray gun cleaners. Manual cleaning involves disassembling the gun and placing the parts in a vat containing an appropriate cleaning solvent. The residual paint is brushed

or wiped off the parts. After reassembling, the cleaning solvent may be sprayed through the gun for a final cleaning. Paint hoses/coating lines are cleaned by passing the cleaning solvent through the lines until all coating residue is removed. Enclosed spray gun cleaners are self-contained units that pump the cleaning solvent through the gun within a closed chamber. After the cleaning cycle is complete, the guns are removed from the chamber and typically undergo some manual cleaning to remove coating residue from areas not exposed to the cleaning solvent, such as the seals under the atomizing cap.

3.0 EMISSION CONTROL TECHNIQUES

The principal technique used by the aerospace industry to control VOC emissions from coating application and cleaning is product substitution, which eliminates or reduces the generation of emissions. The emission reduction is obtained using less energy and producing less waste than using a control device to achieve the same emission reductions.

The VOC emissions may be controlled by replacing products containing high concentrations of VOC's with ones that have reduced or eliminated VOC's. Different aerospace manufacturers use different processes to produce their product. Therefore, they typically have different specifications for the coatings and cleaning solvents used on the components of the end products. Each individual facility must evaluate the ability of the new product to maintain standards of quality and performance. In addition, the potential overall environmental benefit of the reformulated products must be carefully evaluated.

The following sections describe the available product substitutions for coatings and cleaning solvents. While alternative methods, such as control devices (carbon adsorbers, incinerators, etc.), are occasionally used to reduce emissions, they do not represent RACT and are, therefore, not discussed below.

3.1 COATING SUBSTITUTIONS

Waterborne and high solids materials are generally used for coating substitutions. Specialty coatings typically have relatively low usage, so reformulation to lower VOC contents does not produce significant air quality benefits nor is it economically feasible for the paint suppliers. Paint suppliers

and the aerospace industry generally have targeted high volume materials for reformulation efforts. Therefore, lower VOC formulations are not available for most of the low volume specialty coating categories.

3.2 EQUIPMENT CHANGES

The aerospace industry has implemented several equipment changes that directly reduce the level of VOC emissions. While there are equipment changes that effect emissions from every process, the three changes predominantly used in the industry are high transfer efficiency spray guns, spray gun cleaners, and conventional high transfer efficiency methods. Each of these equipment changes are discussed below.

3.2.1 High Transfer Efficiency Spray Guns

Emissions from spray coating operations can be reduced through the use of spraying systems with higher transfer efficiency. Transfer efficiency, expressed as a percentage, can be defined as the ratio of coating solids actually applied to the surface of the component being coated to the amount of solids released from the spray gun. Spraying systems with a higher transfer efficiency can coat the same surface area using less coating. Therefore, the VOC emissions resulting from the use of this equipment are reduced compared to applying the same coating with conventional spray equipment. The transfer efficiency values reported in this section depend on coating sprayed, part configuration, spray booth air velocity, and other variables.

Most aerospace components are coated using manual spray equipment utilizing conventional airspray or airless spraying technology. The following sections discuss two types of high transfer coating application equipment generally used in the aerospace industry for the application of primers and topcoats: high volume, low pressure (HVLP) and electrostatic (use of these types of high transfer efficiency for specialty coatings is limited).

3.2.1.1 High Volume Low Pressure Spray Guns. High volume low pressure and electrostatic spraying systems are the primary high efficiency spray methods used by the industry. High volume

low pressure spray guns use high volumes [10 to 25 standard cubic feet per minute (scfm)] of low pressure [2 to 10 pounds per square inch gauge (psig)] air to deliver the paint. The lower air pressure creates a lower particle speed, resulting in a more controlled spray pattern with less overspray and bounce back from the substrate, thus improving transfer efficiency.

High volume low pressure systems have been in use in the United States for approximately 10 years. In early systems, turbines were used to supply a high volume of low pressure air to the spray guns through large hoses. The second generation used compressed air with an air regulator to maintain the required low pressure. The third and current generation of HVLP equipment uses restrictors within the gun to reduce the atomization pressure to a maximum of 10 psi at the air cap.

One disadvantage of HVLP spray guns is that some very high solids coatings are difficult to atomize due to their higher viscosities. However, when a turbine is used, the temperature of the atomizing air increases which aids in reducing the viscosity of the coating. Other disadvantages of HVLP spray guns are that they cannot be used with extension nozzles, and they may slow production rates because of the low fluid delivery rates.

It is estimated that HVLP can apply approximately 80 percent of the coating currently used in the aerospace industry, including primers, waterborne coatings, and both single and two-component topcoats. A medium commercial/rework facility utilizes HVLP equipment with high solids paint and has had a reduction of 22 to 30 percent in coating usage for various aircraft types. The HVLP technology has proven easy to use and maintain. It also provides high transfer efficiency and appears to be the preferred spray technology in the aerospace industry at this time.

Table 3-1

TABLE 3-1. PERCENT REDUCTION IN COATING EMISSIONS (PRIMERS AND TOPCOATS) WITH HIGH TRANSFER EFFICIENCY EQUIPMENT FROM SECTION 114 DATA

Size	Commercial or military	OEM or rework	High transfer equipment	% Reduction in emissions
Large	Military	OEM	HVLP	20
Large	Military	OEM	HVLP	20
Large	Military	OEM	HVLP	25
Large	Commercial	OEM	Unspecified	30
Large	Commercial	OEM	Unspecified	18
Medium	Commercial Military Military	OEM OEM Rework	HVLP	25
Medium	Commercial Military Military	OEM OEM Rework	HVLP	20-40
Medium	Military	OEM	HVLP and electrostatic	40
Medium	Military	OEM	HVLP and electrostatic	40
Medium	Military	OEM	HVLP	40
Medium	Military	OEM	HVLP	10
Medium	Military Military	OEM Rework	Electrostatic	30-40
Medium	Military	Rework	HVLP and electrostatic	35-40
Medium	Commercial	OEM	Unspecified	30
Medium	Commercial	OEM	Unspecified	33
Medium	Commercial	Rework	HVLP and electrostatic	50
Medium	Commercial	Rework	HVLP and high solids	22% for large aircraft 25% for medium aircraft 30% for small aircraft
Small	Commercial	OEM	Unspecified	30
Small	Commercial Military	OEM OEM	HVLP	28

shows the reduction in emissions obtained from the Section 114 questionnaire responses from various facilities utilizing high transfer efficiency equipment such as HVLP or electrostatic equipment, either alone, in conjunction with each other, or, in one case, HVLP equipment with high solids coatings.

3.2.1.2 Electrostatic Spray Guns. With electrostatic spray systems, atomized particles of coating acquire an electric charge as they pass through a high voltage field at the end of the spray nozzle. This electric charge causes the particles to be attracted to the parts being painted, which are electrically grounded. Although other substrates can be pretreated with conductive coatings, this technology is primarily used for metal parts. The electrostatic effect can be utilized in conjunction with air spray, airless, and air-assisted airless systems to enhance the transfer efficiencies of these basic technologies. See Table 3-1 for examples of percent reduction obtained at various facilities using electrostatic spray guns or electrostatic spray guns in combination with HVLP spray guns.

3.2.2 Spray Gun Cleaning

Spray guns are typically cleaned at the end of every job, as well as between color changes. Manual cleaning of spray guns involves disassembling the gun and placing the parts in a tray containing an appropriate cleaning solvent. The residual paint is brushed or wiped off the parts, then cleaning solvent is sprayed through the gun after it is reassembled. Various methods are used to minimize the resulting emissions from spray gun cleaning and are discussed below.

Enclosed system. Enclosed spray gun cleaners are completely enclosed units that spray the cleaning solvent through and over the spray gun. The enclosed unit eliminates most of the exposure of the cleaning solvent to the air, thereby greatly reducing the VOC emissions from evaporation.

Nonatomized cleaning. Cleaning solvent is placed in the pressure pot and forced through the gun with the atomizing cap in place. No atomizing air is to be used. The cleaning solvent from the spray gun is directed into a vat, drum, or other waste container that is closed when not in use.

Disassembled spray gun cleaning. Manual cleaning (described above) with the components cleaned by hand in a vat, which is only closed when not in use. Alternatively, the components are

soaked in a vat, which is closed at all times except when components are being inserted or removed.

Atomizing cleaning. Cleaning solvent is forced through the spray gun and the resulting atomized spray is directed into a waste container that is fitted with a device designed to capture the atomized solvent emissions.

3.2.3 Conventional High Transfer Efficiency Application Methods

Conventional high transfer efficiency application methods for primers and topcoats include dip, roll, brush, and flow coating (use of these methods for specialty coatings is limited). These methods are discussed below.

Dip Coating. With dip coating application, parts are immersed into a tank of coating. The parts are then removed from the tank and held over it until the excess coating drips back into the tank. This method is simple and allows many different parts to be coated with high transfer efficiency. However, dip coating is limited to parts that can fit into the dip tank. Other parts difficult to dip coat could include complex parts that would trap the coating, allowing unequal coating thicknesses.

Roll Coating. In roll coating application, a series of mechanical rollers are used to coat flat surfaces. This method achieves high efficiency with high rates of application and automation. However, roll coating is limited to flat parts.

Brush Coating. In brush coating application, brushes and hand rollers are used to apply the coating manually. This method is used with operations (e.g., touch-up and detail painting) that cannot tolerate the overspray associated with spray gun application. For example, if a facility needs to paint only the tail section of an airplane, it may be easier to brush coat this area than to mask the entire plane to protect the rest of the shell from overspray. This application method typically involves high labor costs, increased production time, and poor coating thickness control.

Flow Coating. In flow coating application, the part is conveyed over a closed sink, and a pumped stream of coating

gently flows over the surface of the part. The excess coating is drained into the sink, filtered, and pumped to a holding tank for reuse. Flow coating is typically limited to flat sheets and noncritical parts. Coating thickness is difficult to control using flow coating.

3.3 HAND-WIPE CLEANER SUBSTITUTIONS

Product substitutions for hand-wipe cleaning that are prevalent in the aerospace industry can be classified as aqueous, semiaqueous, citrus-based, and reduced vapor pressure. Each category is discussed below.

3.3.1 Aqueous and Semiaqueous

Aqueous and semiaqueous cleaners contain water as the base component rather than an organic solvent or mixture of solvents. Other components may include corrosion inhibitors, alkalinity builders, and organic surfactants, depending on the desired soil removal properties. Aqueous and semiaqueous cleaners have been used in noncritical areas where strict cleanliness requirements do not have to be met, or where there are no confined spaces that may trap residues of the cleaner.

The advantages of using aqueous and semiaqueous cleaning solvents include reduced VOC emissions. Disadvantages are increased production time due to slower evaporation rates, possible decreased efficiency, and possible increase in wastewater treatment requirements. In addition, aqueous cleaners may not be applicable to all aerospace parts, especially those components that have small confined spaces where the cleaner residues cannot be adequately removed.

3.3.2 Citrus-Based

Citrus-based terpenes such as d-limonene are the primary components in many alternative cleaning solutions. While these solutions have high VOC contents, their vapor pressure is very low, leading to reduced evaporation rates. These cleaners have been found to be effective in some cleaning operations except for cleaning prior to adhesive bonding. Some disadvantages include possible worker sensitivity, VOC emissions, lack of rinseability

in water, and increased production time due to slower evaporation rates.

3.3.3 Reduced Vapor Pressure

Reduced vapor pressure cleaning solvents have a maximum VOC composite vapor pressure of 45 millimeters of mercury (mmHg) at 20°C. Cleaning solvent emissions are reduced because their lower vapor pressure leads to reduced evaporation rates. These cleaners are effective in many cleaning operations except for some limited operations such as cleaning oxygen systems.

4.0 PRESUMPTIVE RACT REQUIREMENTS

The presumptive RACT requirements for the aerospace component and vehicle cleaning and coating operations are described in the following sections. The operations covered by this CTG shall not be subject to another CTG. The operations and applications exempted under this CTG shall not be subject to another CTG. Applicable definitions are included in Appendix A.

These presumptive RACT requirements do not apply to manufacturing or rework operations involving space vehicles; rework operations performed on antique aerospace vehicles or components; or to the following activities where cleaning and coating of aerospace components and vehicles may take place: research and development, quality control, laboratory testing, and electronic parts and assemblies (except for cleaning and coating of completed assemblies).

4.1 SPECIALTY COATINGS

Presumptive RACT for coatings used on aerospace components and vehicles is based on VOC content. Except as provided in Sections 4.0 and 4.1, the presumptive RACT for coating VOC content is the use of coatings with a VOC content less than or equal to that given in Table 4-1: Specialty Coatings VOC Content Limits.

TABLE 4-1. SPECIALTY COATINGS VOC CONTENT LIMITS (g/L)[a]

Coating type	Limit
Ablative Coating	600
Adhesion Promoter	890
Adhesive Bonding Primers:	
Cured at 250°F or below	850
Cured above 250°F	1030
Adhesives:	
Commercial Interior Adhesive	760
Cyanoacrylate Adhesive	1,020
Fuel Tank Adhesive	620
Nonstructural Adhesive	360
Rocket Motor Bonding Adhesive	890
Rubber-based Adhesive	850
Structural Autoclavable Adhesive	60
Structural Nonautoclavable Adhesive	850
Antichafe Coating	660
Bearing Coating	620
Caulking and Smoothing Compounds	850
Chemical Agent-Resistant Coating	550
Clear Coating	720
Commercial Exterior Aerodynamic Structure Primer	650
Compatible Substrate Primer	780
Corrosion Prevention Compound	710
Cryogenic Flexible Primer	645
Cryoprotective Coating	600
Dry Lubricative Material	880
Electric or Radiation-Effect Coating	800
Electrostatic Discharge and Electromagnetic Interference (EMI) Coating	800
Elevated-Temperature Skydrol-Resistant Commercial Primer	740
Epoxy Polyamide Topcoat	660
Fire-Resistant (interior) Coating	800
Flexible Primer	640
Flight-Test Coatings:	
Missile or Single Use Aircraft	420
All Other	840
Fuel-Tank Coating	720
High-Temperature Coating	850
Insulation Covering	740
Intermediate Release Coating	750
Lacquer	830
Maskants:	
Bonding Maskant	1,230
Critical Use and Line Sealer Maskant	1,020
Seal Coat Maskant	1,230
Metallized Epoxy Coating	740
Mold Release	780
Optical Anti-Reflective Coating	750
Part Marking Coating	850
Pretreatment Coating	780
Rain Erosion-Resistant Coating	850
Rocket Motor Nozzle Coating	660
Scale Inhibitor	880
Screen Print Ink	840
Sealants:	
Extrudable/Rollable/Brushable Sealant	280
Sprayable Sealant	600
Silicone Insulation Material	850
Solid Film Lubricant	880
Specialized Function Coating	890
Temporary Protective Coating	320
Thermal Control Coating	800
Wet Fastener Installation Coating	675
Wing Coating	850

[a]Coating limits are expressed in terms of mass (grams) or VOC per volume (liter) of coating less water and less exempt solvent.

Exemptions. The following applications are exempt from the presumptive RACT coating limits in Table 4-1:

1. Touchup, aerosol, and DOD classified coatings;

2. Coatings used on space vehicles; and

3. Facilities that use separate formulations in volumes of less than 50 gallons per year, subject to a maximum exemption of 200 gallons for all such formulations applied annually.

4.2 PRIMERS, TOPCOATS, CHEMICAL MILLING MASKANTS

The broad categories of primers, topcoats (including self-priming topcoats), and chemical milling maskants (Type I/II) are not specialty coatings as listed in Table 4-1 and are regulated for major sources under the Aerospace NESHAP requiring MACT limits with a compliance date specified in 40 CFR 63.749(a). These limits may be assumed to represent RACT limits 1 year after the major sources are required to meet the MACT limits and, therefore, shall not be effective until 1 year after the NESHAP compliance date of September 1, 1998. The requirements do not apply to facilities that use separate formulations of primers, topcoats, and chemical milling maskants (Type I/II) in volumes of less than 50 gallons per year, subject to a maximum exemption of 200 gallons total for such formulations applied annually.

4.3 APPLICATION EQUIPMENT FOR PRIMERS AND TOPCOATS

Presumptive RACT for primer and topcoat (including self-priming topcoats) application equipment used on aerospace components and vehicles is based on current practices and requirements in some States. Except as provided in Section 4.3 and Subsection 4.3.1, the presumptive RACT for primer and topcoat (including self-priming topcoat) application equipment is the use of one or more of the following application techniques: flow/curtain coat; dip coat; roll coating; brush coating; cotton-tipped swab application; electrodeposition coating; high volume low pressure (HVLP) spraying; electrostatic spray; or other coating application methods that achieve emission reductions equivalent to HVLP or electrostatic spray application methods.

4.3.1 Exemptions

The following situations are exempt from the presumptive RACT application techniques described in Section 4.3:

1. Any situation that normally requires the use of an airbrush or an extension on the spray gun to properly reach limited access spaces;

2. The application of specialty coatings;

3. The application of coatings that contain fillers that adversely affect atomization with HVLP spray guns and that the permitting agency has determined cannot be applied by any of the application methods specified in Section 4.3;

4. The application of coatings that normally have a dried film thickness of less than 0.0013 centimeter (0.0005 in.) and that the permitting agency has determined cannot be applied by any of the application methods specified in Section 4.3;

5. The use of airbrush application methods for stenciling, lettering, and other identification markings;

6. The use of hand-held spray can application methods; and

7. Touch-up and repair operations.

4.3.2 Timing (Schedule) of Compliance

The application techniques identified as presumptive RACT are regulated for major sources under the Aerospace NESHAP requiring MACT application equipment with a compliance date of September 1, 1998 specified in 40 CFR 63.749(a). These equipment requirements may be assumed to represent RACT requirements 1 year after the major sources are required to meet the MACT equipment requirements and, therefore, shall not be effective until 1 year after the NESHAP compliance date of September 1, 1998.

4.4 CLEANING OPERATIONS

For solvent cleaning operations, this guidance departs from the standard presumptive RACT requirement to incorporate MACT level controls. Therefore, the requirements of Section 4.2 shall not become effective prior to the Aerospace NESHAP compliance date of September 1, 1998. The MACT and RACT for solvent cleaning is based on work practices and cleaning solvent composition. Except as provided in Section 4.0 and Subsection 4.4.2, MACT and RACT for certain activities is described below.

4.4.1 Housekeeping

All fresh and used cleaning solvents, except semiaqueous cleaning solvents, used in solvent cleaning operations shall be stored in containers that shall be kept closed at all times except when filling or emptying. It is recommended that cloth and paper, or other absorbent applicators, moistened with cleaning solvents be stored in closed containers. Cotton-tipped swabs used for very small cleaning operations are exempt. In addition, the owner or operator must implement handling and transfer procedures to minimize spills during filling and transferring the cleaning solvent to or from enclosed systems, vats, waste containers, and other cleaning operation equipment that hold or store fresh or used cleaning solvents. The above requirements are known collectively as housekeeping measures. Aqueous cleaning solvents are excluded from these housekeeping requirements.

4.4.2 Hand-Wipe Cleaning

Hand-wipe cleaning operations require the use of cleaning solvents which are aqueous or have a VOC composite vapor pressure less than or equal to 45 millimeters of mercury (mm Hg) at 20°C.

Exemptions

The following cleaning operations would be exempt from the cleaning solvent composition and vapor pressure requirements stated in Section 4.4.2:

1. Cleaning during the manufacture, assembly, installation, maintenance, or testing of components of breathing oxygen systems that are exposed to the breathing oxygen;

2. Cleaning during the manufacture, assembly, installation, maintenance, or testing of parts, subassemblies, or assemblies that are exposed to strong oxidizers or reducers (e.g., nitrogen tetroxide, liquid oxygen, hydrazine);

3. Cleaning and surface activation prior to adhesive bonding;

4. Cleaning of electronics and assemblies containing electronics;

5. Cleaning of aircraft and ground support equipment fluid systems that are exposed to the fluid, including air-to-air heat exchangers and hydraulic fluid systems;

6. Cleaning of fuel cells, fuel tanks, and confined spaces;

7. Surface cleaning of solar cells, coated optics, and thermal control surfaces;

8. Cleaning during fabrication, assembly, installation, and maintenance of upholstery, curtains, carpet, and other textile materials used on the interior of the aircraft;

9. Cleaning of metallic and nonmetallic materials used in honeycomb cores during the manufacture or maintenance of these cores, and cleaning of the completed cores used in the manufacture of aerospace vehicles or components;

10. Cleaning of aircraft transparencies, polycarbonates, or glass substrates;

11. Cleaning and cleaning solvent usage associated with research and development, quality control, or laboratory testing;

12. Cleaning operations, using nonflammable liquids, conducted within 5 feet of energized electrical systems. Energized electrical systems means any AC or DC electrical circuit on an assembled aircraft once electrical power is connected, including interior passenger and cargo areas, wheel wells, and tail sections; and

13. Cleaning operations identified as essential uses under the Montreal Protocol for which the Administrator has allocated essential use allowances or exemptions in 40 CFR § 82.4.

4.4.3 Flush Cleaning

For cleaning solvents used in the flush cleaning of aerospace parts, assemblies, and coating unit components, the used cleaning solvent (except for semiaqueous cleaning solvents) must be emptied into an enclosed container or collection system that is kept closed when not in use or captured on wipers and disposed of in accordance with Section 4.4.1. Aqueous cleaning solvents are excluded from these flush cleaning requirements.

4.4.4 Spray Gun Cleaning

All spray guns must be cleaned by one or more of the following methods:

1. Enclosed spray gun cleaning system that is kept closed when not in use, provided that leaks from enclosed spray gun cleaners are repaired within 14 days from when the leak is first discovered. If the leak is not repaired by the 15th day after detection, the cleaning solvent shall be removed and the enclosed cleaner shall be shut down until the leak is repaired or its use is permanently discontinued;

2. Unatomized discharge of cleaning solvent into a waste container that is kept closed when not in use;

3. Disassembled spray gun that is cleaned in a vat and kept closed when not in use; or

4. Atomized spray into a waste container that is fitted with a device designed to capture atomized cleaning solvent emissions.

5.0 GUIDANCE TO STATE ENFORCEMENT AGENCIES

This chapter presents information for air quality management agencies to consider in developing an enforceable rule limiting VOC emissions from coating and solvent cleaning operations at aerospace manufacturing and rework facilities. The State or other implementing agency can exercise its prerogative to consider other options provided that they meet the objectives prescribed in this chapter.

This guidance is for instructional purposes only and, as such, is not binding. In the development of a State or local aerospace manufacturing and rework operations rule, the State or other enforcement agency should consider all information presented in the CTG and the promulgated NESHAP along with additional information about specific sources to which the rule will apply. The reasonably available control technology (RACT) rule, however, should address all the factors listed in this chapter and in Section 4 to ensure that the rule has reasonable provisions for demonstrating compliance and is enforceable. A model rule which contains all these requirements is provided in Appendix B. The model rule is guidance only and the State or local agency has the flexibility to adopt alternative measures, including market-based incentive programs, provided they meet EPA enforceability criteria.

5.1 DEFINITIONS

The RACT rule should accurately describe the types of sources that would be affected and clearly define terms used to describe the industry or applicable control methods. Example definitions of pertinent terms are presented in Appendix A for reference by the State or local agency.

5.2 APPLICABILITY

The recommended RACT described in this document applies to the manufacture of aerospace vehicles and components as well as the rework or repair of these aerospace products. (See Section 2.) This guidance has been developed for affected sources in areas of moderate, serious, or severe nonattainment that have the potential to emit greater than or equal to 25 tons per year of VOC's. The guidance is intended to apply to affected sources in extreme areas, however, if potential VOC emissions are greater than or equal to 10 tons per year. The State or local agency has the flexibility to apply RACT as deemed necessary. For example, an agency may apply RACT to all sources that have actual emissions at 50 percent of these thresholds.

5.3 COMPLIANCE, MONITORING, RECORDKEEPING & REPORTING PROVISIONS

The State or local agency is responsible for ensuring that appropriate requirements for compliance determination (testing), monitoring, recordkeeping and reporting are incorporated into its RACT rule. These requirements must meet two objectives: (1) the agency's need to demonstrate VOC emission reductions and (2) EPA's criteria for enforceability. Because source types, compliance methods, and agency requirements may vary substantially across the nation, specific provisions for compliance determination (testing), monitoring, recordkeeping and reporting are not included in this CTG.

However, for a State's RACT rules to be enforceable, they must definitively set forth recordkeeping, monitoring, and compliance determination (testing) requirements appropriate to the type of source(s) being regulated and sufficient to allow determinations whether the source(s) are in compliance. Therefore, EPA's Model Rule, which accompanies this CTG, contains suggested recordkeeping, testing, and monitoring provisions that EPA believes are sufficient to enable EPA and the States to determine compliance with the RACT requirements of the Model Rule. The State or other implementing agency can exercise its prerogative to consider various recordkeeping, testing, and monitoring requirements provided they meet the objectives

prescribed in this CTG. This guidance is for instructional purposes only and, as such, is not binding.

APPENDIX A. DEFINITIONS

Terms used in this CTG and the Model Rule in Appendix B are defined in the Clean Air Act (Act), or in this section as follows:

Ablative coating means a coating that chars when exposed to open flame or extreme temperatures, as would occur during the failure of an engine casing or during aerodynamic heating. The ablative char surface serves as an insulative barrier, protecting adjacent components from the heat or open flame.

Adhesion promoter means a very thin coating applied to a substrate to promote wetting and form a chemical bond with the subsequently applied material.

Adhesive bonding primer means a primer applied in a thin film to aerospace components for the purpose of corrosion inhibition and increased adhesive bond strength by attachment. There are two categories of adhesive bonding primers: primers with a design cure at 250°F or below and primers with a design cure above 250°F.

Aerosol coating means a hand-held, pressurized, nonrefillable container that expels an adhesive or a coating in a finely divided spray when a valve on the container is depressed.

Aerospace vehicle or component means any fabricated part, processed part, assembly of parts, or completed unit, with the exception of electronic components, of any aircraft including but not limited to airplanes, helicopters, missiles, rockets, and space vehicles.

Aircraft fluid systems means those systems that handle hydraulic fluids, fuel, cooling fluids, or oils.

Aircraft transparency means the aircraft windshield, canopy, passenger windows, lenses and other components which are constructed of transparent materials.

Antichafe coating means a coating applied to areas of moving aerospace components that may rub during normal operations or installation.

Antique aerospace vehicle or component means an aircraft or component thereof that was built at least 30 years ago. An antique aerospace vehicle would not routinely be in commercial or military service in the capacity for which it was designed.

Aqueous cleaning solvent means a solvent in which water is at least 80 percent of the solvent as applied.

Bearing coating means a coating applied to an antifriction bearing, a bearing housing, or the area adjacent to such a bearing in order to facilitate bearing function or to protect base material from excessive wear. A material shall not be classified as a bearing coating if it can also be classified as a dry lubricative material or a solid film lubricant.

Bonding maskant means a temporary coating used to protect selected areas of aerospace parts from strong acid or alkaline solutions during processing for bonding.

Caulking and smoothing compounds means semi-solid materials which are applied by hand application methods and are used to aerodynamically smooth exterior vehicle surfaces or fill cavities such as bolt hole accesses. A material shall not be classified as a caulking and smoothing compound if it can also be classified as a sealant.

Chemical agent-resistant coating (CARC) means an exterior topcoat designed to withstand exposure to chemical warfare agents or the decontaminants used on these agents.

Chemical milling maskant means a coating that is applied directly to aluminum components to protect surface areas when chemical milling the component with a Type I or II etchant. Type I chemical milling maskants are used with a Type I etchant and Type II chemical milling maskants are used with a Type II etchant. This definition does not include bonding maskants,

critical use and line sealer maskants, and seal coat maskants. Additionally, maskants that must be used with a combination of Type I or II etchants and any of the above types of maskants (i.e., bonding, critical use and line sealer, and seal coat) are not included. Maskants that are defined as specialty coatings are not included under this definition.

Cleaning operation means collectively spray-gun, hand-wipe, and flush cleaning operations.

Cleaning solvent means a liquid material used for hand-wipe, spray gun, or flush cleaning. This definition does not include solutions that contain no VOC.

Clear coating means a transparent coating usually applied over a colored opaque coating, metallic substrate, or placard to give improved gloss and protection to the color coat. In some cases, a clearcoat refers to any transparent coating without regard to substrate.

Closed-cycle depainting system means a dust free, automated process that removes permanent coating in small sections at a time, and maintains a continuous vacuum around the area(s) being depainted to capture emissions.

Coating means a material that is applied to the surface of an aerospace vehicle or component to form a decorative, protective, or functional solid film, or the solid film itself.

Coating operation means using a spray booth, tank, or other enclosure or any area, such as a hangar, for applying a single type of coating (e.g., primer); using the same spray booth for applying another type of coating (e.g., topcoat) constitutes a separate coating operation for which compliance determinations are performed separately.

Coating unit means a series of one or more coating applicators and any associated drying area and/or oven wherein a coating is applied, dried, and/or cured. A coating unit ends at the point where the coating is dried or cured, or prior to any subsequent application of a different coating. It is not necessary to have an oven or flashoff area to be included in this definition.

Commercial exterior aerodynamic structure primer means a primer used on aerodynamic components and structures that protrude from the fuselage, such as wings and attached components, control surfaces, horizontal stabilizers, vertical fins, wing-to-body fairings, antennae, and landing gear and doors, for the purpose of extended corrosion protection and enhanced adhesion.

Commercial interior adhesive means materials used in the bonding of passenger cabin interior components. These components must meet the FAA fireworthiness requirements.

Compatible substrate primer means either compatible epoxy primer or adhesive primer. Compatible epoxy primer is primer that is compatible with the filled elastomeric coating and is epoxy based. The compatible substrate primer is an epoxy-polyamide primer used to promote adhesion of elastomeric coatings such as impact-resistant coatings. Adhesive primer is a coating that (1) inhibits corrosion and serves as a primer applied to bare metal surfaces or prior to adhesive application, or (2) is applied to surfaces that can be expected to contain fuel. Fuel tank coatings are excluded from this category.

Confined space means a space that (1) is large enough and so configured that an employee can bodily enter and perform assigned work; (2) has limited or restricted means for entry or exit (for example, fuel tanks, fuel vessels, and other spaces that have limited means of entry); and (3) is not suitable for continuous employee occupancy.

Corrosion prevention system means a coating system that provides corrosion protection by displacing water and penetrating mating surfaces, forming a protective barrier between the metal surface and moisture. Coatings containing oils or waxes are excluded from this category.

Critical use and line sealer maskant means a temporary coating, not covered under other maskant categories, used to protect selected areas of aerospace parts from strong acid or alkaline solutions such as those used in anodizing, plating, chemical milling and processing of magnesium, titanium, or high-

strength steel, high-precision aluminum chemical milling of deep cuts, and aluminum chemical milling of complex shapes. Materials used for repairs or to bridge gaps left by scribing operations (i.e., line sealer) are also included in this category.

Cryogenic flexible primer means a primer designed to provide corrosion resistance, flexibility, and adhesion of subsequent coating systems when exposed to loads up to and surpassing the yield point of the substrate at cryogenic temperatures (-275°F and below).

Cryoprotective coating means a coating that insulates cryogenic or subcooled surfaces to limit propellant boil-off, maintain structural integrity of metallic structures during ascent or re-entry, and prevent ice formation.

Cyanoacrylate adhesive means a fast-setting, single component adhesive that cures at room temperature. Also known as "super glue."

Dry lubricative material means a coating consisting of lauric acid, cetyl alcohol, waxes, or other noncross linked or resin-bound materials that act as a dry lubricant.

Electric or radiation-effect coating means a coating or coating system engineered to interact, through absorption or reflection, with specific regions of the electromagnetic energy spectrum, such as the ultraviolet, visible, infrared, or microwave regions. Uses include, but are not limited to, lightning strike protection, electromagnetic pulse (EMP) protection, and radar avoidance. Coatings that have been designated as "classified" by the Department of Defense are exempt.

Electrostatic discharge and electromagnetic interference (EMI) coating means a coating applied to space vehicles, missiles, aircraft radomes, and helicopter blades to disperse static energy or reduce electromagnetic interference.

Elevated-temperature Skydrol-resistant commercial primer means a primer applied primarily to commercial aircraft (or commercial aircraft adapted for military use) that must withstand immersion in phosphate-ester (PE) hydraulic fluid (Skydrol 500b

or equivalent) at the elevated temperature of 150°F for 1,000 hours.

Epoxy polyamide topcoat means a coating used where harder films are required or in some areas where engraving is accomplished in camouflage colors.

Exempt solvent means a specified organic compound that has been determined by the EPA to have negligible photochemical reactivity and is listed in 40 CFR 51.100.

Fire-resistant (interior) coating means for civilian aircraft, fire-resistant interior coatings are used on passenger cabin interior parts that are subject to the FAA fireworthiness requirements. For military aircraft, fire-resistant interior coatings are used on parts that are subject to the flammability requirements of MIL-STD-1630A and MIL-A-87721. For space applications, these coatings are used on parts that are subject to the flammability requirements of SE-R-0006 and SSP 30233.

Flexible primer means a primer that meets flexibility requirements such as those needed for adhesive bond primed fastener heads or on surfaces expected to contain fuel. The flexible coating is required because it provides a compatible, flexible substrate over bonded sheet rubber and rubber-type coatings as well as a flexible bridge between the fasteners, skin, and skin-to-skin joints on outer aircraft skins. This flexible bridge allows more topcoat flexibility around fasteners and decreases the chance of the topcoat cracking around the fasteners. The result is better corrosion resistance.

Flight test coating means a coating applied to aircraft other than missiles or single-use aircraft prior to flight testing to protect the aircraft from corrosion and to provide required marking during flight test evaluation.

Flush cleaning means removal of contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle or component or coating equipment by passing solvent over, into, or through the item being cleaned. The solvent may simply be poured into the item being cleaned and then drained, or assisted by air or hydraulic pressure, or by pumping. Hand-wipe cleaning operations

where wiping, scrubbing, mopping, or other hand action are used are not included.

Fuel tank adhesive means an adhesive used to bond components exposed to fuel and must be compatible with fuel tank coatings.

Fuel tank coating means a coating applied to fuel tank components for the purpose of corrosion and/or bacterial growth inhibition and to assure sealant adhesion in extreme environmental conditions.

Grams of VOC per liter of coating (less water and less exempt solvent) means the weight of VOC per combined volume of total volatiles and coating solids, less water and exempt compounds, and can be calculated by the following equation:

$$\text{grams of VOC per liter of coating (less water and less exempt solvent)} = \frac{W_s - W_w - W_{es}}{V_s - V_w - V_{es}}$$

W_s = weight of total volatiles in grams

W_w = weight of water in grams

W_{es} = weight of exempt compounds in grams

V_s = volume of coating in liters

V_w = volume of water in liters

V_{es} = volume of exempt compounds in liters

Hand-wipe cleaning operation means removing contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle or component by physically rubbing it with a material such as a rag, paper, or cotton swab that has been moistened with a cleaning solvent.

High temperature coating means a coating designed to withstand temperatures of more than 350°F.

High volume low pressure (HVLP) spray equipment means spray equipment that is used to apply coating by means of a spray gun that operates at 10.0 psig of atomizing air pressure or less at the air cap.

Insulation covering means material that is applied to foam insulation to protect the insulation from mechanical or environmental damage.

Intermediate release coating means a thin coating applied beneath topcoats to assist in removing the topcoat in depainting operations and generally to allow the use of less hazardous depainting methods.

Lacquer means a clear or pigmented coating formulated with a nitrocellulose or synthetic resin to dry by evaporation without a chemical reaction. Lacquers are resoluble in their original solvent.

Leak means any visible leakage, including misting and clouding.

Limited access space means internal surfaces or passages of an aerospace vehicle or component that cannot be reached without the aid of an airbrush or a spray gun extension for the application of coatings.

Metalized epoxy coating means a coating that contains relatively large quantities of metallic pigmentation for appearance and/or added protection.

Mold release means a coating applied to a mold surface to prevent the molded piece from sticking to the mold as it is removed.

Nonstructural adhesive means an adhesive that bonds nonload bearing aerospace components in noncritical applications and is not covered in any other specialty adhesive categories.

Operating parameter value means a minimum or maximum value established for a control equipment or process parameter that, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has continued to comply with an applicable emission limitation.

Optical antireflection coating means a coating with a low reflectance in the infrared and visible wavelength ranges that is used for antireflection on or near optical and laser hardware.

Part marking coating means coatings or inks used to make identifying markings on materials, components, and/or assemblies. These markings may be either permanent or temporary.

Pretreatment coating means an organic coating that contains at least 0.5 percent acids by weight and is applied directly to

metal or composite surfaces to provide surface etching, corrosion resistance, adhesion, and ease of stripping.

Primer means the first layer and any subsequent layers of identically formulated coating applied to the surface of an aerospace vehicle or component. Primers are typically used for corrosion prevention, protection from the environment, functional fluid resistance, and adhesion of subsequent coatings. Primers that are defined as specialty coatings are not included under this definition.

Radome means the nonmetallic protective housing for. electromagnetic transmitters and receivers (e.g., radar, electronic countermeasures, etc.).

Rain erosion-resistant coating means a coating or coating system used to protect the leading edges of parts such as flaps, stabilizers, radomes, engine inlet nacelles, etc. against erosion caused by rain impact during flight.

Research and development means an operation whose primary purpose is for research and development of new processes and products and that is conducted under the close supervision of technically trained personnel and is not involved in the manufacture of final or intermediate products for commercial purposes, except in a de minimis manner.

Rocket motor bonding adhesive means an adhesive used in rocket motor bonding applications.

Rocket motor nozzle coating means a catalyzed epoxy coating system used in elevated temperature applications on rocket motor nozzles.

Rubber-based adhesive means a quick setting contact cement that provide a strong, yet flexible bond between two mating surfaces that may be of dissimilar materials.

Scale inhibitor means a coating that is applied to the surface of a part prior to thermal processing to inhibit the formation of scale.

Screen print ink means an ink used in screen printing processes during fabrication of decorative laminates and decals.

Sealant means a material used to prevent the intrusion of water, fuel, air, or other liquids or solids from certain areas of aerospace vehicles or components. There are two categories of sealants: extrudable/rollable/brushable sealants and sprayable sealants.

Seal coat maskant means an overcoat applied over a maskant to improve abrasion and chemical resistance during production operations.

Self-priming topcoat means a topcoat that is applied directly to an uncoated aerospace vehicle or component for purposes of corrosion prevention, environmental protection, and functional fluid resistance. More than one layer of identical coating formulation may be applied to the vehicle or component.

Semiaqueous cleaning solvent means a solution in which water is a primary ingredient ($\geq$60 percent of the solvent solution as applied must be water).

Silicone insulation material means an insulating material applied to exterior metal surfaces for protection from high temperatures caused by atmospheric friction or engine exhaust. These materials differ from ablative coatings in that they are not "sacrificial."

Solids means the nonvolatile portion of the coating that after drying makes up the dry film.

Solid film lubricant means a very thin coating consisting of a binder system containing as its chief pigment material one or more of the following: molybdenum, graphite, polytetrafluoroethylene (PTFE), or other solids that act as a dry lubricant between faying (i.e., closely or tightly fitting) surfaces.

Space vehicle means a man-made device, either manned or unmanned, designed for operation beyond earth's atmosphere. This definition includes integral equipment such as models, mock-ups, prototypes, molds, jigs, tooling, hardware jackets, and test coupons. Also included is auxiliary equipment associated with test, transport, and storage, that through contamination can compromise the space vehicle performance.

Specialty coating means a coating that, even though it meets the definition of a primer, topcoat, or self-priming topcoat, has additional performance criteria beyond those of primers, topcoats, and self-priming topcoats for specific applications. These performance criteria may include, but are not limited to, temperature or fire resistance, substrate compatibility, antireflection, temporary protection or marking, sealing, adhesively joining substrates, or enhanced corrosion protection.

Specialized function coating means a coating that fulfills extremely specific engineering requirements that are limited in application and are characterized by low volume usage. This category excludes coatings covered in other Specialty Coating categories.

Spray gun means a device that atomizes a coating or other material and projects the particulates or other material onto a substrate.

Structural autoclavable adhesive means an adhesive used to bond load-carrying aerospace components that is cured by heat and pressure in an autoclave.

Structural nonautoclavable adhesive means an adhesive cured under ambient conditions that is used to bond load-carrying aerospace components or other critical functions, such as nonstructural bonding in the proximity of engines.

Surface preparation means the removal of contaminants from the surface of an aerospace vehicle or component or the activation or reactivation of the surface in preparation for the application of a coating.

Temporary protective coating means a coating applied to provide scratch or corrosion protection during manufacturing, storage, or transportation. Two types include peelable protective coatings and alkaline removable coatings. These materials are not intended to protect against strong acid or alkaline solutions. Coatings that provide this type of protection from chemical processing are not included in this category.

Thermal control coating means a coating formulated with specific thermal conductive or radiative properties to permit temperature control of the substrate.

Topcoat means a coating that is applied over a primer on an aerospace vehicle or component for appearance, identification, camouflage, or protection. Topcoats that are defined as specialty coatings are not included under this definition.

Touch-up and repair coating means a coating used to cover minor coating imperfections appearing after the main coating operation.

Touch-up and repair operation means that portion of the coating operation that is the incidental application of coating used to cover minor imperfections in the coating finish or to achieve complete coverage. This definition includes out-of-sequence or out-of-cycle coating.

Volatile organic compound (VOC) means any compound defined as VOC in 40 CFR 51.100. This includes any organic compound other than those determined by the EPA to be an exempt solvent. For purposes of determining compliance with emission limits, VOC will be measured by the approved test methods. Where such a method also inadvertently measures compounds that are exempt solvent, an owner or operator may exclude these exempt solvents when determining compliance with an emission standard.

VOC composite vapor pressure means the sum of the partial pressures of the compounds defined as VOC's and is determined by the following calculation:

$$PP_c = \sum_{i=1}^{n} \frac{\frac{W_i}{MW_i} \times VP_i}{\frac{W_w}{MW_w} + \frac{\sum_{i=1}^{n} W_e}{MW_e} + \sum_{i=1}^{n} \frac{W_i}{MW_i}}$$

W_i = Weight of the "i"th VOC compound, grams.

W_w = Weight of water, grams.

W_e = Weight of nonwater, non-VOC compound, grams.

MW_i = Molecular weight of the "i"th VOC compound, g/g-mole.

MW_w = Molecular weight of water, g/g-mole.

MW_e = Molecular weight of exempt compound, g/g-mole.

PP_c = VOC composite partial pressure at 20°C, mm Hg.

VP_i = Vapor pressure of the "i"th VOC compound at 20°C, mm Hg.

Waterborne (water-reducible) coating means a coating which contains more than 5 percent water by weight as applied in its volatile fraction.

Wet fastener installation coating means a primer or sealant applied by dipping, brushing, or daubing to fasteners that are installed before the coating is cured.

Wing coating means a corrosion-resistant topcoat that is resilient enough to withstand the flexing of the wings.

APPENDIX B. AEROSPACE MANUFACTURING AND REWORK OPERATIONS MODEL RULE

B.1 APPLICABILITY

(a) Provisions of this Rule

(1) Except as noted in (a)(2) and (a)(3), this rule applies to the manufacture or rework of commercial, civil, or military aerospace vehicles or components at facilities located in severe, serious, and moderate ozone nonattainment areas that have the potential to emit 25 tons per year of VOC or more or are located in extreme nonattainment areas and have potential to emit 10 tons per year or more.

(2) This rule does not apply to the following activities where cleaning and coating of aerospace components and vehicles may take place: research and development, quality control, laboratory testing, and electronic parts and assemblies (except for cleaning and coating of completed assemblies).

(3) This rule does not apply to manufacturing or rework operations involving space vehicles or rework operations performed on antique aerospace vehicles or components.

B.2 DEFINITIONS

For the purpose of this rule the definitions listed in Appendix A shall apply.

B.3 REQUIREMENTS

(a) VOC content of coatings.

(1) A person shall not apply to aerospace vehicles or components any specialty coatings, including any VOC-containing materials added to the original coating supplied by the manufacturer, that contain VOC in excess of the limits specified below:

VOC CONTENT LIMITS FOR SPECIALTY COATINGS (g/L)[a]

Coating type	Limit
Ablative Coating	600
Adhesion Promoter	890
Adhesive Bonding Primers:	
Cured at 250°F or below	850
Cured above 250°F	1030
Adhesives:	
Commercial Interior Adhesive	760
Cyanoacrylate Adhesive	1,020
Fuel Tank Adhesive	620
Nonstructural Adhesive	360
Rocket Motor Bonding Adhesive	890
Rubber-based Adhesive	850
Structural Autoclavable Adhesive	60
Structural Nonautoclavable Adhesive	850
Antichafe Coating	660
Bearing Coating	620
Caulking and Smoothing Compounds	850
Chemical Agent-Resistant Coating	550
Clear Coating	720
Commercial Exterior Aerodynamic Structure Primer	650
Compatible Substrate Primer	780
Corrosion Prevention Compound	710
Cryogenic Flexible Primer	645
Dry Lubricative Material	880
Cryoprotective Coating	600
Electric or Radiation-Effect Coating	800
Electrostatic Discharge and Electromagnetic Interference (EMI) Coating	800
Elevated-Temperature Skydrol-Resistant Commercial Primer	740
Epoxy Polyamide Topcoat	660
Fire-Resistant (interior) Coating	800
Flexible Primer	640
Flight-Test Coatings:	
Missile or Single Use Aircraft	420
All Other	840
Fuel-Tank Coating	720
High-Temperature Coating	850
Insulation Covering	740
Intermediate Release Coating	750
Lacquer	830
Maskants:	
Bonding Maskant	1,230
Critical Use and Line Sealer Maskant	1,020
Seal Coat Maskant	1,230
Metallized Epoxy Coating	740
Mold Release	780
Optical Anti-Reflective Coating	750
Part Marking Coating	850
Pretreatment Coating	780
Rain Erosion-Resistant Coating	850
Rocket Motor Nozzle Coating	660
Scale Inhibitor	880
Screen Print Ink	840
Sealants:	
Extrudable/Rollable/Brushable Sealant	280
Sprayable Sealant	600
Silicone Insulation Material	850
Solid Film Lubricant	880
Specialized Function Coating	890
Temporary Protective Coating	320
Thermal Control Coating	800
Wet Fastener Installation Coating	675
Wing Coating	850

[a] Coating limits expressed in terms of mass (grams) of VOC per volume (liters) of coating less water and less exempt solvent.

(2) The following coating applications are exempt from the VOC content limits listed in paragraph (B.3)(a)(1):

(i) Touchup, aerosol, and DoD "classified" coatings

(ii) Coating of space vehicles

(iii) Facilities that use separate formulations in volumes of less than 50 gallons per year subject to a maximum exemption of 200 gallons total for such formulations applied annually.

(3) Primers, Topcoats, Chemical Milling Maskants. The broad categories of primers, topcoats (including self-priming topcoats), and chemical milling maskants (Type I/II) are not specialty coatings as listed in the table in (B.3)(a)(1) and are regulated for major sources under the Aerospace NESHAP requiring MACT limits with a compliance date of September 1, 1998 as specified in 40 CFR 63.749(a). These limits may be assumed to represent RACT limits 1 year after the major sources are required to meet the MACT limits and, therefore, shall not be effective until 1 year after the NESHAP compliance date. The requirements do not apply to facilities that use separate formulations of primers, topcoats, and chemical milling maskants (Type I/II) in volumes of less than 50 gallons per year, subject to a maximum exemption of 200 gallons total for such formulations applied annually.

(b) Application equipment.

(1) A person shall use one or more of the following application techniques in applying any primer or topcoat to aerospace vehicles or components: flow/curtain coat; dip coat; roll coating; brush coating; cotton-tipped swab application; electrodeposition coating; high volume low pressure (HVLP) spraying; electrostatic spray; or other coating application methods that achieve emission reductions equivalent to HVLP or electrostatic spray application methods.

(2) The following situations are exempt from application equipment requirements listed in paragraph (B.3)(b)(1):

(i) Any situation that normally requires the use of an airbrush or an extension on the spray gun to properly reach limited access spaces;

(ii) The application of specialty coatings;

(iii) The application of coatings that contain fillers that adversely affect atomization with HVLP spray guns and that the permitting agency has determined cannot be applied by any of the application methods specified in Section (B.3)(b)(1);

(iv) The application of coatings that normally have a dried film thickness of less than 0.0013 centimeter (0.0005 in.) and that the permitting agency has determined cannot be applied by any of the application methods specified in Section (B.3)(b)(1);

(v) The use of airbrush application methods for stenciling, lettering, and other identification markings;

(vi) The use of hand-held spray can application methods; and

(vii) Touch-up and repair operations.

(3) The application techniques listed in paragraph (B.3)(b)(1) are regulated for major sources under the Aerospace NESHAP requiring MACT application equipment with a compliance date of September 1, 1998 specified in 40 CFR 63.749(a). These equipment requirements may be assumed to represent RACT requirements 1 year after the major sources are required to meet the MACT equipment requirements and, therefore, shall not be effective until 1 year after the NESHAP compliance date of September 1, 1998.

(c) Solvent cleaning. The following requirements apply to solvent cleaning operations and shall not be effective until the Aerospace NESHAP compliance date of September 1, 1998:

(1) Hand-wipe cleaning. Cleaning solvents used in hand-wipe cleaning operations shall:

(i) Meet the definition of aqueous cleaning solvent in Appendix A, or

(ii) Have a VOC composite vapor pressure less than or equal to 45 millimeters of mercury (mm Hg) at 20°C.

(2) The following solvent cleaning operations are exempt from the requirements in paragraph (B.3)(c)(1):

(i) Cleaning during the manufacture, assembly, installation, maintenance, or testing of components of breathing oxygen systems that are exposed to the breathing oxygen;

(ii) Cleaning during the manufacture, assembly, installation, maintenance, or testing of parts, subassemblies, or assemblies that are exposed to strong oxidizers or reducers (e.g., nitrogen tetroxide, liquid oxygen, hydrazine);

(iii) Cleaning and surface activation prior to adhesive bonding;

(iv) Cleaning of electronics parts and assemblies containing electronics parts;

(v) Cleaning of aircraft and ground support equipment fluid systems that are exposed to the fluid, including air-to-air heat exchangers and hydraulic fluid systems;

(vi) Cleaning of fuel cells, fuel tanks, and confined spaces;

(vii) Surface cleaning of solar cells, coated optics, and thermal control surfaces;

(viii) Cleaning during fabrication, assembly, installation, and maintenance of upholstery, curtains, carpet, and other textile materials used on the interior of the aircraft;

(ix) Cleaning of metallic and nonmetallic materials used in honeycomb cores during the manufacture or maintenance of these cores, and cleaning of the completed cores used in the manufacture of aerospace vehicles or components;

(x) Cleaning of aircraft transparencies, polycarbonate, or glass substrates;

(xi) Cleaning and solvent usage associated with research and development, quality control, or laboratory testing;

(xii) Cleaning operations, using nonflammable liquids, conducted within 5 feet of energized electrical systems. Energized electrical systems means any AC or DC electrical circuit on an assembled aircraft once electrical power is

connected, including interior passenger and cargo areas, wheel wells and tail sections; and,

(xiii) Cleaning operations identified as essential uses under the Montreal Protocol for which the Administrator has allocated essential use allowances or exemptions in 40 CFR § 82.4.

(3) Flush cleaning. For cleaning solvents used in the flush cleaning of parts, assemblies, and coating unit components, the used cleaning solvent (except for semiaqueous cleaning solvents) must be emptied into an enclosed container or collection system that is kept closed when not in use or captured with wipers provided they comply with the housekeeping requirements of (B.3)(c)(5). Aqueous cleaning solvents are exempt from these requirements.

(4) Spray gun cleaning. All spray guns must be cleaned by one or more of the following methods:

(i) Enclosed spray gun cleaning system provided that it is kept closed when not in use and leaks are repaired within 14 days from when the leak is first discovered. If the leak is not repaired by the 15th day after detection, the solvent shall be removed and the enclosed cleaner shall be shut down until the leak is repaired or its use is permanently discontinued,

(ii) Unatomized discharge of solvent into a waste container that is kept closed when not in use,

(iii) Disassembly of the spray gun and cleaning in a vat that is kept closed when not in use, or,

(iv) Atomized spray into a waste container that is fitted with a device designed to capture atomized solvent emissions.

(5) Housekeeping. All fresh and used cleaning solvents, except semiaqueous cleaning solvents, used in solvent cleaning operations shall be stored in containers that shall be kept closed at all times except when filling or emptying. It is recommended that cloth and paper, or other absorbent applicators, moistened with cleaning solvents be stored in closed containers. Cotton-tipped swabs used for very small cleaning operations are exempt. In addition, the owner or operator must implement

handling and transfer procedures to minimize spills during filling and transferring the cleaning solvent to or from enclosed systems, vats, waste containers, and other cleaning operation equipment that hold or store fresh or used cleaning solvents. The above requirements are known collectively as housekeeping measures. Aqueous cleaning solvents are exempt from these requirements.

(d) Control equipment and monitoring.

(1) Each owner or operator may comply with the provisions of paragraph (B.3)(a) by using approved air pollution control equipment provided that the control system has combined VOC emissions capture and control equipment efficiency of at least 81 percent by weight.

(2) Each owner or operator shall submit a monitoring plan that specifies the applicable operating parameter value, or range of values, to ensure ongoing compliance with (B.3)(d)(1). The monitoring device shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's specifications.

(3) Each owner or operator using an enclosed spray gun cleaner shall visually inspect the seals and all other potential sources of leaks at least once per month. Each inspection shall occur while the spray gun cleaner is in operation.

B.4 RECORDKEEPING REQUIREMENTS

(a) Each owner or operator using coatings listed in (B.3)(a) shall:

(1) Maintain a current list of coatings in use with category and VOC content as applied.

(2) Record coating usage on an annual basis

(b) Each owner or operator using cleaning solvents required in (B.3)(c) shall:

(1) For aqueous and semiaqueous hand-wipe cleaning solvents, maintain a list of materials used with corresponding water contents.

(2) For vapor pressure compliant hand-wipe cleaning solvents:

(i) Maintain a current list of cleaning solvents in use with their respective vapor pressures or, for blended solvents, VOC composite vapor pressures.

(ii) Record cleaning solvent usage on an annual basis.

(3) For cleaning solvents with a vapor pressure greater than 45 mm Hg used in exempt hand-wipe cleaning operations:

(i) Maintain a list of exempt hand-wipe cleaning processes.

(ii) Record cleaning solvent usage on an annual basis.

(c) Each owner or operator using control equipment under paragraph (B.3)(d) shall record monitoring parameters as specified in the monitoring plan required under (B.3)(d)(2).

(d) Except for Specialty Coatings, any source that complies with the recordkeeping requirements of the Aerospace NESHAP, 40 CFR 63.752, is deemed to be in compliance with the requirements of this paragraph (B.4).

B.5 TEST METHODS

(a) For coatings which are not waterborne (water-reducible), determine the VOC content of each formulation (less water and less exempt solvents) as applied using manufacturer's supplied data or Method 24 of 40 CFR part 60, Appendix A. If there is a discrepancy between the manufacturer's formulation data and the results of the Method 24 analysis, compliance shall be based on the results from the Method 24 analysis. For water-borne (water-reducible) coatings, manufacturer's supplied data alone can be used to determine the VOC content of each formulation.

(b) Cleaning solvents.

(1) For aqueous and semiaqueous cleaning solvents manufacturers' supplied data shall be used to determine the water content.

(2) For hand-wipe cleaning solvents required in paragraph (B.3)(c)(1), manufacturers' supplied data or standard engineering reference texts or other equivalent methods shall be used to determine the vapor pressure or VOC composite vapor pressure for blended cleaning solvents.

(c) Control equipment. Measurements of VOC emissions subject to paragraph (B.3)(d) shall be conducted in accordance with EPA Methods 18, 25, and/or 25A (40 CFR 60, Appendix A).

(d) Except for Specialty Coatings, any source which complies with the test method requirements of the Aerospace NESHAP, 40 CFR 63.750, is deemed to be in compliance with the requirements of this paragraph (B.5).

Title 40

SECTION 82.4

82.4 Prohibitions for class I controlled substances.

§ 82.4 Prohibitions for class I controlled substances.
(a)(1) Prior to January 1, 1996, for all Groups of class I controlled substances, and prior to January 1, 2005, for class I, Group VI controlled substances, no person may produce, at any time in any control period, (except that are transformed or destroyed domestically or by a person of another Party) in excess of the amount of unexpended production allowances or unexpended Article 5 allowances for that substance held by that person under the authority of this subpart at that time for that control period. Every kilogram of excess production constitutes a separate violation of this subpart.

(2) Effective January 1, 2003, production of class I, Group VI controlled substances is not subject to the prohibitions in paragraph (a)(1) of this section if it is solely for quarantine or preshipment applications as defined in this subpart.

(b)(1) Effective January 1, 1996, for any Class I, Group I, Group II, Group III, Group IV, Group V or Group VII controlled substances, and effective January 1, 2005 for any Class I, Group VI controlled substances, and effective August 18, 2003, for any Class I, Group VIII controlled substance, no person may produce, at any time in any control period (except that are transformed or destroyed domestically or by a person of another Party) in excess of the amount of conferred unexpended essential use allowances or exemptions, or in excess of the amount of unexpended critical use allowances, or in excess of the amount of unexpended Article 5 allowances as allocated under § 82.9 and § 82.11, as may be modified under § 82.12 (transfer of allowances) for that substance held by that person under the authority of this subpart at that time for that control period. Every kilogram of excess production constitutes a separate violation of this subpart.

(2) Effective January 1, 2005, production of class I, Group VI controlled substances is not subject to the prohibitions in paragraph (b)(1) of this section if it is solely for quarantine or preshipment applications as defined in this subpart, or it is solely for export to satisfy critical uses authorized by the Parties for that control period.

(c)(1) Prior to January 1, 1996, for all Groups of class I controlled substances, and prior to January 1, 2005, for class I, Group VI controlled substances, no person may produce or (except for transhipments, heels or used controlled substances) import, at any time in any control period, (except for controlled substances that are transformed or destroyed) in excess of the amount of unexpended consumption allowances held by that person under the authority of this subpart at that time for that control period. Every kilogram of excess production or importation (other than transhipments, heels or used controlled substances) constitutes a separate violation of this subpart.

(2) Effective January 1, 2003, production and import of class I, Group VI controlled substances is not subject to the prohibitions in paragraph (c)(1) of this section if it is solely for quarantine or preshipment applications as defined in this subpart.

(d) Effective January 1, 1996, for any class I, Group I, Group II, Group III, Group IV, Group V, or Group VII controlled substances, and effective January 1, 2005, for any class I, Group VI controlled substance, and effective August 18, 2003, for any class I, Group VIII controlled substance, no person may import (except for transhipments or heels), at any time in any control period, (except for controlled substances that are transformed or destroyed) in excess of the amount of unexpended essential use allowances or exemptions, or in excess of unexpended critical use allowances, for that substance held by that person under the authority of this subpart at that time for that control period. Every kilogram of excess importation (other than transhipments or heels) constitutes a separate violation of this subpart. It is a violation of this subpart to obtain unused class I controlled substances under the general laboratory exemption in excess of actual need and to recycle that material for sale into other markets.

(e) Effective January 1, 1996, no person may place an order by conferring essential-use allowances for the production of the class I controlled substance, at any time in any control period, in excess of the amount of unexpended essential-use allowances, held by that person under the authority of this subpart at that time for that control period. Effective January 1, 1996, no person may import a class I controlled substance with essential-use allowances, at any time in any control period, in excess of the amount of unexpended essential-use allowances, held by that person under the authority of this subpart at that time for that control period. No person may import or place an order for the production of a class I controlled substance with essential-use allowances, at any time in any control period, other than for the class I controlled substance(s) for which they received essential-use allowances under paragraph (u) of this section. Every kilogram of excess production ordered in excess of the unexpended essential-use allowances conferred to the producer constitutes a separate violation of this subpart. Every kilogram of excess import in excess of the unexpended essential-use allowances held at that time constitutes a separate violation of this subpart.

(f) [Reserved]

(g) Effective January 1, 1996, the U.S. total production and importation of a class I controlled substance (except Group VI) as allocated under this section for essential-use allowances and exemptions, and as obtained under § 82.9 for destruction and transformation credits, may not, at any time, in any control period until January 1, 2000, exceed the percent limitation of baseline production in appendix H of this subpart, as set forth in the Clean Air Act Amendments of 1990. No person shall cause or contribute to the U.S. exceedance of the national limit for that control period.

(h) No person may sell in the U.S. any Class I controlled substance produced explicitly for export to an Article 5 country.

(i) Effective January 1, 1995, no person may import, at any time in any control period, a heel of any class I controlled substance that is greater than 10 percent of the volume of the container in excess of the amount of unexpended consumption allowances, or unexpended destruction and transformation credits held by that person under the authority of this subpart at that time for that control period. Every kilogram of excess importation constitutes a separate violation of this subpart.

(j)(1) Effective January 1, 1995, no person may import, at any time in any control period, a used class I controlled substance, except for Group II used controlled substances shipped in aircraft halon bottles for hydrostatic testing, without having received a non-objection notice from the Administrator in accordance with § 82.13(g)(2) and (3). A person who receives a non-objection notice for the import of an individual shipment of used controlled substances may not transfer or confer the right to import and may not import any more than the exact quantity, in kilograms, of the used controlled substance cited in the non-objection notice. Every kilogram of importation of used controlled substance in excess of the quantity cited in the non-objection notice issued by the Administrator in accordance with § 82.13(g)(2) and (3) constitutes a separate violation.

(2) No person may import for purposes of destruction, at any time in any control period, a class I controlled substance for which EPA has apportioned baseline production and consumption allowances, without having submitted a certification of intent to import for destruction to the Administrator and received a non-objection notice in accordance with § 82.13(g)(5). A person issued a non-objection notice for the import of an individual shipment of class I controlled substances for destruction may not transfer or confer the right to import and may not import any more than the exact quantity (in kilograms) of the class I controlled substance stated in the non-objection notice. For imports intended to be destroyed in the United States, a person issued a non-objection notice must destroy the controlled substance within one year of the date stamped on the non-objection letter, may not transfer or confer the right to import, and may not import any more than the exact quantity (in kilograms) of the class I controlled substance stated in the non-objection notice. Every kilogram of import of class I controlled substance in excess of the quantity stated in the non-objection notice issued by the Administrator in accordance with § 82.13(g)(5) constitutes a separate violation of this subpart.

(k)(1) Prior to January 1, 1996, for all Groups of class I controlled substances, and prior to January 1, 2005, for class I, Group VI controlled substances, a person may not use production allowances to produce a quantity of a class I controlled substance unless that person holds under the authority of this subpart at the same time consumption allowances sufficient to cover that quantity of class I controlled substances nor may a person use consumption allowances to produce a quantity of class I controlled substances unless the person holds under authority of this subpart at the same time production allowances sufficient to cover that quantity of class I controlled substances. However, prior to January 1, 1996, for all class I controlled substances, and prior to January 1, 2005, for class I, Group VI controlled substances, only consumption allowances are required to import, with the exception of transhipments, heels, and used controlled substances. Effective January 1, 1996, for all Groups of class I controlled substances, except Group VI, only essential use allowances or exemptions are required to import class I controlled substances, with the exception of transhipments, heels, used controlled substances, and essential use CFCs.

(2) Notwithstanding paragraph (k)(1) of this section, effective January 1, 2003, for class I, Group VI controlled substances, consumption allowances are not required to import quantities solely for quarantine or preshipment applications as defined in this subpart.

(l) Every kilogram of a controlled substance, and every controlled product, imported or exported in contravention of this subpart constitutes a separate violation of this subpart. No person may:

(1) Import or export any quantity of a controlled substance listed in class I, Group I or Group II, in appendix A to this subpart from or to any foreign state not Party to the 1987 Montreal Protocol

unless that foreign state is complying with the 1987 Montreal Protocol (For ratification status, see: *http://ozone.unep.org/new_site/en/treaty_ratification_status.php*);

(2) Import or export any quantity of a controlled substance listed in class I, Group III, Group IV, or Group V, in appendix A to this subpart, from or to any foreign state not Party to the London Amendment, unless that foreign state is complying with the London Amendment (For ratification status, see: *http://ozone.unep.org/new_site/en/treaty_ratification_status.php*); or

(3) Import a controlled product, as noted in appendix D, annex 1 to this subpart, from any foreign state not Party to the 1987 Montreal Protocol, unless that foreign state is complying with the 1987 Montreal Protocol (For ratification status, see: *http://ozone.unep.org/new_site/en/treaty_ratification_status.php*).

(4) Import or export any quantity of a controlled substance listed in class I, Group VII, in appendix A to this subpart, from or to any foreign state not Party to the Copenhagen Amendment, unless that foreign state is complying with the Copenhagen Amendment (For ratification status, see: *http://ozone.unep.org/new_site/en/treaty_ratification_status.php*).

(5) Import or export any quantity of a controlled substance listed in class I, Group VI, in appendix A to this subpart, from or to any foreign state not Party to the Copenhagen Amendment unless that foreign state is complying with the Copenhagen Amendment (For ratification status, see: *http://ozone.unep.org/new_site/en/treaty_ratification_status.php*).

(6) Import or export any quantity of a controlled substance listed in class I, Group VIII, in appendix A to this subpart, from or to any foreign state not Party to the Beijing Amendment, unless that foreign state is complying with the Beijing Amendment (For ratification status, see: *http://ozone.unep.org/new_site/en/treaty_ratification_status.php*).

(m) Effective October 5, 1998, no person may export a controlled product to a Party listed in appendix J of this subpart in any control period after the control period in which EPA publishes a notice in the Federal Register listing that Party in appendix J of this subpart. EPA will publish a notice in the Federal Register that lists a Party in appendix J if the Party formally presents to the U.S. a government document through its embassy in the United States stating that it has established a ban on the import of controlled products and a ban on the manufacture of those same controlled products.

(n) No person may use class I controlled substances produced or imported under the essential use exemption for any purpose other than those set forth in this paragraph. Effective January 1, 1996, essential-use allowances are apportioned to a person under § 82.8(a) and (b) for the exempted production or importation of specified class I controlled substances solely for the purposes listed in paragraphs (n)(1)(i) through (iii) of this section.

(1) Essential-uses for the production or importation of controlled substances as agreed to by the Parties to the Protocol and subject to the periodic revision of the Parties are:

(i) Metered dose inhalers (MDIs) for the treatment of asthma and chronic obstructive pulmonary disease that were approved by the Food and Drug Administration before December 31, 2000.

(ii) Space Shuttle - solvents.

(iii) Essential laboratory and analytical uses (defined in appendix G of this subpart).

(2) Any person acquiring unused class I controlled substances produced or imported under the authority of essential-use allowances or the essential-use exemption granted in § 82.8 to this subpart for use in anything other than an essential-use (*i.e.*, for uses other than those specifically listed in paragraph (n)(1) of this section) is in violation of this subpart. Each kilogram of unused class I controlled substance produced or imported under the authority of essential-use allowances or the essential-use exemption and used for a non-essential use is a separate violation of this subpart. Any

person selling unused class I controlled substances produced or imported under authority of essential-use allowances or the essential-use exemption for uses other than an essential-use is in violation of this subpart. Each kilogram of unused class I controlled substances produced or imported under authority of essential-use allowances or the essential-use exemption and sold for a use other than an essential-use is a separate violation of this subpart. It is a violation of this subpart to obtain unused class I controlled substances under the exemption for laboratory and analytical uses in excess of actual need and to recycle that material for sale into other markets.

(o) [Reserved]

(p) Critical Use Exemption: With respect to class I, Group VI substances (methyl bromide):

(1) No person shall sell critical use methyl bromide without first receiving a certification from the purchaser that the quantity purchased will be sold or used solely for an approved critical use. Every kilogram of critical use methyl bromide sold without first obtaining such certification constitutes a separate violation of this subpart.

(2) For approved critical users, each action associated with each 200 kilograms of critical use methyl bromide for the following subparagraphs constitutes a separate violation of this subpart.

(i) No person shall take possession of quantities of critical use methyl bromide or acquire fumigation services using quantities of critical use methyl bromide without first completing the appropriate certification in accordance with the requirements in § 82.13.

(ii) No person who purchases critical use methyl bromide may use such quantities for a use other than the specified critical use listed in column A and the specified location of use in column B of appendix L to this subpart.

(iii) No person who purchases critical use methyl bromide produced or imported with expended critical use allowances for pre-plant uses, may use such quantities for other than the pre-plant uses as specified in column A and column B of appendix L to this subpart.

(iv) No person who purchases critical use methyl bromide produced or imported with expended critical use allowances for post-harvest uses, may use such quantities for other than the post-harvest uses as specified in column A and column B of appendix L to this subpart.

(v) No person who uses critical use methyl bromide on a specific field or structure may concurrently or subsequently use non-critical use methyl bromide on the same field or structure for the same use (as defined in column A and column B of appendix L) in the same control period, excepting methyl bromide used under the quarantine and pre-shipment exemption.

(vi) No person who purchases critical use methyl bromide during the control period shall use that methyl bromide on a field or structure for which that person has used non-critical use methyl bromide for the same use (as defined in columns A and B of appendix L) in the same control period, excepting methyl bromide used under the quarantine and pre-shipment exemption, unless, subsequent to that person's use of the non-critical use methyl bromide, that person becomes subject to a prohibition on the use of methyl bromide alternatives due to the reaching of a local township limit described in appendix L of this part, or becomes an approved critical user as a result of rulemaking.

(q) Emergency use exemption. [Reserved]

(r) No person may sell or use methyl bromide produced or imported under the quarantine and preshipment exemption for any purpose other than for quarantine applications or preshipment applications as defined in § 82.3. Each kilogram of methyl bromide produced or imported under the authority of the quarantine and preshipment exemption and sold or used for a use other than quarantine or preshipment is a separate violation of this subpart.

(s) No person may sell or distribute, or offer for sale or distribution, any class I substance that they know, or have reason to know, was imported in violation of this section, except for such actions needed to re-export the controlled substance. Every kilogram of a controlled substance imported in contravention of this paragraph (s) that is sold or distributed, or offered for sale or distribution, constitutes a separate violation of this subpart.

[60 FR 24986, May 10, 1995] Editorial Note:For Federal Register citations affecting § 82.4, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov.*

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	R2021-018
AMENDMENTS TO 35 ILL. ADM. CODE 219, ORGANIC MATERIAL EMISSION STANDARDS FOR THE METRO EAST AREA, AND 35 ILL. ADM. CODE 211, DEFINITIONS AND GENERAL PROVISIONS	)	(Rulemaking-Air)

CERTIFICATE OF SERVICE

I, the undersigned, an attorney, state that I have served the attached RULEMAKING PROPOSAL entitled "AMENDMENTS TO 35 ILL. ADM. CODE 219, ORGANIC MATERIAL EMISSION STANDARDS FOR THE METRO-EAST AREA, AND 35 ILL. ADM. CODE 211, DEFINITIONS AND GENERAL PROVISIONS" AND APPEARANCES upon the person to whom it is directed, by placing a copy in an envelope addressed to:

Office of Legal Services
Illinois Depa1tment of Natural Resources
One Natural Resources Way
Springfield, IL 62702-1271

and mailing it by first-class mail from Springfield, Illinois, with sufficient postage affixed.

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: /s/ Charles E. Matoesian
Charles E. Matoesian
Assistant Counsel
Division of Legal Counsel

DATED: October 5, 2020
1021 N. Grand Ave. East
P.O. Box 19276
Springfield, IL 62794-9276
(217) 782-5544

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	R2021-018
AMENDMENTS TO 35 ILL. ADM. CODE 219,	)	(Rulemaking-Air)
ORGANIC MATERIAL EMISSION	)	
STANDARDS FOR THE METRO EAST AREA,	)	
AND 35 ILL. ADM. CODE 211, DEFINITIONS	)	
AND GENERAL PROVISIONS	)	

CERTIFICATE OF E-MAIL SERVICE

I, the undersigned, on affirmation, state the following:

That I have served the attached RULEMAKING PROPOSAL entitled "AMENDMENTS TO 35 ILL. ADM. CODE 219, ORGANIC MATERIAL EMISSION STANDARDS FOR THE METRO-EAST AREA, AND 35 ILL. ADM. CODE 211, DEFINITIONS AND GENERAL PROVISIONS" by e-mail upon:

Illinois Pollution Control Board
Don Brown
Clerk
James R. Thompson Center
100 West Randolph St., Suite 11-500
Chicago, IL 60601
Don.Brown@illinois.gov

Division Chief of Environmental Enforcement
Office of the Attorney General
100 West Randolph St, Suite 1200
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enviro@atg.state.il.us

That my e-mail address is charles.matoesian@illinois.gov.

That the number of pages in this e-mail transmission is 254.

That the e-mail transmission took place before 5:00 p.m. on the date of October 5, 2020.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: /s/ Charles E. Matoesian
Charles E. Matoesian
Assistant Counsel

DATED: October 5, 2020

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