

**Reasonably Available Control Technology  
State Implementation Plan Revision  
2008 and 2015 Ozone National Ambient Air Quality Standards**



**Rhode Island Department of Environmental Management  
Office of Air Resources**

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*RI Air Pollution Control Regulations related to VOC and NOx CTG RACT for inclusion in the SIP*

## **Introduction**

The federal Clean Air Act (CAA) gives States the primary responsibility for achieving the National Ambient Air Quality Standards (NAAQS). The NAAQS are established by the U.S. Environmental Protection Agency (EPA) as the maximum concentrations in the atmosphere for specific air contaminants to protect public health and welfare. The principal mechanism at the state level for complying with the CAA is the State Implementation Plan (SIP). A SIP includes the regulatory programs, actions, and commitments a state will carry out to implement its responsibilities under the CAA. Once approved by the EPA, a SIP is legally enforceable under both federal and state law. This document contains Rhode Island's SIP revision for meeting the Reasonably Available Control Technology (RACT) requirements of the CAA under the 2008 and 2015 8-hour ozone NAAQS.

## **Background and Requirements**

Ground-level ozone, one of the principal precursors of "smog," is a serious air pollutant that harms human health and can also damage crops, forests, and wildlife. Ozone is generally not directly emitted to the atmosphere; rather, it is formed in the atmosphere by photochemical reactions between volatile organic compounds (VOC) and nitrogen oxides (NO<sub>x</sub>) in the presence of sunlight. NO<sub>x</sub> and VOCs, the primary ozone precursors, are emitted from many types of sources, including power plants, boilers, automobiles and the use of consumer and industrial products. VOCs are also emitted from vegetation. Because airborne VOCs and NO<sub>x</sub>, as well as ozone itself, are transported over long distances, sources emitting ozone precursors in states upwind of Rhode Island also contribute to ground level ozone levels in the State. Ozone levels in Rhode Island are generally highest on hot sunny summer days when the winds are from the west or southwest.

Exposure to elevated ozone levels causes eye, nose and throat irritation; coughing; chest pain; shortness of breath; decreased lung function; headache; and fatigue. Repeated exposures can increase susceptibility to respiratory infection and lung inflammation and can aggravate preexisting respiratory diseases, such as asthma. Long-term exposures can cause irreversible changes in the lungs, leading to chronic respiratory illnesses such as emphysema and chronic bronchitis and to premature aging of the lungs.

Children are at a particularly high risk for ozone-related health effects because they have developing lungs and are frequently active outside during the summertime when ozone levels are at their highest. Adults who work or exercise outside and people with respiratory and heart diseases are also at an increased risk. Elevated ozone levels also reduce agricultural and commercial forest yields; reduce the growth and survivability rates of tree seedlings; increase tree and plant susceptibility to disease, pests and other environmental stresses; and have long-term effects on forests and ecosystems.

On March 12, 2008, the United States Environmental Protection Agency (EPA) revised the primary and secondary NAAQS for ozone to a level of 0.075 parts per million (ppm) over an 8-hour period (73 FR 16435). On July 20, 2012, EPA designated the entire state of RI as unclassifiable/attainment for the 2008 Ozone NAAQS (77 FR 30088). EPA further lowered the

primary and secondary NAAQS for ozone to a level of 0.070 ppm over an 8-hour period on October 1, 2015 (80 FR 65291). On November 16, 2017, EPA designated Bristol, Newport and Providence counties as attainment/unclassifiable for the 2015 NAAQS (82 FR 54232). Kent and Washington counties were designated as unclassifiable/attainment on December 20, 2017.

Consequently, in order to reduce ozone concentrations in the ambient air, the CAA requires all nonattainment areas and states such as Rhode Island, that are located in the Ozone Transport Region (OTR), to apply controls on VOC and NO<sub>x</sub> emission sources to achieve emission reductions. One of the key requirements related to the implementation of the ozone NAAQS is a revision to the State Implementation Plan (SIP) demonstrating the proper application of Reasonably Available Control Technology (RACT), pursuant to Clean Air Act (CAA) Section 172(c)(1).

RACT is defined as the lowest emissions limit that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility (44 FR 53762, September 17, 1979). CAA Section 183 requires EPA to issue, and periodically update as needed, guidance that would help states meet RACT requirements. This includes the development of Control Techniques Guidelines (CTG) for controlling volatile organic compounds (VOCs) and Alternative Control Techniques (ACT) documents for controlling oxides of nitrogen (NO<sub>x</sub>) from stationary sources. CTGs presumptively define a level of control as RACT. The ACT documents do not formally define RACT, but describe available measures that are technologically, and economically feasible which states can adopt to satisfy RACT.

EPA developed its first CTGs in the 1970s, and subsequently issued new CTGs and updates for certain source categories. Due to Rhode Island's nonattainment status for both the 1979 and 1997 ozone standards, Rhode Island previously developed RACT standards for sources in the state consistent with EPA's CTGs, and EPA has approved Rhode Island's prior RACT requirements into the SIP, most recently on March 13, 2012 (77 FR 14691).

CAA Sections 182(b)(2) and 182(f) require ozone nonattainment areas classified as moderate and above to adopt RACT for sources that are subject to CTGs, and for non-CTG major sources of VOCs and NO<sub>x</sub>. CAA Section 184 further requires states such as Rhode Island that are located in the OTR to implement RACT with respect to all major sources<sup>1</sup> and all sources covered by CTGs.

Rhode Island was required to submit RACT SIP revisions for the 2008 ozone NAAQS by July 20, 2014 because it is part of the OTR. On February 3, 2017, EPA published in the Federal Register (82 FR 9158), a finding that Rhode Island had failed to submit certain SIP revisions required for the 2008 8-hour ozone NAAQS. Rhode Island is submitting the required SIP revisions at this time. In addition to the SIP elements required under the 2008 standard, Rhode Island is certifying that currently required controls also meet RACT for the 2015 ozone NAAQS in Rhode Island.

In preparation for the RACT SIP revision RI revised several Air Pollution Control Regulations and adopted one new Air Pollution Control Regulation to meet the current CTG requirements.

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<sup>1</sup> In Rhode Island, sources that have the potential to emit at least 50 tons per year of VOC or NO<sub>x</sub> are considered major sources.

These rules were filed with EPA on August 5, 2019 for incorporation into the RI SIP. The RI RACT rules along with general definitions are attached in Appendix A of this document.

### **Intent of this RACT SIP revision**

This submittal completes the SIP-related administrative responsibility for the State of Rhode Island in defining RACT for stationary sources with respect to the 2008 and 2015 ozone NAAQS. This RACT SIP revision demonstrates and/or certifies the following with respect to Rhode Island stationary sources of ozone precursors:

1. All newly required RACT controls, for both CTG and Major Sources, have been implemented in Rhode Island and have been submitted to EPA for SIP approval for applicable stationary sources of VOC and NOx emissions;
2. All previously EPA-approved RACT controls, including CTGs, as well as Single Source RACT applied to other Major Sources have been certified by the Rhode Island Air Administrator, based on EPA's guidance and standards, to represent RACT control levels under the 2008 and 2015 ozone NAAQS.
3. Negative declarations are included for CTGs for which Rhode Island has no applicable sources.

### **VOC RACT Analysis**

Rhode Island identified 45 source categories for which CTGs were developed prior to submittal of this SIP revision and for which determinations of RACT with respect to the 2008 and 2015 ozone standard were required to be included in this RACT SIP revision. Of these 45 CTG categories, 12 are for source categories for which Rhode Island has no applicable sources, and 33 have been determined to be categories for which Rhode Island has applicable sources. Table 1 lists the VOC source categories for which EPA issued CTGs and the corresponding RI DEM regulations for each of these categories including the new CTG's that EPA issued in 2006, 2007 and 2008.

For all CTG categories for which there are applicable sources in Rhode Island, existing regulations were either amended to incorporate the CTG recommended controls, or new rules were adopted. Specifically, the following rules were amended, or, in one case, a new rule adopted to meet CTG requirements:

- 250-RICR-120-005-19, "Control of Volatile Organic Compounds from Surface Coating Operations," incorporates RACT requirements in the following CTG's: "Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings (2008)," "Control Techniques Guidelines for Flat Wood Paneling Coatings (2006)," "Control Techniques Guidelines for Paper, Film, and Foil Coatings (2007)," "Control Techniques Guidelines for Metal Furniture Coating (2007)" and, "Control Techniques Guidelines for Large Appliance Coating (2007)."

Please note the revisions to Part 19 do not interfere with applicable requirements of the anti-backsliding provisions of Section 110(l) of the Clean Air Act. Although some of the proposed coating limits for specialty coatings for miscellaneous metal and plastic parts are less stringent than the current limits, most of the proposed limits are more stringent and several more coating categories are now regulated. The combination of new coating categories, more stringent limits and broader applicability means that Part 19, as amended, will be achieve greater emissions reductions.

- 250-RICR-120-05-21, “Control of Emissions from Printing Operations” incorporates RACT requirements in the following CTG’s: “Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing(2006)” and “Control Techniques Guidelines for Flexible Package Printing (2006);”
- 250-RICR-120-05-35, “Control of Volatile Organic Compounds and Volatile Hazardous Air Pollutants from Wood Product Manufacturing Operations” incorporates the requirements contained in the EPA Control Technique Guideline Document, “Control of Volatile Organic Compound Emissions from Wood Furniture Manufacturing Operations (2006);”
- 250-RICR-120-05-36 “Control of Emissions from Organic Solvent Cleaning” incorporates the requirements contained in the EPA Control Technique Guideline Document, “Control Techniques Guidelines for Industrial Cleaning Solvents (2006);”
- 250-RICR-120-05-51 “Control of VOC Emissions from Fiberglass Boat Manufacturing” incorporates the requirements contained in the EPA Control Technique Guideline Document, “Control Techniques Guidelines for Fiberglass Boat Manufacturing Materials (2008).”

Revised regulations meeting the current CTG VOC RACT requirements were submitted to EPA for approval and inclusion in the RI SIP on August 5, 2019.

### **Negative Declarations**

Table 1 also identifies all CTG categories for which there are no Rhode Island sources, and, as such, RIDEM is making a negative declaration for those CTG categories. In making this determination, RIDEM reviewed its 2017 stationary point source inventory database for facilities in these categories and consulted relevant inspection and permitting records for potential affected facilities.

### **Non-CTG Major VOC Sources**

As previously discussed, States must require RACT controls for all non-CTG major VOC sources. 250-RICR-120-05-15, “Control of Organic Solvent Emissions,” established requirements for major facilities not covered by a CTG. RACT specifications for each such facility are described in an emission control plan specific to that facility. RIDEM issued a number of single-source RACT determinations pursuant to 250-RICR-120-05-15. The single-source VOC RACT

determinations, which were approved by EPA as part of the Rhode Island SIP, are listed in Table 2 along with the date of approval and the current status of the facility. For facilities listed as operating, RIDEM has concluded that the controls specified in the single-source agreements constitute RACT under the 8-hour standard. For sources listed as permanently closed no RACT certification is required.

## **NO<sub>x</sub> RACT Analysis**

250-RICR-120-05-27, “Control of Nitrogen Oxide Emissions,” Part 27, requires RACT for stationary sources with the potential to emit 50 or more tons per year of NO<sub>x</sub>. The regulation includes specific emissions limits for utility boilers, industrial-commercial-institutional boilers and internal combustion engines and requires all applicable sources to submit RACT plans to RI DEM which, after review, are incorporated into an enforceable agreement. The enforceable agreement is then submitted to the EPA as a single-source RACT determination. Single-source NO<sub>x</sub> RACT determinations issued by RI DEM pursuant to Part 27 and submitted to the EPA as source-specific SIP revisions are listed in Table 2. EPA most recently approved Part 27<sup>2</sup> into the RI SIP July 22, 2016 (81 FR 47708).

In addition to Part 27, individual sources in RI may be subject to more stringent technology control measures such as lowest available emissions rate (LAER) or best available control technology (BACT) under Rhode Island’s new source review rule, 250-RICR-120-05-9, “Air Pollution Control Permits” (Part 9). For minor sources, Part 9 requires a detailed administrative and technical review of NO<sub>x</sub> sources that emit far below the RACT threshold of the potential to emit 50 or more tons per year of NO<sub>x</sub>. Specifically, Part 9 applicability for minor sources reads in part as follows:

### **9.7.1 Applicability**

*A. A minor source permit is required for the construction, installation or modification of the following:*

- 1. Any fuel burning device designed to burn:
  - a. Residual oil or solid fossil fuels having a heat input capacity of one million Btu or more per hour;*
  - b. All other liquid fuels having a heat input capacity of five (5) million Btu or more per hour;*
  - c. Gaseous fuel having a heat input capacity of ten (10) million Btu or more per hour; or*
  - d. Alternative fuels, including but not limited to, wood chips, hazardous wastes or waste oil having a heat input capacity of one (1) million Btu or more per hour.**
- 2. Notwithstanding § 9.7.1(A)(1) of this Part,
  - a. any emergency generator or distributed generator with a heat input capacity of 350,000 BTUs or more per hour or, in the case of internal combustion engines, is 50 HP or larger; and,**

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<sup>2</sup> Recodified rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.

*b. the date of initial startup is on or after November 15, 2007. Initial startup shall mean the setting in operation of the emergency generator or distributed generator for the first time for any purpose.*

In order for a minor source permit to be approved under Part 9, BACT is applied for each pollutant the source has the potential to emit. Unlike neighboring states, RI applies BACT to all minor source permit approvals. As BACT is more stringent than RACT, RI is confident that all minor sources of NO<sub>x</sub> are controlled at a level that exceeds RACT.

Part 9 also subjects major sources to LAER for each pollutant that has the potential to meet the major source threshold. RI major source requirements are much more stringent than RACT.

RI DEM certifies that 250-RICR-120-05-27, Part 9 permitting requirements, and the single-source NO<sub>x</sub> RACT SIP revisions listed in Table 2 are consistent with RACT requirements for the 8-hour ozone NAAQS.

### **Conclusion**

RIDEM certifies that Rhode Island's NO<sub>x</sub> and VOC RACT regulations, single source SIP revisions and permitting requirements satisfy RACT under the 2008 and 2015 8-hour ozone NAAQS. Rhode Island's RACT rules meet federal requirements as RIDEM developed RACT regulations for each applicable source category listed in EPA's Control Techniques Guidelines (CTGs) for which the state has a potential source. The regulatory requirements in the current RI RACT rules are consistent with the CTGs and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.



**Table 1 RIDEM 2008/2015 8-Hour Ozone Standard RACT Certification**

EPA Guidance	Corresponding RIDEM Rule	Most Recent SIP Approval of RI Rule	Date RI Rule Last Amended (effective date)	RI DEM Certification: 2008/2015 8-hour Ozone Standard RACT
<b>Pre-1990 CTGs</b>				
1. Stage I Vapor Control Systems - Gasoline Service Stations (November 1975) and Hydrocarbon Control Strategies for Gasoline Marketing Operations (April 1978, EPA 450/3-78-017)	Part 11, “Petroleum Liquids Marketing and Storage”	6/9/2015, 80 FR 32469 (12/25/2013 version of rule)  Recodified rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.	1/10/2019 (Recodification) <sup>3</sup>	Regulatory requirements are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.

<sup>3</sup> In 2016, the state revised the Administrative Procedures Act to require that every state regulation be rewritten into the new Rhode Island Code of Regulations (RICR) format by December 31, 2018 or it will no longer be enforceable. In order to meet this requirement, all Air Pollution Control Regulation in RI were updated to the required RICR format.

EPA Guidance	Corresponding RIDEM Rule	Most Recent SIP Approval of RI Rule	Date RI Rule Last Amended (effective date)	RI DEM Certification: 2008/2015 8-hour Ozone Standard RACT
<p>2. Control of Volatile Organic Emissions from Existing Stationary Sources, Volume I: Surface Coating Operations (November 1976, EPA-450-2-76-028) and Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles and Light Duty Trucks (May 1977, EPA-450/2-77-008)</p> <p>EPA updated the CTG for Paper, Film and Foil Coatings in September 2007 (see No. 34 below for update). Rhode Island has amended Part 19 to address the 2007 CTG.</p>	<p>Part 19, “Control of Volatile Organic Compounds from Coating Operations”</p>	<p>7/22/2016, 81 FR 47708 (7/19/2007 version of rule)</p> <p>Amended rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.</p>	<p>8/14/2019 (Recodified and updated to meet current CTG RACT)</p>	<p>Amended rule contains regulatory requirements that are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.</p>
<p>3. Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds (1977)</p>	<p>Negative Declaration</p>			<p>There are no applicable sources in RI.</p>

EPA Guidance	Corresponding RIDEM Rule	Most Recent SIP Approval of RI Rule	Date RI Rule Last Amended (effective date)	RI DEM Certification: 2008/2015 8-hour Ozone Standard RACT
<p>4. Control of Volatile Organic Emissions from Solvent Metal Cleaning (November 1977, EPA-450/2-77-022)</p> <p>EPA issued a related CTG in September 2006 for Industrial Cleaning Solvents (see No. 31 below for update). RI has amended Part 36 to address the 2006 CTG.</p>	<p>Regulation 36, “Control of Emissions from Organic Solvent Cleaning” (superseded Regulation 18 in 1996)</p>	<p>3/13/2012, 77 FR 14691 (1/9/2007 version of rule)</p> <p>Amended rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.</p>	<p>1/13/2019 (Recodified and updated to meet current CTG RACT)</p>	<p>Amended rule contains regulatory requirements that are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.</p>
<p>5. Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals (December 1977, EPA-450/2-77-026)</p>	<p>Part 11, “Petroleum Liquids Marketing and Storage”</p>	<p>6/9/2015, 80 FR 32469 (12/25/2013 version of rule)</p> <p>Recodified rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.</p>	<p>1/10/2019 (Recodification)</p>	<p>Regulatory requirements are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.</p>

<b>EPA Guidance</b>	<b>Corresponding RIDEM Rule</b>	<b>Most Recent SIP Approval of RI Rule</b>	<b>Date RI Rule Last Amended (effective date)</b>	<b>RI DEM Certification: 2008/2015 8-hour Ozone Standard RACT</b>
<p>6. Control of Volatile Organic Emissions from Existing Stationary Sources, Volume III: Surface Coating of Metal Furniture (December 1977, EPA-450/2-77-032)</p> <p>EPA updated this CTG in September 2007 (see No. 35 below for update). Rhode Island has amended Part 19 to address the 2007 CTG.</p>	<p>Part 19, “Control of Volatile Organic Compounds from Coating Operations”</p>	<p>7/22/2016, 81 FR 47708 (7/19/2007 version of rule)</p> <p>Amended rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.</p>	<p>8/14/2019 (Recodified and updated to meet current CTG RACT)</p>	<p>Amended rule contains regulatory requirements that are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS</p>

EPA Guidance	Corresponding RIDEM Rule	Most Recent SIP Approval of RI Rule	Date RI Rule Last Amended (effective date)	RI DEM Certification: 2008/2015 8-hour Ozone Standard RACT
<p>7. Control of Volatile Organic Emissions from Existing Stationary Sources, Volume IV: Surface Coating for Insulation of Magnet Wire (December 1977, EPA-450/2-77-033)</p>	<p>Part 19, “Control of Volatile Organic Compounds from Coating Operations”</p>	<p>7/22/2016, 81 FR 47708 (7/19/2007 version of rule)</p> <p>Recodified rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.</p>	<p>8/14/2019</p>	<p>Regulatory requirements are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.</p>
<p>8. Control of Volatile Organic Emissions from Existing Stationary Sources, Volume V: Surface Coating of Large Appliances (December 1977, EPA-450/2-77-034)</p> <p>EPA updated this CTG in September 2007 (see No. 36 below for update). Rhode Island has amended Part 19 to address the 2007 CTG.</p>	<p>Part 19, “Control of Volatile Organic Compounds from Coating Operations”</p>	<p>7/22/2016, 81 FR 47708 (7/19/2007 version of rule)</p> <p>Amended rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.</p>	<p>8/14/2019 (Recodified and updated to meet current CTG RACT)</p>	<p>Amended rule contains regulatory requirements that are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS</p>

EPA Guidance	Corresponding RIDEM Rule	Most Recent SIP Approval of RI Rule	Date RI Rule Last Amended (effective date)	RI DEM Certification: 2008/2015 8-hour Ozone Standard RACT
9. Control of Volatile Organic Emissions from Bulk Gasoline Plants (December 1977, EPA-450/2-77-035)	Part 11, "Petroleum Liquids Marketing and Storage"	6/9/2015, 80 FR 32469 (12/25/2013 version of rule)  Recodified rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.	1/10/2019 (Recodification)	Regulatory requirements are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.
10. Control of Volatile Organic Emissions from Storage of Petroleum Liquids in Fixed-Roof Tanks (December 1977, EPA-450/2-77-036)	Part 11, "Petroleum Liquids Marketing and Storage"	6/9/2015, 80 FR 32469 (12/25/2013 version of rule)  Recodified rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.	1/10/2019 (Recodification)	Regulatory requirements are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.

EPA Guidance	Corresponding RIDEM Rule	Most Recent SIP Approval of RI Rule	Date RI Rule Last Amended (effective date)	RI DEM Certification: 2008/2015 8-hour Ozone Standard RACT
<p>11. Control of Volatile Organic Compounds from Use of Cutback Asphalt (December 1977, EPA-450/2-77-037)</p>	<p>Part 25, “Control of VOC Emissions from Cutback and Emulsified Asphalt”</p>	<p>03/13/2012, 77 FR 14691 (7/19/2007 version of the rule)</p> <p>Recodified rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.</p>	<p>03/13/12 (Recodification only) Rule will be noticed for Public Comment with the 2008/2015 RACT SIP</p>	<p>Current regulatory requirements are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS. No changes were made to the rule. Reformat only.</p>
<p>12. Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VI: Surface Coating of Miscellaneous Metal Parts and Products (June 1978, EPA-450/2-78-015)</p> <p>EPA updated this CTG in September 2008 (see No. 38 below for update) to include revised limits for coating of metal parts and products and new limits for coating of plastic parts and products. Rhode Island has made amendments Part 19 to address the requirements of the 2008 CTG.</p>	<p>Part 19, “Control of Volatile Organic Compounds from Coating Operations”</p>	<p>7/22/2016, 81 FR 47708 (7/19/2007 version of rule)</p> <p>Amended rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.</p>	<p>8/15/2019 (Recodified and updated to meet current CTG RACT)</p>	<p>Amended rule contains regulatory requirements that are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.</p>

EPA Guidance	Corresponding RIDEM Rule	Most Recent SIP Approval of RI Rule	Date RI Rule Last Amended (effective date)	RI DEM Certification: 2008/2015 8-hour Ozone Standard RACT
<p>13. Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VII: Factory Surface Coating of Flat Wood Paneling (June 1978, EPA-450/2-78-032)</p> <p>EPA updated this CTG in September 2006. Rhode Island has made amendments to Part 19 to address the requirements of the 2006 CTG as noted under listing No.30 below.</p>	<p>Part 19, “Control of Volatile Organic Compounds from Coating Operations”</p>	<p>7/22/2016, 81 FR 47708 (7/19/2007 version of rule)</p> <p>Amended rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.</p>	<p>8/14/2019 (Recodified and updated to meet current CTG RACT)</p>	<p>Amended rule contains regulatory requirements that are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.</p>
<p>14. Leaks from Petroleum Refinery Equipment (1978)</p>	<p>Negative Declaration</p>		<p>.</p>	<p>There are no applicable sources in RI</p>
<p>15. Manufacture of Synthetic Pharmaceutical Product (1978)</p>	<p>Part 26, “Control of Organic Solvent Emissions from Manufacture of Synthesized Pharmaceutical Products”</p>	<p>7/22/2016, 81 FR 47708 (7/19/2007) version of rule)</p> <p>Recodified rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.</p>	<p>9/5/2018 (Recodification)</p>	<p>Regulatory requirements are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.</p>



EPA Guidance	Corresponding RIDEM Rule	Most Recent SIP Approval of RI Rule	Date RI Rule Last Amended (effective date)	RI DEM Certification: 2008/2015 8-hour Ozone Standard RACT
16. Manufacture of Pneumatic Rubber Tires (1978)	Negative Declaration			There are no applicable sources in RI
17. Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VIII: Graphic Arts - Rotogravure and Flexography (December 1978, EPA-450/2-78-033)	Part 21, "Control of Volatile Organic Compound Emissions from Printing Operations"	7/22/16, 81 FR 47708 (7/19/2007 version of rule)  Recodified rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.	1/10/2019 (Recodified and updated to meet current CTG RACT)	Regulatory requirements are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.
18. Control of Volatile Organic Emissions from Petroleum Liquid Storage in External Floating Roof Tanks (December 1978, EPA-450/2-78-047)	Part 11, "Petroleum Liquids Marketing and Storage"	6/9/2015, 80 FR 32469 (12/25/2013 version of rule)  Recodified rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.	1/10/2019 (Recodification)	Regulatory requirements are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.
19. Control of Volatile Organic Emissions from Perchloroethylene Dry Cleaning Systems (December 1978, EPA450/2-78-050)	Part 23, "Control of Perchloroethylene Emissions from Dry Cleaning Operations"	N/A	12/24/2018	No certification required. Perchloroethylene has been delisted as a VOC.

EPA Guidance	Corresponding RIDEM Rule	Most Recent SIP Approval of RI Rule	Date RI Rule Last Amended (effective date)	RI DEM Certification: 2008/2015 8-hour Ozone Standard RACT
20. Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems (December 1978, EPA-450/2-78-051)	Part 11, "Petroleum Liquids Marketing and Storage"	6/9/2015, 80 FR 32469 (12/25/2013 version of rule)  Recodified rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.	1/10/2019 (Recodification)	Regulatory requirements are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.
21. Control of Volatile Organic Compound Emissions from Large Petroleum Dry Cleaners (September 1982, EPA450/3-82-009)	Negative Declaration			There are no applicable sources in RI
22. Control of Volatile Organic Compound Emissions from Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins (November 1983, EPA-450/3-83-008)	Negative Declaration			There are no applicable sources in RI

EPA Guidance	Corresponding RIDEM Rule	Most Recent SIP Approval of RI Rule	Date RI Rule Last Amended (effective date)	RI DEM Certification: 2008/2015 8-hour Ozone Standard RACT
23. Control of Volatile Organic Compound Equipment Leaks from Natural Gas/Gasoline Processing Plants (December 1983, EPA-450/2-83-007)	Negative Declaration			There are no applicable sources in RI
24. Control of Volatile Organic Compound Leaks from Synthetic Organic Chemical and Polymer Manufacturing Equipment (March 1984, EPA-450/3-83-006)	Negative Declaration	12/2/95, 64 FR 67495 (submitted 4/5/95)		There still are no applicable sources in RI
25. Control of Volatile Organic Compound Emissions from Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry (December 1984, EPA-450/3-84-015)	Negative Declaration	12/2/95, 64 FR 67495 (submitted 4/5/95)		There still are no applicable sources in RI
<b>CTG's from the 1990's</b>				

EPA Guidance	Corresponding RIDEM Rule	Most Recent SIP Approval of RI Rule	Date RI Rule Last Amended (effective date)	RI DEM Certification: 2008/2015 8-hour Ozone Standard RACT
26. Control of Volatile Organic Compound Emissions from Reactor Processes and Distillation Operations Processes in the Synthetic Organic Chemical Manufacturing Industry (August 1993, EPA-450/4-91-031)	Negative Declaration	12/2/95, 64 FR 67495 (submitted 4/5/95)		There still are no applicable sources in RI
27. Control of Volatile Organic Compound Emissions from Wood Furniture Manufacturing Operations (April 1996, EPA-453/R-96-007)	Part 35, "Control of VOCs and Volatile Hazardous Air Pollutants from Wood Products Manufacturing Operations"	7/22/2016, 81 FR 47708 (7/19/2007 version of regulation)  Recodified rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.	1/13/2019 (Recodification)	Regulatory requirements are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.

EPA Guidance	Corresponding RIDEM Rule	Most Recent SIP Approval of RI Rule	Date RI Rule Last Amended (effective date)	RI DEM Certification: 2008/2015 8-hour Ozone Standard RACT
28. Control Techniques Guidelines for Shipbuilding and Ship Repair Operations (Surface Coating) in August 1996 (Based on Alternative Control Techniques Document: Surface Coating Operations at Shipbuilding and Ship Repair Facilities - April 1994, EPA 453/R-94-032)	Permits issued pursuant to Part 9, "Air Pollution Control Permits"	10/24/2013, 78 FR 63383	1/31/2011	Currently 2 applicable sources Senesco and General Dynamics, both subject to federally enforceable permit limits consistent with CTG-Senesco: Approval Nos.1991-93, General Dynamics: Approval 1882 and Title V Permit RI 32-14.
29. Control of Volatile Organic Compound Emissions from Coating Operations at Aerospace Manufacturing and Rework Operations (December 1997, EPA-453/R-97-004)	Negative Declaration	7/10/00, 65 FR 42290 (submitted 3/28/00)		There are still are no applicable sources in RI.
<b>CTG's 2000 and after</b>				

EPA Guidance	Corresponding RIDEM Rule	Most Recent SIP Approval of RI Rule	Date RI Rule Last Amended (effective date)	RI DEM Certification: 2008/2015 8-hour Ozone Standard RACT
<p>30. Control Techniques Guidelines for Flat Wood Paneling Coatings (September 2006, EPA 453/R-06-004). This CTG is listed separately from the original 1978 CTG listed in No. 13 above.</p>	<p>Part 19, “Control of Volatile Organic Compounds from Surface Coating Operations”</p>	<p>7/22/2016, 81 FR 47708 (7/19/2007 version of rule)</p> <p>Amended rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.</p>	<p>8/14/2019 (Recodified and updated to meet current CTG RACT)</p>	<p>Amended rule contains regulatory requirements that are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.</p>
<p>31. Control Techniques Guidelines: Industrial Cleaning Solvents (September 2006, EPA 453/R-06-001). This CTG is listed separately from the original 1978 CTG for the similar source category No. 4 above.</p>	<p>Part 36, “Control of Emissions from Organic Solvent Cleaning.”</p>	<p>3/13/2012, 77 FR 14691 (1/9/2007 version of rule)</p> <p>Amended rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.</p>	<p>1/13/2019 (Recodified and updated to meet current CTG RACT)</p>	<p>Amended rule contains regulatory requirements that are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.</p>
<p>32. Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing (September 2006, EPA-453/R-06-002)</p>	<p>Part 21, “Control of Volatile Organic Compound Emissions from Printing Operations”</p>	<p>7/22/16, 81 FR 47708 (7/19/2007 version of rule)</p> <p>Amended rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval</p>	<p>1/10/2019 (Recodified and updated to meet current CTG RACT)</p>	<p>Amended rule contains regulatory requirements that are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.</p>

EPA Guidance	Corresponding RIDEM Rule	Most Recent SIP Approval of RI Rule	Date RI Rule Last Amended (effective date)	RI DEM Certification: 2008/2015 8-hour Ozone Standard RACT
33. Control Techniques Guidelines for Flexible Package Printing (September 2006, EPA 453/R-06-003)	Part 21, “Control of Volatile Organic Compound Emissions from Printing Operations”	7/22/16, 81 FR 47708 (7/19/2007 version of rule)  Amended rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval	1/10/2019  (Recodified and updated to meet current CTG RACT)	Amended rule contains regulatory requirements that are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.
34. Control Techniques Guidelines for Paper, Film, and Foil Coatings (September 2007, EPA 453/R-07-003)  Note: This CTG is an update to the November 1976 CTG listed in No. 2 above.	Part 19, “Control of Volatile Organic Compounds from Surface Coating Operations”	7/22/2016, 81 FR 47708 (7/19/2007 version of rule)  Amended rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.	8/14/2019  (Recodified and updated to meet current CTG RACT)	Amended rule contains regulatory requirements that are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.
35. Control Techniques Guidelines for Metal Furniture Coatings (September 2007, EPA 453/R-07-005)  This CTG is an update of the December 1977 CTG listed in No.9 above.	Part 19, “Control of Volatile Organic Compounds from Surface Coating Operations”	7/22/2016, 81 FR 47708 (7/19/2007 version of rule)  Amended rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.	8/14/2019  (Recodified and updated to meet current CTG RACT)	Amended rule contains regulatory requirements that are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.

EPA Guidance	Corresponding RIDEM Rule	Most Recent SIP Approval of RI Rule	Date RI Rule Last Amended (effective date)	RI DEM Certification: 2008/2015 8-hour Ozone Standard RACT
<p>36. Control Techniques Guidelines for Large Appliance Coatings (September 2007, EPA 453/R-07-004) This CTG is an update of the December 1977 CTG listed in No.8 above.</p>	<p>Part 19, “Control of Volatile Organic Compounds from Surface Coating Operations”</p>	<p>7/22/2016, 81 FR 47708 (7/19/2007 version of rule)  Amended rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.</p>	<p>8/14/2019 (Recodified and updated to meet current CTG RACT)</p>	<p>Amended rule contains regulatory requirements that are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.</p>
<p>37. Control Techniques Guidelines for Miscellaneous Industrial Adhesives CTG (September 2008, EPA 453/R-08- 005).</p>	<p>Part 44, “Control of VOC from Adhesives and Sealants”</p>	<p>7/23/2015, 80 FR 43628 (6/4/2009 version of rule)  Recodified rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.</p>	<p>1/13/2019 (Recodification)</p>	<p>Regulatory requirements are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.</p>



EPA Guidance	Corresponding RIDEM Rule	Most Recent SIP Approval of RI Rule	Date RI Rule Last Amended (effective date)	RI DEM Certification: 2008/2015 8-hour Ozone Standard RACT
<p>38. Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings CTG (September 2008, EPA 453/R-08-003).</p> <p>This CTG is an update of the original 1978 CTG in No. 12 above.</p>	<p>Part 19 “Control of Volatile Organic Compounds from Surface Coating Operations”</p>	<p>7/22/2016, 81 FR 47708 (7/19/2007 version of rule)</p> <p>Amended rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.</p>	<p>8/14/2019 (Recodified and updated to meet current CTG RACT)</p>	<p>Amended rule contains regulatory requirements that are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.</p>
<p>39. Control Techniques Guidelines for Auto and Light Duty Truck Assembly Coatings (September 2008, EPA 453/R-08-006)</p>	<p>Negative Declaration</p>			
<p>40. Control Techniques Guidelines for Fiberglass Boat Manufacturing Materials (September 2008, EPA 453/R-08- 004)</p>	<p>Part 51, “Control of Volatile Organic Compound Emissions from Fiberglass Boat Manufacturing”</p>	<p>Submitted to EPA as a SIP revision 8/5/2019. Pending approval.</p>	<p>8/7/19</p>	<p>Adopted rule contains regulatory requirements that are consistent with the CTG and represent RACT under the 2008/2015 8-Hour Ozone NAAQS.</p>
<p>41. Control Techniques Guidelines for Oil and Gas Sector (October 2016, EPA 453/B-16-001)</p>	<p>Negative Declaration</p>			

EPA Guidance	Corresponding RIDEM Rule	Most Recent SIP Approval of RI Rule	Date RI Rule Last Amended (effective date)	RI DEM Certification: 2008/2015 8-hour Ozone Standard RACT
<p><b>NO<sub>x</sub> RACT Categories</b></p> <p>EPA’s NO<sub>x</sub> Achievable Control Technology (ACT) documents are listed below only to illustrate NO<sub>x</sub> RACT source categories. ACTs do not establish presumptive levels of control; therefore, RI DEM is not required to certify that RACT is consistent with the ACTs.</p>	<p>Part 27, “Control of Nitrogen Oxide Emissions,” applies to all sources with a potential to emit <math>\geq 50</math> tons per year of NO<sub>x</sub>, with certain exceptions. Applicability to an individual unit at a source is based on exceedance of a minimum capacity rating.</p>	<p>7/22/2016, 81 FR 47708 (1/9/2007 version of regulation)</p> <p>Recodified rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.</p>	<p>12/26/2018 (Recodification)</p>	
<p>1. Nitric and Adipic Acid Plants (1991)</p>	<p>Negative Declaration</p>			<p>There are no sources in RI</p>

EPA Guidance	Corresponding RIDEM Rule	Most Recent SIP Approval of RI Rule	Date RI Rule Last Amended (effective date)	RI DEM Certification: 2008/2015 8-hour Ozone Standard RACT
2. Combustion Turbines (1993)	Part 27, "Control of Nitrogen Oxide Emissions"	7/22/2016, 81 FR 47708 (1/9/2007 version of regulation)  Recodified rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.	12/26/2018 (Recodification)	Current regulation meets 8-hour RACT
3. Process Heaters (1993)	Part 27, "Control of Nitrogen Oxide Emissions"	7/22/2016, 81 FR 47708 (1/9/2007 version of regulation)  Recodified rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.	12/26/2018 (Recodification)	Current regulation meets 8-hour RACT

EPA Guidance	Corresponding RIDEM Rule	Most Recent SIP Approval of RI Rule	Date RI Rule Last Amended (effective date)	RI DEM Certification: 2008/2015 8-hour Ozone Standard RACT
4. Internal Combustion Engines (1993)	Part 27, "Control of Nitrogen Oxide Emissions"	7/22/2016, 81 FR 47708 (1/9/2007 version of regulation)	12/26/2018 (Recodification)	Current regulation meets 8-hour RACT
5. Utility Boilers (1994)	Part 27, "Control of Nitrogen Oxide Emissions"	7/22/2016, 81 FR 47708 (1/9/2007 version of regulation)  Recodified rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.	12/26/2018 (Recodification)	Current regulations meet 8-hour RACT.
6. Cement Manufacturing (1994, updated 2000)	Negative Declaration			There are no sources in RI.
7. ICI Boilers (1994)	Part 27, "Control of Nitrogen Oxide Emissions"	7/22/2016, 81 FR 47708 (1/9/2007 version of regulation)  Recodified rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.	12/26/2018 (Recodification)	Current regulation meets 8-hour RACT

EPA Guidance	Corresponding RIDEM Rule	Most Recent SIP Approval of RI Rule	Date RI Rule Last Amended (effective date)	RI DEM Certification: 2008/2015 8-hour Ozone Standard RACT
8. Glass Manufacturing (1994)	Part 27, "Control of Nitrogen Oxide Emissions"	7/22/2016, 81 FR 47708 (1/9/2007 version of regulation)  Recodified rule submitted to EPA for inclusion in the RI SIP 8/5/2019. Pending approval.	12/26/2018 (Recodification)	Current regulation meets 8-hour RACT.  Note: There are currently no remaining sources in RI.
9. Iron and Steel (1994)	Negative Declaration			There are no sources in RI.
10. Municipal Waste Combustors	Negative Declaration			There are no sources in RI.

## Table 2 RIDEM Single Source 8-Hour Ozone Standard Certification

Single Source VOC RACT determinations were made for major VOC sources not covered by a CTG pursuant to APC Part 15.

Single Source NOx RACT determinations were made for major NOx sources pursuant to APC Part 27.

<b>FACILITY</b>	<b>EPA Approval of Single-Source SIP Revision</b>	<b>Current Facility Status</b>	<b>Major for VOC or NOx?</b>	<b>Certification of 8-hour RACT</b>	<b>Comments</b>
Stanley Bostitch, Bostitch Division of Textron	12/11/1986, 51 FR 44604	Permanently Closed	VOC	Permanently Closed	
Keene Corp (Arlon)	8/31/87, 52 FR 32793	Permanently Closed	VOC	Permanently Closed	
Tech Industries	3/10/89, 54 FR 10145	Permanently Closed	VOC	Permanently Closed	
University of Rhode Island	9/20/97, 62FR 46202	Open	NOx	Current requirements meet 8-hour RACT.	Updated requirements in Title V permit RI-13-06
Providence Metalizing	9/6/90, 55 FR 36635	Open	VOC	Current requirements meet 8-hour RACT.	Updated requirements in Title V permit RI-47-07
Tillotson-Pearson (now Pearson Composites)	8/31/90, 55 FR 35623	Permanently Closed	VOC	Permanently Closed	
Rhode Island Hospital	9/20/97, 62 FR 46202	Open	NOx	Current requirements meet 8-hour RACT	Updated requirements in Title V permit RI-02-09
Osram Sylvania	9/20/97, 62 FR 46202	Permanently Closed	NOx	Permanently Closed	
Algonquin Gas Transmission Co.	9/20/97, 62 FR 46202	Open	NOx	Current requirements meet 8-hour RACT	Updated requirements in Title V permit RI-08-11

Bradford Dyeing Assoc.	9/20/97, 62 FR 46202	Permanently Closed	NOx	Permanently Closed	
Hoechst Celanese Corp. (now Clariant)	9/20/97, 62 FR 46202	Permanently Closed	NOx	Permanently Closed	
Naval Station Newport (Naval Education and Training Center)	9/20/97, 62 FR 46202	Open	NOx	Current requirements meet 8-hour RACT.	Updated requirements in Title V permit RI-25-07
Rhode Island Economic Development	6/02/99, 64 FR 29567	Permanently Closed	NOx	Permanently Closed	
Cranston Print Works	12/02/99, 64 FR 67495	Permanently Closed	VOC	Permanently Closed	
CCL Custom Mfg.	12/02/99, 64 FR 67495	Permanently Closed	VOC	Permanently Closed	
Victory Finishing Technologies	12/02/99, 64 FR 67495	Permanently Closed	VOC	Permanently Closed	
Quality Spray and Stenciling	12/02/99, 64 FR 67495	Open	VOC	Current requirements meet 8-hour RACT.	Updated requirements in Title V permit when issued
Guild Music	12/02/99, 64 FR 67495	Permanently Closed	VOC	Permanently Closed	
US Watercraft, LLC in Warren, Rhode Island	9/21/2017, 82 FR 44103	Permanently Closed	VOC	Permanently Closed	

## **Appendix A**

RI Air Pollution Control Regulations related to VOC and NO<sub>x</sub> CTG RACT for inclusion in the  
SIP



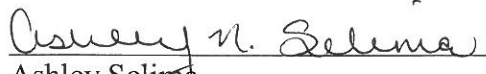


Annexed is a true copy of an original document held by the Administrative Records Office in the Department of State.

**Rhode Island Department of Environmental Management**  
*Air Resources*

**Air Pollution Control Rules and Regulations**

**Filed with the Office of the Secretary of State: February 9, 2018**  
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Ashley Selima  
State Archivist  
and Public Records Administrator

09/12/2019  
Date

By the Office of the Secretary of State, Administrative Records.



250-RICR-120-05-0

## TITLE 250 - DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

### CHAPTER 120 - AIR RESOURCES

#### SUBCHAPTER 05 - AIR POLLUTION CONTROL

##### PART 0 - General Definitions Regulation

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#### 0.1 Purpose

The purpose of this regulation is to provide a consistent set of definitions and abbreviations for terms used in more than one of the Rhode Island Air Pollution Control Regulations.

#### 0.2 Authority

These regulations are authorized pursuant to R.I. Gen. Laws § 42-17.1-2(19) and R.I. Gen. Laws Chapter 23-23, and have been promulgated pursuant to the procedures set forth in the R.I. Administrative Procedures Act, R.I. Gen. Laws Chapter 42-35.

#### 0.3 Application

The terms and provisions of this regulation shall be liberally construed to permit the Department to effectuate the purposes of state laws, goals and policies.

#### 0.4 Severability

If any provision of this regulation or the application thereof to any person or circumstance, is held invalid by a court of competent jurisdiction, the validity of the remainder of the regulation shall not be affected thereby.

#### 0.5 Definitions

A. Unless otherwise expressly defined by an individual Part of this Subchapter, the terms, definitions and unit of measure abbreviations contained herein shall be generally applicable to all Parts of this Subchapter adopted or amended at the same time as or after the adoption of these definitions.

1. "Act" or "Clean Air Act" or "CAA" means the Federal Clean Air Act, as amended 42 U.S.C. § 7401 *et seq.*
2. "Actual heat input" means the gross heat release potential based upon the actual BTU content of the fossil fuel being burned and the rate at which it is burned.

3. "Administrator" means the Administrator of the United States Environmental Protection Agency or the Administrator's duly authorized representative.
4. "Aerodynamic downwash" means the rapid descent of a plume to ground level with little dilution and dispersion due to alteration of background air flow characteristics caused by the presence of buildings or other obstacles in the vicinity of the emission point.
5. "Air contaminant" means soot, cinders, ashes, any dust, fumes, gas, mist, smoke, vapor, odor, toxic or radioactive material, particulate matter, or any combination of these.
6. "Air pollution" means the presence in the outdoor atmosphere of one or more air contaminants in sufficient quantities which, either alone or in connection with other emissions, by reason of their concentration and duration, may be injurious to human, plant or animal life, or cause damage to property or which unreasonably interferes with the enjoyment of life and property.
7. "Air pollution control system" means a system, device or equipment designed and installed primarily for the purpose of reducing or eliminating the emission of air contaminants to the atmosphere.
8. "Best available control technology" or "BACT" means an emissions limitation (including a visible emissions standard) based on the maximum degree of reduction for each air pollutant which would be emitted from any proposed stationary source or modification which the Director, on a case-by-case basis, taking into account energy, environmental and economic impacts and other costs, determines is achievable for such stationary source or modification through application of production processes or available methods, systems and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of such pollutant. In no event shall application of best available control technology result in emissions of any pollutant which would exceed the emissions allowed by any applicable state or federal air pollution control rule or regulation. If the Director determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of air emissions standards infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement of best available control technology. Such standard shall to the degree possible set forth the emission reduction achievable by implementation of such design, equipment, work practice or operation and shall provide for compliance by means which achieve equivalent results.

9. "Biodiesel" means a fuel for diesel engines derived from natural oils, such as soybean oils, and which meets the American Society for Testing and Materials specifications of ASTM D 6751 and is registered with the US EPA as a fuel and a fuel additive under § 211(b) of the Clean Air Act.
10. "C.F.R." means the Code of Federal Regulations.
11. "Cold cleaning" means an organic solvent cleaning process which cleans and removes contaminants or water from surfaces by spraying, brushing, flushing, immersing, or drying parts. Cleaning machines that use heated, non-boiling solvent to clean the parts are classified as cold cleaning machines. Wipe cleaning is not included in this definition.
12. "Department" means the Rhode Island Department of Environmental Management.
13. "Director" means the Director of the Rhode Island Department of Environmental Management or any subordinate or subordinates to whom he or she has delegated the powers and duties vested in him or her by R.I. Gen. Laws § 23-23-5.
14. "Distillate oil" means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-78, "Standard Specification for Fuel Oils".
15. "Division" means the Rhode Island Department of Environmental Management's Office of Air Resources or its predecessor agencies, the Division of Air Resources and the Division of Air and Hazardous Materials.
16. "Emissions unit" means any part of a stationary source which emits or would have the potential to emit any air pollutant (including fugitive emissions). This term is not meant to alter or affect the definition of the term "unit" for purposes of Title IV of the Act.
17. "Enforceable document" means a major or minor source permit issued pursuant to the requirements of Air Pollution Control Regulation No. 9, an operating permit or emissions cap issued pursuant to the requirements of "Air Pollution Control Regulation No. 29 - Operating Permits", an air toxics operating permit issued pursuant to the requirements of "Air Pollution Control Regulation No. 22 - Air Toxics", a consent agreement or an approval issued pursuant to the requirements of Air Pollution Control Regulation Nos. 15, 21, 26, 27, 35, Part 19 of this Subchapter (Control of Volatile Organic Compounds from Surface Coating) or Part 30 of this Subchapter (Control of Volatile Organic Compounds from Automobile Refinishing Operations).
18. "EPA" means the United States Environmental Protection Agency.



19. "Facility" or "stationary source" means all air pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control). Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same "major group" (i.e. which have the same two-digit code) as described in the Standard Industrial Classification Manual, 1987. A facility or stationary source may consist of one or more emissions units. A facility or stationary source does not include emissions resulting directly from an internal combustion engine for transportation purposes, emissions from a non-road engine or the activities of any vessel.
20. "Federally enforceable" means all limitations and conditions which are enforceable by the Administrator of the U.S. Environmental Protection Agency including, but not limited to, those requirements developed pursuant to 40 C.F.R. § 60 (New Source Performance Standards), 40 C.F.R. § 61 (National Emission Standards for Hazardous Air Pollutants), 40 C.F.R. § 63 (National Emission Standards for Hazardous Air Pollutants for Source Categories), requirements within the State Implementation Plan, those requirements in operating permits issued pursuant to "Air Pollution Control Regulation No. 29 - Operating Permits" or 40 C.F.R. § 71 (except those listed as "Not Federally Enforceable"), those requirements in major or minor source permits issued pursuant to "Air Pollution Control Regulation No. 9 - Air Pollution Control Permits", to the extent the regulation is a part of the State Implementation Plan and those requirements in emissions caps issued pursuant to "Air Pollution Control Regulation No. 29 - Operating Permits".
21. "Fossil fuel" means natural gas, petroleum, coal and any form of solid, liquid or gaseous fuel derived from such materials for the purpose of creating useful heat.
22. "Fossil fuel fired steam" or "hot water generating unit" means a furnace or boiler used in the process of burning fossil fuel for the purpose of producing steam or hot water by heat transfer.
23. "Fuel oil" means any virgin distillate oil, virgin residual oil, biodiesel or a blend of these.
24. "Fugitive emissions" means those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening.
25. "Good engineering practice" or "GEP" means, with respect to stack heights, the height necessary to insure that emissions from the stack do not result in excessive concentrations of any air pollutant in the immediate vicinity of the source as a result of aerodynamic downwash, eddies and

wakes which may be created by the source itself, nearby structures or nearby terrain obstacles as calculated according to the Rhode Island Guideline on Air Quality Modeling

26. "Halogenated Organic Compound" and "HOC" means the following compounds:
- a. CFC-11 (trichlorofluoromethane)
  - b. CFC-12 (dichlorodifluoromethane)
  - c. CFC-113 (1,1,1-trichloro 2,2,2-trifluoroethane)
  - d. CFC-114 (1,2-dichloro 1,1,2,2-tetrafluoroethane)
  - e. CFC-115 (chloropentafluoroethane)
  - f. HCFC-22 (chlorodifluoromethane)
  - g. HCFC-31 (chlorofluoromethane)
  - h. HCFC-123 (1,1,1-trifluoro 2,2-dichloroethane)
  - i. HCFC 123a (1,2-dichloro-1,1,2-trifluoroethane)
  - j. HCFC-124 (2-chloro 1,1,1,2-tetrafluoroethane)
  - k. HCFC-141b (1,1-dichloro 1-fluoroethane)
  - l. HCFC-142b (1-chloro 1,1-difluoroethane)
  - m. HCFC-151a (1-chloro-1-fluoroethane)
  - n. HCFC-225ca (3,3-dichloro-1,1,1,2,2-pentafluoropropane)
  - o. HCFC-225cb (1,3-dichloro-1,1,2,2,3-pentafluoropropane)
  - p. methyl chloroform (1,1,1-trichloroethane)
  - q. methylene chloride (dichloromethane)
  - r. perchloroethylene
27. "Hazardous air pollutant" or "HAP" means an air pollutant which has been listed pursuant to § 112(b) of the Clean Air Act Amendments of 1990.
28. "Heat input capacity" means the manufacturer's or designer's guaranteed maximum rate of heat input, whichever is greater.

29. "Lowest achievable emission rate" or "LAER" means, for any stationary source, the more stringent rate of emissions based on the following:
- a. The most stringent emission limitation which is contained in the implementation plan of any state for such class or category of stationary source, unless the owner or operator of the proposed stationary source demonstrates that such limitations are not achievable; or,
  - b. The most stringent emission limitation which is achieved in practice by such class or category of stationary source. This limitation, when applied to a modification, means the lowest achievable emission rate for the new or modified installation within the stationary source.
  - c. In no event shall the application of this term permit a proposed new or modified stationary source to emit any pollutant in excess of the amount allowable under applicable new source performance standards.
30. "Natural gas" means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane.
31. "Nitrogen oxides" means nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>) and any other species of nitrogen oxides, expressed as the molecular weight of NO<sub>2</sub>.
32. "Nonroad engine" means:
- a. Except as discussed in § 0.5(A)(32)(b) of this Part, a non-road engine is any internal combustion engine:
    - (1) In or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function (such as garden tractors, off-highway mobile cranes and bulldozers); or,
    - (2) In or on a piece of equipment that is intended to be propelled while performing its function (such as lawnmowers and string trimmers); or,
    - (3) That, by itself or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform.
  - b. An internal combustion engine is not a non-road engine if:

- (1) The engine is used to propel a motor vehicle or a vehicle used solely for competition, or is subject to standards promulgated under § 202 of the Act; or,
  - (2) The engine is regulated by a federal New Source Performance Standard promulgated under § 111 of the Act; or,
  - (3) The engine otherwise included in § 0.5(A)(32)(a)((3)) of this Part remains or will remain at a location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine (or engines) that replace an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period. An engine located at a seasonal source is an engine that remains at a seasonal source during the full annual operating period of the seasonal source. A seasonal source is a stationary source that remains in a single location on a permanent basis (i.e., at least two years) and that operates at that single location approximately three months (or more) each year. This paragraph does not apply to an engine after the engine is removed from the location.
33. "Opacity" means the degree to which air contaminants reduce the transmission of light and obscure a contrasting background.
  34. "Organic compound" means any carbon-containing compound with the exception of carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, metallic carbonates and ammonium carbonate.
  35. "Organic solvent cleaning" means the process of cleaning contaminants or water from surfaces by cold cleaning or vapor cleaning using Volatile Organic Compounds (VOC) or volatile Hazardous Air Pollutants.
  36. "Owner" or "operator" means any person who owns, leases, operates, controls or supervises any building, structure, facility, installation or emissions unit which directly or indirectly results or may result in emission of any air contaminant.
  37. "Particulate matter" means any material, other than uncombined water, that is or has been airborne and exists as a liquid or solid at ambient conditions.
  38. "Permanent total enclosure" means a permanently installed enclosure that completely surrounds a source of emissions such that all VOC emissions



are captured and contained for discharge to a control device and which meets the specifications given in Method 204 or 40 C.F.R. § 51, Appendix M.

39. "Person" means an individual, trust, firm, joint stock company, corporation (including a quasi-governmental corporation), partnership, limited liability company (LLC), association, syndicate, municipality, municipal or state agency, fire district, club, non-profit agency or any subdivision, commission, department, bureau, or agency of state or federal government (including a quasi-governmental corporation) or of any interstate body.
40. "Potential to emit" or "potential emissions" or "PTE" means:
- a. The maximum capacity of a stationary source to emit a pollutant under its physical or operational design. Any physical or operational limitation on the capacity of a source to emit a pollutant, including air pollution control equipment and restrictions on the hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design only if the limitation or the effect it would have on emissions is federally enforceable. Secondary emissions do not count in determining the potential to emit of a stationary source. This term does not alter or affect the use of this term for any other purposes under the Act, or the term "capacity factor" as used in Title IV of the Act or the regulations promulgated thereunder.
  - b. "Potential emissions" means from organic solvent cleaning operations at a stationary source are calculated as follows:
    - (1) Determine the potential to emit for each individual solvent cleaning using the following equation.
$$PTE_i = H_i \times W_i \times SA_i$$
Where:  
 $PTE_i$ =the potential to emit for solvent cleaning machine i (kilograms of solvent per year).  
 $H_i$ =hours of operation for solvent cleaning machine i (hours per year)=8760 hours per year, unless otherwise restricted by a Federally enforceable requirement.  
 $W_i$ =the working mode uncontrolled emission rate (kilograms per square meter per hour)=1.95 kilograms per square meter per hour for batch vapor and cold cleaning machines=1.12

kilograms per square meter per hour for in-line cleaning machines.

SAI<sub>i</sub>= solvent/air interface area of solvent cleaning machine i (square meters). Cleaning machines that do not have a solvent/air interface shall calculate a solvent/air interface area using the procedure in § 0.5(A)(40)(b)(2) of this Part.

- (2) Cleaning machines that do not have a solvent/air interface shall calculate a solvent/air interface area using the following equation.

$$SAI=2.20 * (Vol)^{0.6}$$

Where:

SAI=the solvent/air interface area (square meters).

Vol=the cleaning capacity of the solvent cleaning machine (cubic meters).

- (3) Sum the PTE<sub>i</sub> for all solvent cleaning operations to obtain the total potential to emit for solvent cleaning operations at the facility.

41. "Reasonably available control technology" or "RACT" means the lowest emission limitation that a particular piece of equipment or pollutant emitting activity is capable of meeting by using measures that are reasonably available in terms of technological and economic feasibility.
42. "Residual oil" means No. 4, No. 5, or No. 6 fuel oil.
43. "Stack" means a flue, conduit or opening to provide for the emission of the products of combustion and/or other air contaminants into the atmosphere.
44. "Secondary emissions" means emissions which occur as a result of the construction or operation of a major stationary source or major modification, but do not come from the major stationary source or major modification itself. Secondary emissions must be specific, well defined, quantifiable and impact the same general areas as the stationary source or modification. Secondary emissions include emissions from any off-site support facility which would not be constructed or increase its emissions except as a result of the construction or operation of the major stationary source or major modification. Secondary emissions do not include emissions from any mobile source regulated under Title II of the Clean Air Act.

45. "Vapor cleaning" means an organic solvent cleaning process in which contaminants or water are cleaned and removed from surfaces by condensing hot solvent vapor on the colder pieces. This definition includes vapor degreasing and drying.
46. "Volatile organic compound" or "VOC" means any organic compound which participates in atmospheric photochemical reactions. This includes any organic compound other than the following exempt compounds:
- a. acetone
  - b. 2-amino-2-methyl-1-propanol
  - c. CFC-11 (trichlorofluoromethane)
  - d. CFC-12 (dichlorodifluoromethane)
  - e. CFC-113 (1,1,2-trichloro 1,2,2-trifluoroethane)
  - f. CFC-114 (1,2-dichloro 1,1,2,2-tetrafluoroethane)
  - g. CFC-115 (chloropentafluoroethane)
  - h. 2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane  
( $(\text{CF}_3)_2\text{CFCF}_2\text{OCH}_3$ )
  - i. dimethyl carbonate
  - j. ethane
  - k. 2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane  
( $(\text{CF}_3)_2\text{CFCF}_2\text{OC}_2\text{H}_5$ )
  - l. H-Galden 1040x or H-Galden ZT 130 (or 150 or 180)  
( $\text{HCF}_2\text{OCF}_2\text{OCF}_2\text{CF}_2\text{OCF}_2\text{H}$ )
  - m. HCFC-22 (chlorodifluoromethane)
  - n. HCFC-31 (chlorofluoromethane)
  - o. HCFC-123 (1,1,1-trifluoro 2,2-dichloroethane)
  - p. HCFC 123a (1,2-dichloro-1,1,2-trifluoroethane)
  - q. HCFC-124 (2-chloro 1,1,1,2-tetrafluoroethane)
  - r. HCFC-141b (1,1-dichloro 1-fluoroethane)
  - s. HCFC-142b (1-chloro 1,1-difluoroethane)

- t. HCFC-151a (1-chloro-1-fluoroethane)
- u. HCFC-225ca (3,3-dichloro-1,1,1,2,2-pentafluoropropane)
- v. HCFC-225cb (1,3-dichloro-1,1,2,2,3-pentafluoropropane)
- w. HFC-23 (trifluoromethane)
- x. HFC-32 (difluoromethane)
- y. HFC-43-10mee (1,1,1,2,3,4,4,5,5,5-decafluoropentane)
- z. HFC-125 (pentafluoroethane)
- aa. HFC-134 (1,1,2,2-tetrafluoroethane)
- bb. HFC-134a (1,1,1,2-tetrafluoroethane)
- cc. HFC-143a (1,1,1-trifluoroethane)
- dd. HFC-152a (1,1-difluoroethane)
- ee. HFC-161 (ethylfluoride)
- ff. HFC-227ea (1,1,1,2,3,3,3-heptafluoropropane)
- gg. HFC-236ea (1,1,1,2,3,3-hexafluoropropane)
- hh. HFC-236fa (1,1,1,3,3,3-hexafluoropropane)
- ii. HFC-245ca (1,1,2,2,3-pentafluoropropane)
- jj. HFC-245ea (1,1,2,3,3-pentafluoropropane)
- kk. HFC-245eb (1,1,1,2,3-pentafluoropropane)
- ll. HFC-245fa (1,1,1,3,3-pentafluoropropane)
- mm. HFC-365mfc (1,1,1,3,3-pentafluorobutane)
- nn. HFE-134 ( $\text{HCF}_2\text{OCF}_2\text{H}$ )
- oo. HFE-236ca12 ( $\text{HCF}_2\text{OCF}_2\text{OCF}_2\text{H}$ )
- pp. HFE-338pcc13 ( $\text{HCF}_2\text{OCF}_2\text{CF}_2\text{OCF}_2\text{H}$ )
- qq. HFE-7000 (1,1,1,2,2,3,3-heptafluoro-3-methoxypropane or n- $\text{C}_3\text{F}_7\text{OCH}_3$ )

- rr. HFE-7100 (1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane or  $C_4F_9OCH_3$ )
- ss. HFE-7200 (1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane or  $C_4F_9OC_2H_5$ )
- tt. HFE-7300 (1,1,1,2,2,3,4,5,5,5-decafluoro-3-methoxy-4-trifluoromethylpentane or L-14787 or  $C_2F_5CF(OCH_3)CF(CF_3)_2$ )
- uu. HFE-7500 (3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-(trifluoromethyl) hexane)
- vv. HFO-1233zd (trans-1-chloro-3,3,3-trifluoroprop-1-ene)
- ww. HFO-1234ze (trans-1,3,3,3-tetrafluoropropene)
- xx. methane
- yy. methyl acetate
- zz. methyl chloroform (1,1,1-trichloroethane)
- aaa. methyl formate ( $HCOOCH_3$ )
- bbb. methylene chloride (dichloromethane)
- ccc. parachlorobenzotrifluoride (PCBTF)
- ddd. perchloroethylene (tetrachloroethylene)
- eee. propylene carbonate
- fff. cyclic, branched, or linear completely methylated siloxanes
- ggg. 2,3,3,3-tetrafluoropropene
- hhh. The perfluorocarbon compounds which fall into these classes:
  - (1) Cyclic, branched, or linear, completely fluorinated alkanes;
  - (2) Cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;
  - (3) Cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and
  - (4) Sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

- (5) These compounds have been determined to have negligible photochemical reactivity. 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 with negligible photochemical reactivity, as defined above, an owner or operator may exclude these negligible photochemical reactive compounds when determining compliance with an emissions standard. Exempt solvents will be treated as water in "pounds of VOC per gallon of coating minus water" calculations. Classification of methylene chloride and perchloroethylene as exempt compounds does not relieve the facility of the requirements in "Air Pollution Control Regulation No. 22 - Air Toxics".

## 0.6 Abbreviations and Symbols - Units of Measure

Abbreviations and Symbols	Definition
Btu	British thermal unit
°C	Degree Celsius (centigrade)
cm	Centimeter
dscf	Dry cubic feet at standard conditions
dscm	Dry cubic meter at standard conditions
°F	Degree Fahrenheit
ft	Feet
g	Gram
gal	Gallon
gr	Grain
hr	Hour
kg	Kilogram

Abbreviations and Symbols	Definition
lb	Pound
lbs	Pounds
m	Meter
m <sup>3</sup>	Cubic meter
mg	Milligram (10 <sup>-3</sup> gram)
mm	Millimeter (10 <sup>-3</sup> meter)
ppm	Parts per million
psi	Pounds per square inch
tpy	Tons per year
μg	Microgram (10 <sup>-6</sup> gram)
vol	Volume
wt	Weight
%	Percent

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**250-RICR-120-05-11**

## **TITLE 250 – DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

### **CHAPTER 120 – AIR RESOURCES**

#### **SUBCHAPTER 05 – AIR POLLUTION CONTROL**

PART 11 – Petroleum Liquids Marketing and Storage

### **11.1 Purpose and Authority**

#### **11.1.1 Purpose**

The purpose of this regulation is to regulate the storage and marketing of petroleum liquids to minimize emissions of volatile organic compounds.

#### **11.1.2 Authority**

These regulations are authorized pursuant to R.I. Gen. Laws § 42-17.1-2(19) and Chapter 23-23, as amended, and have been promulgated pursuant to the procedures set forth in the R.I. Administrative Procedures Act, R.I. Gen. Laws Chapter 42-35.

### **11.2 Application**

The terms and provisions of this regulation shall be liberally construed to permit the Department to effectuate the purposes of state laws, goals and policies.

### **11.3 Severability**

If any provision of this regulation or the application thereof to any person or circumstance, is held invalid by a court of competent jurisdiction, the validity of the remainder of the regulation shall not be affected thereby.

### **11.4 Incorporated Materials**

- A. These regulations hereby adopt and incorporate Appendix B and C of the Environmental Protection Agency's "Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems" (EPA-450/2-78-051) (1978) and by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.
- B. These regulations hereby adopt and incorporate Section 14 of the Petroleum Equipment Institute's "Recommended Practices for Installation and Testing of Vapor-Recovery Systems at Vehicle Fueling Sites" (PEI/RP300-09) (2009) by



reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.

- C. These regulations hereby adopt and incorporate the American Society for Testing and Materials' "D323-15a" (2015) by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.
- D. These regulations hereby adopt and incorporate 40 C.F.R §§ 60.503; 60 Appendix A-8 Method 27; (2018) by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.
- E. These regulations hereby adopt and incorporate California Air Resources Board, testing procedures TP-201.3, TP-201.3C, TP-201.1B, TP-20 1.1C, TP-201.1D, and TP-201.1E (2018), by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.
- F. These regulations hereby adopt and incorporate EPA's Technical Guidance - "Stage II Vapor Recovery Systems for Control of Vehicle Refueling of Gasoline Dispensing Facilities, Volumes I and II,"(EPA 450/3-91-022 a and b), (1991) by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.

## 11.5 Definitions

- A. Unless otherwise expressly defined in this section, the terms used in this regulation shall be defined by reference to [Part 0 of this Subchapter](#) (General Definitions). As used in this regulation, the following terms shall, where the context permits, be construed as follows:
  - 1. "Best extent possible" means there shall be no reading at 2.5 centimeters from any potential leak source, greater than or equal to one hundred percent (100%) of the lower explosive limit, LEL, measured as propane, as detected by a combustible gas detector using the test procedure described in Appendix B of the EPA document entitled "Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems" (EPA-450/2-78-051), incorporated in § 11.4(A) of this Part.
  - 2. "Bottom filling" means the filling of a tank truck or stationary storage tank through an opening that is flush with the tank bottom.
  - 3. "Bulk gasoline plant" means a gasoline storage and distribution facility with an average daily throughput of twenty thousand (20,000) gallons or less but greater than four thousand (4,000) gallons which receives

gasoline from bulk terminals by trailer transport or railroad tank car, stores it in tanks, and subsequently dispenses it via account trucks to local farms, businesses, and service stations.

4. "Bulk gasoline terminal" means a gasoline storage facility which receives gasoline from refineries primarily by pipeline, railroad tank car, ship, or barge, and delivers gasoline to bulk gasoline plants or to commercial or retail accounts primarily by tank truck; and has a daily throughput of more than twenty thousand (20,000) gallons of gasoline.
5. "Corporate or commercial fleets" means vehicles used for business purposes which are owned by corporations, governments, universities or other organizations.
6. "Daily throughput" means the average amount of gasoline that a bulk gasoline terminal or plant dispenses in a day from that facility and is defined as the thirty (30) day rolling average throughput of the facility. This is used to determine applicability, not compliance.
7. "External floating roof" means a storage vessel cover in an open top tank consisting of a double deck or pontoon single deck which rests upon and is supported by the petroleum liquid being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank wall.
8. "Gasoline" means any petroleum distillate having a Reid vapor pressure of more than four (4.0) psia as determined by ASTM Method D323-15a, incorporated in § 11.4(C) of this Part. This term includes but is not limited to mixtures of alcohols and gasoline.
9. "Gasoline dispensing facility" means any site where gasoline is dispensed to motor vehicle gasoline tanks from stationary storage vessels.
10. "Leak" means a meter reading from a combustible gas detector greater or equal to one hundred percent (100%) lower explosive limit as propane.
11. "Liquid-mounted seal" means a primary seal mounted in continuous contact with the liquid around the circumference of the tank between the tank wall and the floating roof.
12. "Monthly throughput" means the amount of gasoline that a gasoline dispensing facility dispenses in a month. This amount is used to determine applicability, not compliance.
13. "Onboard refueling vapor recovery" or "ORVR" means a vehicle emission control system that captures fuel vapors from the vehicle gas tank during refueling.

14. "Operator" means any person who leases, operates, controls or supervises a facility at which gasoline is dispensed.
15. "Owner" means any person who has legal or equitable title to the gasoline storage vessel at a facility.
16. "Petroleum liquids" means crude oil, condensate and any finished or intermediate products manufactured or extracted in a petroleum refinery whose true vapor pressure is greater than 1.52 psia (10.5 kilo pascals) at sixty-nine degrees Fahrenheit (69°F).
17. "Splash filling" means the filling of a tank truck or stationary storage tank through a pipe or hose whose discharge opening is above the surface level of the liquid in the tank being filled.
18. "Stage I vapor control system" means a closed system between the vapor spaces of an unloading gasoline tank truck and a receiving gasoline dispensing facility storage tank such that vapors displaced from the storage tank are transferred to the tank truck that is being unloaded.
19. "Stage II vapor collection and control system" means a system which collects gasoline vapors displaced from motor vehicle gasoline tanks during refueling and which routes the vapors to a stationary storage tank.
20. "Submerged fill pipe" means any fill pipe the discharge opening of which is entirely submerged when the liquid level is six (6) inches above the bottom of the tank; or when applied to a tank which is loaded from the side, shall mean any fill pipe the discharge of which is entirely submerged when the liquid level is eighteen (18) inches or twice the diameter of the fill pipe, whichever is greater, above the bottom of the tank.
21. "Submerged filling" means the filling of a tank truck or stationary tank through a submerged fill pipe whose discharge opening is entirely submerged when the pipe normally used to withdraw liquid from the tank can no longer withdraw any liquid.
22. "Substantially modified" means a modification of an existing gasoline dispensing facility which involves the addition, repair, replacement, or reconditioning of stationary storage tanks. Any excavation at an existing gasoline dispensing facility which has the potential to affect the integrity or pitch of any Stage II vapor return, manifold or vent piping is also considered a substantial modification.
23. "Vacuum assist system" means a Stage II vapor collection and control system which employs a pump, blower or other vacuum inducing device to collect and/or process gasoline vapors.

24. "Vapor" means those components of gasoline that have been volatilized to the gaseous phase from the liquid phase.
25. "Vapor balance system" means a combination of pipes or hoses which create a closed system between the vapor spaces of an unloading vessel and a receiving vessel such that vapors displaced from the receiving vessel are transferred to the vessel being unloaded.
26. "Vapor tight" means equipment that allows no loss of vapors. Equipment is considered vapor-tight if the vapor concentration at a potential leak source is not equal to or greater than 100 percent (100%) of the Lower Explosive Limit when measured with a combustible gas detector, calibrated with propane, at a distance of one (1) inch from the source.
27. "Vapor-mounted seal" means a primary seal mounted so there is a vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the tank wall, the liquid surface, and the floating roof.

## **11.6 Storage of Petroleum Liquids - Fixed Roof Tanks**

### **11.6.1 Prohibitions and Requirements**

- A. No person shall place, store or hold in any stationary vessel, reservoir, or other container of more than forty thousand (40,000) gallons capacity any petroleum liquids unless such tank reservoir or other container is a pressure tank capable of maintaining working pressures sufficient at all times to prevent vapor or gas loss to the outdoor atmosphere unless:
  1. The source utilizes an internal floating roof equipped with a closure seal, or seals, to close the space between the roof edge and tank wall such that:
    - a. The cover must float uniformly on the liquid;
    - b. There is no accumulated liquid on the cover, and;
    - c. The seal is intact and uniformly in place around the circumference of the cover between the cover and tank wall, or
  2. The source utilizes an alternative control device that is at least ninety-five percent (95%) effective at reducing or recovering VOC emissions, approved by the Director, and
  3. The source is maintained such that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials, and

4. Where applicable, all openings, except stub drains, are equipped with covers, lids, or seals such that:
  - a. The cover, lid, or seal is in the closed position at all times except when in actual use, and
  - b. Automatic bleeder vents are closed at all times except when the roof is being floated off or being landed on the roof leg supports, and
  - c. Rim vents, if provided, are set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting, and
5. Routine visual inspections of the internal floating roof and the primary and secondary seals are conducted through roof hatches on an annual basis, and
6. A complete visual inspection of the internal floating roof, the primary and secondary seals, gaskets, slotted membranes and sleeve seals is conducted whenever the tank is emptied or once every ten (10) years, whichever is more frequent, or
7. The source utilized a vapor recovery system consisting of a device capable of collecting the vapor from volatile organic liquids and gases so as to prevent their emissions to the outdoor atmosphere. All tank gauging and sampling devices shall be gas tight except when gauging or sampling is taking place.

#### **11.6.2 Records**

- A. Records are to be maintained at the facility by the owner or operator of a source defined in § 11.6.1 of this Part and shall include:
  1. Reports of the results of inspections conducted under §§ 11.6.1(A)(5) and (6) of this Part.
  2. Records of daily throughput quantities, types of volatile petroleum liquids, average monthly storage temperature, and true vapor pressure of the stored liquid.
  3. Records for both scheduled and unscheduled maintenance.
- B. Records cited in § 11.6.2(A) of this Part shall be maintained for a period of three (3) years and shall be accessible for review by the Director, personnel designated by the Director, or the EPA.

## 11.7 Bulk Gasoline Terminals

§ 11.7 of this Part shall apply to bulk gasoline terminals and appurtenant equipment necessary to load and unload the tank trucks, railroad tank cars or trailer compartment. If a source is ever considered a bulk terminal because it surpasses the daily throughput under the definition in § 11.5(A)(4) of this Part, it is always subject to this regulation even if it goes below the daily throughput.

### 11.7.1 Prohibitions

- A. No person shall load or unload gasoline into any tank trucks, railroad tank cars, or trailers from any bulk gasoline terminal unless the above-mentioned vessels are equipped with a vapor balance system, and
1. The bulk gasoline terminal is equipped with a vapor control system properly installed, maintained and in good working order, in operation and that prevents emissions to the atmosphere from exceeding 0.30 grams per gallon (80 grams/1000 liters) of gasoline loaded over any 6-hour period as determined by § 11.7.3 of this Part. The vapor collection and processing equipment must be designed and operated to prevent gauge pressure in the tank truck from exceeding eighteen (18) inches of water and prevent vacuum from exceeding six (6) inches of water, and
  2. A connecting pipe or hose from the loading rack to the delivery vessel is equipped with fittings which are vapor tight and will automatically and immediately close upon disconnection so as to prevent release of volatile organic materials to the best extent possible, and
  3. A vapor space connection on the tank truck, railroad tank car, or trailer equipped with fittings which are vapor tight and will automatically and immediately close upon disconnection so as to prevent release of volatile organic materials to the best extent possible.
  4. The bulk gasoline terminal is equipped with a vapor control system, capable of complying with § 11.7.1(A)(1) of this Part, properly installed, in good working order, in operation and consistent with one of the following:
    - a. An adsorber or condensation system which processes and recovers at least ninety percent (90%) by weight of all vapors and gases from the equipment being controlled; or,
    - b. A vapor collection system which directs all vapor to fuel gas system and reduces emissions by at least ninety percent (90%); or,
    - c. A control system determined to be equally effective and approved by the Director.
- B. Sources affected under § 11.7 of this Part may not:

1. Allow gasoline to be discarded in sewers or stored in open containers or handled in any manner that would result in evaporation, nor
  2. Allow the pressure in the vapor collection system to exceed the tank truck or trailer pressure relief settings.
- C. All pumps and compressors handling gasoline shall have mechanical seals or other equipment for the purposes of air pollution control as approved by the Director and EPA. The seals or other equipment, when tested by a combustible gas detector at 2.5 centimeters from any potential leak points, shall give no reading of greater than one hundred percent (100%) of the lower explosive limit, measured as propane.
- D. The emergency venting of vessels covered by § 11.7.1(A) of this Part shall be in accordance with the federal DOT specifications for cargo tanks and tank cars authorized to carry hazardous materials. Emergency venting shall not be considered a violation.

### **11.7.2 Records**

- A. Records shall be maintained at the facility by the owner or operator of a bulk gasoline terminal and shall include:
1. Records of daily throughput quantities of gasoline.
  2. Records for both scheduled and unscheduled maintenance of the vapor control system that is described in § 11.7.1(A)(1) of this Part.
- B. Records cited in § 11.7.2(A) of this Part should be maintained for a period of three (3) years and should be accessible for review by the Director, personnel designated by the Director, or the EPA.

### **11.7.3 Compliance Test Methods**

Compliance with the emission limitations set forth in § 11.7 of this Part shall be determined by using the procedures, compliance averaging times (six (6) hours), and test methods which are detailed in 40 C.F.R § 60.503, incorporated in § 11.4(D) of this Part, or any other method approved by the Director and EPA.

## **11.8 Bulk Gasoline Plants**

This regulation shall apply to the unloading, loading and storage facilities of all bulk gasoline plants and all tank trucks delivering or receiving gasoline at bulk gasoline plants. If a source is ever considered a bulk plant because it surpasses the daily throughput under the definition in § 11.5(A)(3) of this Part, it is always subject to this regulation even if it goes below the daily throughput.

### **11.8.1 Prohibitions**

- A. No owner or operator of a bulk gasoline plant, tank truck, railroad tank car or trailer may permit the loading or unloading of account trucks, tank trucks, railroad tank cars or trailers at a bulk gasoline plant unless each account truck, tank truck, railroad tank car, or trailer is equipped with a vapor balance system as described in § 11.8.1(B) of this Part and approved by the Director, and
  - 1. Equipment is available at the bulk gasoline plant to provide for the submerged filling of each tank truck, railroad tank car or trailer, or
  - 2. Each tank truck, railroad tank car or trailer is equipped for bottom filling.
- B. Vapor balance systems required under § 11.8.1(A) of this Part shall prevent the release of volatile organic material to the atmosphere to the best extent possible and shall consist of the following major components:
  - 1. A vapor space connection on the stationary storage tank equipped with fittings which are vapor tight and will automatically and immediately close upon disconnection so as to prevent release of volatile organic material to the best extent possible, and
  - 2. A connecting pipe or hose equipped with fittings which are vapor tight and will automatically and immediately close upon disconnection so as to prevent release of volatile organic material to the best extent possible, and
  - 3. A vapor space connection on the tank truck, railroad tank car or trailer equipped with fittings which are vapor tight and will automatically and immediately close upon disconnection so as to prevent release of volatile organic material to the best extent possible.
- C. No owner or operator of a bulk gasoline plant may permit gasoline to be spilled, discarded in sewers, stored in open containers or handled in any other manner that would result in evaporation.

### **11.8.2 Records**

- A. Records shall be maintained at the facility by the owner or operator of a bulk gasoline plant and shall include:
  - 1. Records of daily throughput quantities of gasoline,
  - 2. Records for both scheduled and unscheduled maintenance of vapor balance equipment as described in § 11.8.1(B) of this Part.
- B. Records cited in § 11.8.2(A) of this Part should be maintained for a period of three (3) years and should be accessible for review by the Director, personnel designated by the Director, or the EPA.

### **11.8.3 Compliance Test Methods**



Compliance with the emission limitations set forth in § 11.8 of this Part shall be determined by using the procedures and test methods which are detailed in Appendices B and C of EPA publication entitled "Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems" (EPA-450/2-78-051), incorporated in § 11.4(A) of this Part.

## **11.9 Gasoline Dispensing Facility Stage I Vapor Controls and General Requirements**

### **11.9.1 Applicability**

- A. § 11.9.2 of this Part shall apply to all gasoline dispensing facilities with the following exceptions:
1. Stationary gasoline storage vessels of less than five hundred fifty (550) gallons capacity used exclusively for the fueling of implements of husbandry, provided the containers are equipped with submerged fill pipes, or
  2. Stationary storage vessels located at a gasoline dispensing facility with a capacity of less than two thousand (2000) gallons which is in place before July 1, 1979, or
  3. Any stationary storage vessels located at a gasoline dispensing facility with a capacity of two hundred fifty (250) gallons or less which is installed after the effective date of this regulation, or
  4. Any gasoline dispensing facility that is solely serviced by account trucks owned or under the control of bulk gasoline plants that are exempt from § 11.8 of this Part.

### **11.9.2 Prohibitions**

- A. Except as provided in § 11.9.1 of this Part, no person may transfer or cause or allow the transfer of gasoline from any delivery vessel into any stationary storage vessel unless the stationary storage vessel is equipped with a submerged fill pipe and the vapors displaced from the storage vessel during filling are processed by a Stage I vapor control system in accordance with § 11.9.2(B) of this Part.
- B. The Stage I vapor control system required by § 11.9.2(A) of this Part shall be subject to the following conditions:
1. All vapor connections and lines on the storage tank shall be equipped with closures that seal upon disconnect.
  2. The vapor line from the gasoline storage tank to the gasoline cargo tank shall be vapor-tight, as defined in § 11.5(A)(24) of this Part.

3. The Stage I vapor control system shall be designed such that the pressure in the tank truck does not exceed eighteen (18) inches water pressure or 5.9 inches water vacuum during product transfer.
  4. The vapor recovery and product adaptors and the method of connection with the delivery elbow shall be designed so as to prevent the over-tightening or loosening of fittings during normal delivery operations.
  5. If a gauge well separate from the fill tube is used, it shall be provided with a submerged drop tube that extends the same distance from the bottom of the storage tank as specified in § 11.5(A)(20) of this Part.
  6. Liquid fill connections shall be equipped with vapor-tight caps.
- C. The vapor-laden delivery vessel shall be subject to the following conditions:
1. The delivery vessel must be designed and maintained to be vapor tight at all times, and
  2. The vapor-laden delivery vessel may be re-filled only at:
    - a. Bulk gasoline terminals complying with § 11.7 of this Part, or
    - b. Bulk gasoline plants complying with § 11.8 of this Part.
- D. Each owner of a gasoline storage vessel and gasoline delivery vessel covered by § 11.9.2(A) of this Part shall:
1. Purchase and install all necessary control systems and make all necessary process modifications to comply with §§ 11.9.2(B) and 11.9.2(C) of this Part,
  2. Provide instructions to the operator of the gasoline dispensing facility utilizing a Stage I vapor control system as required in § 11.9.2(B) of this Part describing necessary maintenance operations and procedures for prompt notification of the owner in case of any malfunctions of the control system, and
  3. Repair, replace or modify any worn out or malfunctioning component or element of design.
- E. Each operator of a gasoline dispensing facility covered by § 11.9.2(B) of this Part shall:
1. Maintain and operate the Stage I vapor control system in accordance with the specifications and the operating and maintenance procedures specified by the owner, and

2. Promptly notify the owner of the Stage I vapor control system of any scheduled maintenance or malfunction requiring replacement or repair of major components in the system.
- F. The Stage I vapor control system required in § 11.9.2(A) of this Part shall be subject to the following conditions:
1. All gasoline dispensing facilities shall be equipped with a California Air Resources Board (CARB) certified Enhanced Vapor Recovery (EVR) Stage I pressure-vacuum (PV) vent valve;
  2. All gasoline dispensing facilities, except those facilities with co-axial tank systems, shall be equipped with CARB-certified EVR Stage I rotatable product and vapor adaptors;
  3. All gasoline dispensing facilities that begin operation or install a fuel storage tank on or after December 25, 2013, must be equipped with a CARB-certified EVR Stage I vapor control system or a Stage I vapor control system composed of EVR components upon facility start-up following that installation;
  4. Any component of a Stage I vapor control system that is replaced after December 25, 2013, shall be replaced with a CARB-certified EVR Stage I component;
  5. On and after December 25, 2020, gasoline dispensing systems must be equipped with a CARB-certified EVR Stage I vapor control system or a Stage I vapor control system composed of EVR components;
  6. Aboveground storage tanks at gasoline dispensing facilities are exempt from the requirement in § 11.9.2(F)(2) of this Part to install a rotatable product adaptor or another EVR Stage I component if such installation is not technically feasible. Documentation of such technical infeasibility shall be made available to the Director on request; and
  7. A stainless-steel UL-approved spill container that is not EVR certified may be used in the place of an EVR spill container provided that the spill container is not designed to attach to the Stage I vapor control system.
- G. The owner or operator of a gasoline dispensing facility that is not equipped with a Stage II vapor collection and control system shall:
1. Visually inspect the facility's Stage I vapor control system weekly;
  2. Perform the following Stage I vapor control system tests at least once every twelve (12) months:

- a. A Pressure Decay 2-inch Test, using CARB test procedure TP-201.3, incorporated in § 11.4(E) of this Part, demonstrating that the static pressure of the system meets the following specification:

$$P_f = 2e^{-500.887/v}$$

Where:

$P_f$  = Minimum allowable final pressure, inches of water.

$v$  = Total ullage affected by the test, gallons.

$e$  = Dimensionless constant equal to approximately 2.718.

$2$  = The initial pressure, inches water

- b. A Vapor Tie Test, using CARB test procedure TP-201.3C, incorporated in § 11.4(E) of this Part;
- c. A Pressure/Vacuum Vent Valve Test, using CARB test procedure TP-201.1E, incorporated in § 11.4(E) of this Part;
- d. For facilities with EVR rotatable product adaptors and/or vapor adaptors, a Static Torque Rotatable Adaptor Test, using CARB test procedure TP-201.1B, incorporated in § 11.4(E) of this Part; and
- e. For facilities with a Stage I EVR system, either a Leak Rate of Drop Tube/Drain Valve Assembly Test using CARB test procedure TP-201.1C, incorporated in § 11.4(E) of this Part, or a Leak Rate of Drop Tube/Overfill Prevention Devices Test using CARB test procedure TP-201.1D, incorporated in § 11.4(E) of this Part.
3. Notify the Department of the date that testing will be conducted at least seven (7) days in advance of testing and certify to the Department in writing within fifteen (15) days of the test that testing has been completed. Such certification shall be signed by the owner or operator of the facility and shall include a list of Stage I EVR components operating at the facility and the results of the tests required in § 11.9.2(G)(2) of this Part. Test results shall be signed and certified as accurate by the person who conducted the tests.
4. Immediately replace any component of a Stage I vapor control system that is not operating properly with a properly functioning comparable EVR component.
5. Maintain the following records for a period of five (5) years and make those records available for inspection by representatives of the Department or the EPA on request:

- a. The dates and results of weekly visual inspections as required in § 11.9.2(G)(1) of this Part,
- b. The dates and results of tests performed pursuant to § 11.9.2(G)(2) of this Part,
- c. Identification of Stage I vapor control system components that are replaced, the replacement components installed, and dates of such replacements, and
- d. Gasoline throughput quantities.

### **11.9.3 General Requirements for Gasoline Dispensing Facilities**

- A. The owner or operator of a gasoline dispensing facility shall use the following measures to minimize vapor releases to the atmosphere:
  1. Minimize gasoline spills;
  2. Clean up spills as expeditiously as practicable;
  3. Cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use; and
  4. Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.

## **11.10 Storage of Petroleum Liquids: External Floating Roof Vessels**

### **11.10.1 Prohibitions**

- A. No person shall place, store or hold gasoline in a storage tank having a capacity of forty thousand (40,000) gallons or greater that is equipped with an external floating roof unless the vessel has been fitted with:
  1. A continuous secondary seal extending from the floating roof to the tank wall (rim-mounted secondary seal), or
  2. A closure or other device which controls volatile organic compound emissions by attaining or exceeding the requirements of § 11.10.1(B) of this Part for a secondary seal required under this regulation and approved by the Director and EPA.
- B. All seal closure devices must meet the following requirements:
  1. There are no visible holes, tears or other openings in the seal(s) or seal fabric,

2. The seal(s) is intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank wall, and
  3. For tanks having vapor mounted primary seals, the accumulated area of gaps exceeding 0.32 cm (1/8 in.) in width between the secondary seal and the tank wall shall not exceed 21.2 cm<sup>2</sup> per meter of tank diameter (1.0 in.<sup>2</sup> per ft. of tank diameter), as determined by the method in § 11.10.3(C) of this Part.
- C. All openings in the external floating roof, except for automatic bleeder vents, rim space vents and leg sleeves, must:
1. Be equipped with covers, seals or lids in the closed position except when the openings are in actual use, and
  2. Provide projections below the liquid surface at all times.
- D. Automatic bleeder vents must be closed at all times except when the roof is being floated off or being landed on the roof leg supports.
- E. Rim vents shall be set to open when the roof is being floated off the leg supports or at the manufacturer's recommended setting.
- F. Emergency roof drains shall be provided with slotted membrane fabric covers or equivalent covers which cover at least 90 percent (90%) of the area of the opening.

#### **11.10.2 Inspection and Reporting Requirements**

- A. The owner or operator of a petroleum liquid storage vessel with an external floating roof subject to this regulation shall:
1. Perform routine inspections semiannually in order to ensure compliance with § 11.10 of this Part and the inspection of the secondary seal gap,
  2. Measure the secondary seal gap annually in accordance with §§ 11.10.3(C)(1) and (2) of this Part when the floating roof is equipped with a vapor-mounted primary seal or liquid-mounted primary seal, except that measurements in riveted tanks shall not be made when the roof is floating at a level that places the secondary seal in contact with a horizontal rivet seam,
  3. Maintain records at the facility of the results of the inspections required in § 11.10.2(A)(1) of this Part for a period of three (3) years after an inspection,
  4. Provide copies of all records in § 11.10.2(A)(3) of this Part to the Director, upon verbal or written request, at any reasonable time.

5. Maintain records at the facility which report monthly throughput quantities, types of petroleum liquids stored, average monthly storage temperature, and true vapor pressures of the stored liquid.

### **11.10.3 Compliance Test Methods**

- A. The owner or operator of any volatile organic compound source required to comply with § 11.10 of this Part shall demonstrate compliance by the methods of this section or an alternative method approved by the Director and EPA.
- B. A person proposing to conduct a volatile organic compound emissions test shall notify the Director of the intent to test not less than fifteen (15) days before the proposed initiation of the tests so the Director may have the option to observe the test. The notification shall contain the information required by, and be in a format approved by, the Director.
- C. Compliance with § 11.10.1(B)(3) of this Part shall be determined by:
  1. Physically measuring the length and width of all gaps around the entire circumference of the secondary seal in each place where a 0.32 cm (1/8 in.) uniform diameter probe passes freely (without forcing or binding against the seal) between the seal and tank wall, and
  2. Summing the area of the individual gaps.

### **11.11 Reid Vapor Pressure**

- A. No person shall store, sell, or supply as fuel at or from bulk gasoline terminals and bulk gasoline plants a gasoline having a Reid Vapor Pressure greater than 9.0 pounds per square inch, except as specified in § 11.11(B) of this Part, during the period May 1 through September 15 of each year.
  1. No person shall deliver gasoline having a Reid Vapor Pressure greater than nine (9.0) pounds per square inch to a gasoline dispensing facility during the period May 1 through September 15 of each year.
  2. No gasoline dispensing facility shall receive gasoline having a Reid Vapor Pressure greater than nine (9.0) pounds per square inch during the period May 1 through September 15 of each year.
- B. No person shall store, sell, or supply as fuel at or from bulk gasoline terminals and bulk gasoline plants a gasoline-ethanol blend containing at least nine percent (9%) ethanol which has a Reid Vapor Pressure greater than ten (10.0) pounds per square inch during the period May 1 through September 15 of each year.
  1. No person shall deliver a gasoline-ethanol blend containing at least nine percent (9%) ethanol which has a Reid Vapor Pressure greater than ten

(10.0) pounds per square inch to a gasoline dispensing facility during the period May 1 through September 15 of each year.

2. No gasoline dispensing facility shall receive a gasoline-ethanol blend containing at least nine percent (9%) ethanol which has a Reid Vapor Pressure greater than ten (10.0) pounds per square inch during the period May 1 through September 15 of each year.
- C. Sampling and testing of gasoline shall be in accordance with ASTM Method D323-15a "Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method)," incorporated in § 11.4(C) of this Part, or any equivalent method approved by the Director and EPA.

## **11.12 Tank Truck Certification and Vapor Collection Systems**

This regulation shall apply to all gasoline tank trucks equipped for gasoline vapor collection.

### **11.12.1 Prohibitions**

- A. No person shall allow a gasoline tank truck to be filled or emptied unless the gasoline tank truck:
1. Is tested annually according to the test procedure referenced in § 11.12.2 of this Part;
  2. Sustains a pressure change of no more than .11 psi (3 inches of water) in five (5) minutes when pressurized to a gauge pressure of .65 psi (18 inches of water) or evacuated to a gauge pressure of .22 psi (6 inches of water) during the testing required in § 11.12.1(A)(1) of this Part;
  3. Is repaired by the owner or operator and retested within fifteen (15) days of testing if it does not meet the criteria of § 11.12.1(A)(2) of this Part;
  4. Displays a sticker near the Department of Transportation Certification plate, which:
    - a. Shows the date the gasoline tank truck last passed the test required in § 11.12.1(A)(1) of this Part;
    - b. Shows the identification number of the gasoline tank truck; and,
    - c. Expires not more than one (1) year from the date of the leak tight test.
- B. No person shall unload gasoline into a storage tank at a gasoline dispensing facility subject to § 11.9.2 of this Part unless the following conditions are met:



1. All hoses are properly connected to the Stage I vapor recovery system;
  2. The adapters or couplers that attach to the vapor line on the storage tank have closures that seal upon disconnect;
  3. All vapor return hoses, couplers, and adapters used in the gasoline delivery are vapor-tight, as defined in § 11.5(A)(24) of this Part;
  4. All tank truck vapor return equipment is compatible in size and forms a vapor-tight connection with the Stage I equipment on the gasoline dispensing facility's storage tank; and
  5. All hatches on the tank truck are closed and securely fastened.
- C. The owner or operator of a vapor collection system shall:
1. Design and operate the vapor collection system and the gasoline loading equipment in a manner that prevents:
    - a. Gauge pressure from exceeding 0.65 psi (18 inches of water) and a vacuum from exceeding 0.22 psi (6 inches of water) in the gasoline tank truck;
    - b. A reading equal to or greater than one hundred percent (100%) of the lower explosive limit, LEL, measured as propane, at 2.5 centimeters from any potential leak source when measured by the method referenced in § 11.12.2 of this Part during the loading or unloading operations at gasoline dispensing facilities, bulk plants and bulk terminals;
    - c. Visible leaks during the loading and unloading operations at gasoline dispensing facilities, bulk plants and bulk terminals; and,
  2. Within fifteen (15) days, repair and retest a vapor collection, or control system that exceeds the limits in § 11.12.1(C)(1)(a) of this Part.
- D. The Director may, at any time, monitor a gasoline tank truck, vapor collection system, or vapor control system, by the method referenced in § 11.12.2 of this Part, to confirm continuing compliance with §§ 11.12.1(A), (B) and (C) of this Part.

#### **11.12.2 Compliance Test Methods**

- A. The owner or operator of a gasoline tank truck subject to this regulation shall, at their own expense, demonstrate compliance with § 11.12.1 of this Part by the methods of § 11.12.2(C) of this Part or an alternative method approved by the Director and EPA. All tests shall be made by, or under the direction of, a person qualified by training and/or experience in the field of air pollution testing or tank

truck maintenance and testing and/or experience in the use of a combustible gas detector in the field of air pollution.

- B. The owner or operator of a gasoline tank truck subject to this regulation shall notify the Director in writing of the date and location of the certification test at least ten (10) days before the anticipated test date.
- C. Test procedure to determine compliance with § 11.12.1 of this Part must be consistent with the test procedure described in 40 C.F.R § 60, Appendix A-8, Method 27, incorporated in § 11.4(D) of this Part.
- D. Monitoring to confirm the continuing existence of leak tight conditions shall be consistent with the procedures described in Appendix B of the EPA document entitled "Control of Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems" (EPA 450/2-78-051), incorporated in § 11.4(A) of this Part, or an alternative method approved by the Director and EPA.

### **11.12.3 Recordkeeping and Reporting**

- A. An owner or operator subject to § 11.12 of this Part shall maintain records of all certification testing and repairs. The records must identify the gasoline tank truck, vapor collection system, or vapor control system; the date of repair; and, if applicable, the type of repair and the date of retest. The records must be maintained in a legible, readily available condition for at least two (2) years after the date of testing or repair was completed.
- B. The records for certification tests required by § 11.12.3(A) of this Part, shall, as a minimum, contain:
  - 1. The gasoline tank truck identification number;
  - 2. The initial test pressure and the time of reading;
  - 3. The final test pressure and the time of reading;
  - 4. The initial test vacuum and the time of reading;
  - 5. The final test vacuum and the time of reading;
  - 6. At the top of each report page shall be the company name, and the date and location of the tests on that page; and,
  - 7. Name, address and title of person conducting the test.
- C. Copies of all records and reports under § 11.12.3 of this Part shall immediately be made available to the Director and/or EPA, upon verbal or written request, at any reasonable time.

### **11.13 Equivalence Approval**

Any equivalence approval required by EPA in this regulation will not be effective until approved as a single source revision to the State Implementation Plan.

### **11.14 Gasoline Dispensing Facilities - Stage II Vapor Controls**

#### **11.14.1 The requirements of § 11.14 of this Part shall apply to:**

- A. All gasoline dispensing facilities constructed or substantially modified after November 15, 1992.
- B. All other gasoline dispensing facilities which have or have had a monthly throughput of greater than ten thousand (10,000) gallons in any one (1) month after November 1991.
- C. The requirements in § 11.14 of this Part shall be presumed to apply to all gasoline dispensing facilities. It is the obligation of the person who owns, operates, leases, or controls a gasoline dispensing facility to demonstrate to the Department, in writing and with clear and convincing evidence, that the facility should be exempted from this regulation because its throughput has not exceeded ten thousand (10,000) gallons in any month after November 1991. Any such exempted facility shall be required to comply with the recordkeeping and reporting requirements specified in §§ 11.14.3(A) and (I) of this Part.
- D. The requirements in § 11.14 of this Part shall not apply to gasoline dispensing facilities which dispense gasoline solely to marine vessels.
- E. Facilities constructed or substantially modified after November 15, 1992 may submit to the Department, in writing, a request for an exemption to the requirements of § 11.14 of this Part. Exemption requests must demonstrate that monthly throughput has not exceeded ten thousand (10,000) gallons in any month since November 1991, and will not exceed ten thousand (10,000) gallons in any future month and that installation of a Stage II system at the facility is not technically and/or economically feasible and must include, at a minimum, the following information:
  - 1. The nature of the facility;
  - 2. The number of dispensers, hoses and nozzles at the facility;
  - 3. The number and volume of all gasoline storage tanks at the facility; and
  - 4. Gasoline throughput for the facility for every month for the two (2) years preceding the request or, for new facilities, expected maximum monthly gasoline throughput.

- F. Any facility that is granted an exemption by the Department pursuant to § 11.14(E) of this Part shall be required to comply with the recordkeeping and reporting requirements specified in §§ 11.14.3(A) and (J) of this Part.
- G. Gasoline dispensing facilities that dispense fuel exclusively to rental cars or corporate or commercial fleets may submit to the Department, in writing, a request for an exemption to the requirements of § 11.14 of this Part. Exemption requests must demonstrate that at least ninety-five percent (95%) of the vehicles fueled at the facility are and will continue to be equipped with an onboard refueling vapor recovery (ORVR) system.
- H. Any facility that is granted an exemption by the Department pursuant to § 11.14(G) of this Part shall be required to comply with the recordkeeping and reporting requirements specified in §§ 11.14.3(A) and (J) of this Part and the Stage I requirements in § 11.9.2 of this Part and to certify to the Department, upon request, that at least ninety-five percent (95%) of the vehicles fueled at the facility continue to be equipped with ORVR.
- I. Any gasoline dispensing facility that begins operation after June 14, 2012, the effective date of R.I. Gen. Laws § 23-23-30, shall be exempt from the Stage II vapor collection and control system requirements in §§ 11.14.2(A) and (B) of this Part. Such facilities shall be subject to the recordkeeping and reporting requirements specified in § 11.14.3(J) of this Part.
- J. Any gasoline dispensing facility that begins operation after December 25, 2013, shall not install a Stage II vapor collection and control system. Such facilities shall be subject to the recordkeeping and reporting requirements specified in § 11.14.3(J) of this Part. As specified in § 11.9.2(F)(3) of this Part, operation of a CARB-certified EVR Stage I vapor control system or a Stage I vapor control system composed of EVR components is required at such facilities upon startup.
- K. Upon Department verification and approval, after June 14, 2012, the effective date of R.I. Gen. Laws § 23-23-30, a gasoline dispensing facility may remove its Stage II vapor collection and control system from operation if excavation of one (1) or more underground gasoline storage tanks at the facility is required in order to install or repair a below-ground component of the stage II vapor collection and control system or if the facility replaces fifty percent (50%) or more of its gasoline dispensers. After December 25, 2013, compliance with the decommissioning specifications in § 11.14.5 of this Part, the recordkeeping and reporting requirements in § 11.14.3(J) of this Part and the Stage I requirements in §§ 11.9.2(F) and (G) of this Part shall constitute such department verification and approval.
- L. After December 25, 2013, any gasoline dispensing facility may remove its Stage II vapor collection and control system from operation, provided that the Stage II system is decommissioned according to the specifications in § 11.14.5 of this Part. Gasoline dispensing facilities that have decommissioned their Stage II

systems shall be subject to the recordkeeping and reporting requirements in § 11.14.3(J) of this Part and the Stage I requirements in §§ 11.9.2(F) and (G) of this Part. Any gasoline dispensing facility equipped with a Stage II vapor collection and control system must continue to operate the Stage II system according to the specifications in §§ 11.14.2, 11.14.3 and 11.14.4 of this Part until that system is decommissioned according to the specifications in § 11.14.5 of this Part.

#### **11.14.2 Prohibitions and Requirements**

- A. Any person who owns, leases, operates, or controls a gasoline dispensing facility, except those facilities meeting the specifications of §§ 11.14.1(C), (I), or (J) of this Part, those facilities that meet the exemption criteria specified in §§ 11.14.1(K) or (L) of this Part, and those facilities that are granted an exemption by the Department pursuant to the provisions of § 11.14.1(E) of this Part, shall, according to the schedule provided in § 11.14.4 of this Part:
1. Install, at each gasoline dispensing pump, a Stage II vapor collection and control system that has been certified by the California Air Resources Board (CARB) as having a minimum control efficiency of 95 percent (95%) by weight and make any modifications to the facility necessary to properly operate the system. All hoses in the system shall be coaxial. The system may include aftermarket parts, provided that those parts have been certified by CARB.
  2. All Stage II systems installed after February 7, 2001, must be certified according to CARB Vapor Recovery Certification Procedure CP-201, for underground storage tanks, or CP-205, for aboveground storage tanks, as adopted April 12, 1996, or by applicable certification procedures adopted by CARB subsequent to that date.
  3. All Stage II vapor and vent piping shall be made of a nonmetallic rigid type material unless the CARB certification for that Stage II system specifies that another type of piping may be used.
  4. Install pressure-vacuum (PV) vent valves on all Stage II systems. PV valve relief settings must be 3, plus or minus 0.5, inches of water column pressure and 8, plus or minus 2, inches water column vacuum, unless otherwise specified in the applicable CARB certification.
  5. Ensure that, prior to the initial operation of the Stage II vapor collection and control system, at least one (1) facility representative has attended a Stage II training session applicable to the Stage II system in place at that facility which has been approved by the Director and by EPA. At all times, at least one (1) person who has attended a Stage II training session applicable to the Stage II system in operation at the facility must be employed at the facility.

6. Conspicuously post operating instructions for dispensing gasoline using the vapor collection and control system on the front of each gasoline dispensing pump. Such instructions must include a warning not to attempt continued refueling after initial automatic shutoff. Instructions shall also include the telephone number of the Department and a request that inoperative control devices be reported.
  7. Maintain the Stage II vapor collection and control system in proper operating condition as specified by the manufacturer and free of defects that would impair the effectiveness of the system, as defined by the state inspection criteria.
  8. Visually inspect all aboveground parts of the Stage II vapor collection and control system once a week. Such an inspection must, at a minimum, include checking for: missing components; slits and tears in nozzle boots; face cone defects; flattened, kinked or torn hoses; and faceplate defects which hinder contact with the fill inlet area.
  9. Remove from service any dispenser if:
    - a. Any part of the Stage II vapor collection and control system associated with that dispenser fails a compliance test conducted by or ordered by the Department or is found to be defective during a Department inspection, or
    - b. Any part of the Stage II vapor collection and control system associated with that dispenser is not operating properly, or
    - c. Any part of the Stage II vapor collection and control system associated with that dispenser is found to be defective during a visual inspection performed in accordance with § 11.14.2(A)(8) of this Part.
    - d. If the defect is in a single hose or nozzle on a multiproduct dispenser, only the nozzle associated with the defect must be removed from service.
    - e. Any dispenser removed from service on the basis of test results shall be kept out of service until it has been demonstrated by retesting that the dispenser is in compliance. Any dispenser removed from service in accordance with any other provision of §§ 11.14.2(A)(9)(b) through (d) of this Part shall be kept out of service until all defective or missing parts of the Stage II vapor collection and control system associated with the dispenser have been repaired or replaced.
- B. Except as provided in § 11.14.1 of this Part, no person, owner, operator, or employee of a gasoline dispensing facility shall dispense or allow the dispensing

of gasoline from a stationary storage vessel into any motor vehicle fuel tank unless that gasoline dispenser is equipped with a properly operating Stage II vapor collection and control system certified by the California Air Resources Board and that system has been determined to be installed correctly according to the tests specified in § 11.14.3(C) of this Part. Stage II systems that were certified according to a CARB certification procedure adopted after April 12, 1996, must be operated in accordance with the provisions of the applicable certification, including Enhanced Vapor Recovery provisions, if applicable.

- C. Except as specified in §§ 11.14.2(D) and (E) of this Part, Stage II vapor collection and control systems at all gasoline dispensing facilities must be decommissioned according to the procedures specified in § 11.14.5 of this Part by December 22, 2017 unless an extension has been granted by the Department prior to this date.
- D. The owner or operator of a gasoline dispensing facility that is equipped with a Stage II vapor balance system or with a Stage II vacuum assist system that is compatible with onboard refueling vapor recovery (ORVR) systems and is granted an extension to the Stage II system removal requirement in § 11.14.2(C) of this Part must continue to operate the Stage II system according to the specifications in §§ 11.14.2, 11.14.3, and 11.14.4 of this Part until that system is decommissioned according to the specifications in § 11.14.5 of this Part.
- E. The owner or operator of a gasoline dispensing facility that is equipped with a Stage II vapor collection and control system that is incompatible with ORVR systems and if the underground storage tank vent pipe emissions at that facility are controlled by an air pollution control system and is granted an extension to the Stage II system removal requirement in § 11.14.2(C) of this Part must operate the Stage II system according to the specifications in §§ 11.14.2, 11.14.3, and 11.14.4 of this Part and must operate the air pollution control system according to the conditions specified in the extension approval until the Stage II system is decommissioned according to the specifications in § 11.14.5 of this Part.

### **11.14.3 Testing, Recordkeeping and Reporting Requirements**

- A. When requested by the Department, the owner or operator of any gasoline dispensing facility shall report the following information to the Department in writing:
  - 1. Name and address of the facility,
  - 2. Name and address of owner or operator or other responsible individual,
  - 3. Number of nozzles used to dispense gasoline at the facility, and
  - 4. Monthly throughput for each of the previous twelve (12) months.

- B. At least thirty (30) days prior to the installation of a Stage II system, the person who owns, operates, leases, or controls the gasoline dispensing facility shall notify the Department in writing of the expected date of initiation of installation of the underground piping and of the type and manufacturer of the Stage II equipment. Such notification shall not be deemed to be an approval by the Department of the equipment being installed, or as compliance with the requirements of this § 11.14 of this Part.
- C. The following tests must be conducted on any Stage II vapor collection and control system prior to initial operation of the system:
1. A Leak Test;
  2. A Liquid Blockage Test, which must be performed on every nozzle on the Stage II system;
  3. A Vapor Space Tie Test;
  4. A Ten Gallon per Minute Test;
  5. A Pressure Vacuum Vent Cap Test;
  6. For vacuum assist Stage II systems, an Air to Liquid Ratio (A/L) Test, which must be performed on every nozzle on the Stage II system. If more than one product is dispensed through a single nozzle, A/L testing must be performed on that nozzle for each product dispensed; and
  7. All additional tests specified in the CARB certification applicable to that Stage II system
- D. The function of all Stage II vapor collection and control systems shall be retested prior to operation of the system after any major system modification. Testing shall include all tests listed in § 11.14.3(C) of this Part. A major system modification is considered to be the occurrence of any one of the following:
1. A modification which would cause the facility to be a substantially modified gasoline dispensing facility, as defined in § 11.5(A)(22) of this Part of this regulation,
  2. The repair or replacement of any part of an underground piping system attached to a stationary storage tank equipped with a Stage II system, excluding repairs which occur without excavation, or
  3. The change from one certified Stage II system configuration to another.
- E. The function of all Stage II vapor collection and control systems shall be retested periodically according to the following schedule:



1. A Leak test, a Vapor Space Tie Test, a Pressure Vacuum Vent Cap Test and a Ten Gallon per Minute Test shall be performed annually;
  2. A Liquid Blockage Test shall be performed once every three (3) years on every nozzle on the Stage II system;
  3. An Air to Liquid Ratio Test shall be performed annually on all vacuum assist systems; and
  4. All other tests required in the CARB certification applicable to that Stage II system shall be performed according to the frequency specified in that certification.
- F. The Department may require a retest of the system any time that an inspection indicates that the vapor collection and control system may not be functioning properly.
- G. The owner or operator of a facility shall notify the Department of the date that testing will be conducted at least seven (7) days in advance of testing and shall certify to the Department in writing within fifteen (15) days of the test that testing has been completed. Such certification shall be signed by the owner or operator of the facility and shall include the date of installation of the Stage II vapor collection and control system and the results of the tests required in §§ 11.14.3(C) through (E) of this Part. Test results shall be signed and certified as accurate by the person who conducted the tests.
- H. Leak, Liquid Blockage, and Vapor Space Tie Tests performed pursuant to the requirements of §§ 11.14.3(C) through (E) of this Part shall use the methodology specified in EPA's Technical Guidance - "Stage II Vapor Recovery Systems for Control of Vehicle Refueling of Gasoline Dispensing Facilities, Volumes I and II," EPA 450/3-91-022 a and b), incorporated in § 11.4(F) of this Part. Ten Gallon Per Minute Tests, Air to Liquid Ratio Tests, Pressure Vacuum Vent Cap Tests and any additional tests required by the applicable CARB certification shall be performed using the current CARB methodology for those tests, unless otherwise specified by the Director.
- I. The following records shall be maintained for a period of five (5) years (unless otherwise noted) and shall be made available for inspection by representatives of the Department or the EPA on request:
1. Dates and results of weekly visual inspections as required in § 11.14.2(A)(5) of this Part,
  2. Date that any gasoline dispenser is removed from operation in compliance with the requirements specified in § 11.14.2(A)(6) of this Part and date that dispenser is returned to service,

3. Identification of parts of the Stage II vapor collection and control system that are repaired or replaced, and dates of such replacements,
  4. Identification of any tests performed and the dates and results of such tests, and
  5. Proof of attendance and completion of training, as specified in § 11.14.2(A)(2) of this Part for each employee who has received Stage II training. Such documentation shall be maintained as long as the employee continues to be employed by the facility.
- J. Records maintained pursuant to §§ 11.14.3(I)(1) through (3) of this Part for the two most current years shall be kept at the facility. All other records specified in § 11.14.3 of this Part shall be kept either at the facility or at a centralized location approved by the Department.
- K. Any facility exempted from § 11.14 of this Part according to the provisions of § 11.14.1 of this Part or §§ 11.14.1(E) through (K) of this Part shall maintain records at the facility documenting monthly throughput of gasoline at the facility and shall make those records available for inspection by representatives of the Department or the EPA on request. Documentation shall include dates and quantities of gasoline delivered and monthly records of the quantity of gasoline dispensed. All records shall be maintained for a period of five (5) years.

#### **11.14.4 Compliance Schedule**

- A. All gasoline dispensing facilities subject to § 11.14 of this Part, as identified in § 11.14.1 of this Part, must comply with the provisions of § 11.14.2 of this Part according to the following schedule:
1. All gasoline dispensing facilities constructed or substantially modified on or after 15 November 15, 1992, shall comply before commencing operation.
  2. Any gasoline dispensing facility which is initially exempt from § 11.14 of this Part because the monthly gasoline throughput at that facility did not exceed ten thousand (10,000) gallons in any month, which subsequently has a throughput in excess of 10,000 gallons in any month must comply with the provisions of § 11.14 of this Part within six (6) months of exceeding the ten-thousand (10,000) gallon threshold.

#### **11.14.5 Stage II Decommissioning Requirements**

- A. The owner or operator of a gasoline dispensing facility shall notify the Department of the date that decommissioning of the Stage II vapor collection and control system at that facility will occur at least seven (7) days in advance of beginning the decommissioning process. The notification must include the following information:

1. Name and address of the facility,
  2. Name and address of owner or operator or other responsible individual,
  3. Date that decommissioning will begin,
  4. Whether the tank top will be accessible during decommissioning,
  5. A certification that decommissioning will be conducted according to the procedures specified in § 11.14.5(B) of this Part.
- B. Decommissioning of Stage II vapor collection and control systems shall be conducted according to the decommissioning procedures specified in Section 14 of the Petroleum Equipment Institute (PEI) "Recommended Practices for Installation and Testing of Vapor-Recovery Systems at vehicle Fueling Sites" (PEI/RP300-09), incorporated in § 11.4(B) of this Part. Those practices address the following activities:
1. Safety procedures;
  2. Relief of pressure in the tank ullage;
  3. Draining liquid collection points;
  4. For vacuum-assist Stage II systems, electrical and mechanical disconnection of vapor pumping and processing units, disconnection of all electrical components, and reprogramming of the dispenser electronics;
  5. Isolating below-grade vapor piping at the base of the dispenser;
  6. Disconnecting vapor piping at the tank top;
  7. Sealing the dispenser cabinet vapor piping;
  8. Replacing hanging hardware;
  9. Replacing pressure/vacuum vent valves;
  10. Removing Stage II operating instructions from the dispensers;
  11. Testing procedures;
  12. Final Visual Check; and
  13. Documentation
- C. If excavation would be required to access the vapor piping connection at the tank top, disconnecting and capping the vapor piping at the tank top is not required at the time that the Stage II system is decommissioned. However, the vapor

recovery piping must be disconnected and capped at the tank top the first time that the vapor piping-tank top connection is exposed for any reason. Vapor piping must be disconnected and capped when the Stage II system is decommissioned if the connection between the vapor piping and the tank top is accessible without excavation.

- D. The following tests must be conducted and passed before the gasoline dispensing facility is returned to operation after decommissioning the Stage II system:
1. A Pressure Decay 2-inch Test, using CARB test procedure TP-201.3, incorporated in § 11.4(E) of this Part;
  2. A Vapor Tie Test using CARB test procedure TP-201.3C, incorporated in § 11.4(E) of this Part;
  3. A Pressure/Vacuum Vent Valve Test, using CARB test procedure TP-201.1E, incorporated in § 11.4(E) of this Part;
  4. For facilities with EVR rotatable product adaptors and vapor adaptors, a Static Torque Rotatable Adaptor Test, using CARB test procedure 201.1B incorporated in § 11.4(E) of this Part; and
  5. For facilities equipped with a EVR Stage I vapor control system, either a Leak Rate or Drop Tube/Drain Valve Assembly Test, using CARB test procedure 201.1C, incorporated in § 11.4(E) of this Part, or a Leak Rate of Drop Tube/Overfill Prevention Devices Test, using CARB test procedure 201.1D incorporated in § 11.4(E) of this Part.
- E. The owner or operator of a gasoline dispensing facility shall certify to the Department in writing within thirty (30) days of decommissioning a Stage II system that decommissioning has been completed. Such certification shall include the date of decommissioning, a statement signed by the owner or operator of the facility that decommissioning was conducted according to the PEI specifications sited in § 11.14.5(B) of this Part, and the date and results of the tests specified in § 11.14.5(D) of this Part. Test results shall be signed and certified as accurate by the person who conducted the tests.

**250-RICR-120-05-15**

## **TITLE 250 – DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

### **CHAPTER 120 – AIR RESOURCES**

#### **SUBCHAPTER 05 - AIR POLLUTION CONTROL**

PART 15 - Control of Organic Solvent Emissions

### **15.1 Purpose and Authority**

#### **15.1.1 Purpose**

The purpose of this regulation is to limit emissions of volatile organic compounds from stationary sources of air contaminants.

#### **15.1.2 Authority**

These regulations are authorized pursuant to R.I. Gen. Laws § 42-17.1-2(19) and R.I. Gen. Laws Chapter 23-23, and have been promulgated pursuant to the procedures set forth in the R.I. Administrative Procedures Act, R.I. Gen. Laws Chapter 42-35.

### **15.2 Application**

The terms and provisions of this regulation shall be liberally construed to permit the Department to effectuate the purposes of state laws, goals and policies.

### **15.3 Severability**

If any provision of this regulation or the application thereof to any person or circumstance, is held invalid by a court of competent jurisdiction, the validity of the remainder of the regulation shall not be affected thereby.

### **15.4 Incorporated Materials**

These regulations hereby adopt and incorporate 40 C.F.R. § 60 Appendix A-7 Methods 24 and 25 (2018) by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.

### **15.5 Definitions**

- A. Unless otherwise expressly defined in this section, the terms used in this regulation shall be defined by reference to [Part 0](#) of this Subchapter (General

Definitions). As used in this regulation, the following terms shall, where the context permits, be construed as follows:

1. "Volatile Organic Compound" or "VOC" means "Volatile Organic Compound and Halogenated Organic Compound" or "VOC and HOC" in §§ 15.6 and 15.7 of this Part.

## 15.6 Applicability and Exceptions

- A. This regulation applies to all facilities which have or have had VOC emissions from all pollutant-emitting equipment or activities of at least fifty (50) tons per year potential emissions of VOC.
- B. The RACT requirements in § 15.7 of this Part do not apply to:
  1. Equipment and pollutant-emitting activities that are regulated by [Part 11](#) of this Subchapter (Petroleum Liquids Marketing and Storage), [Part 19](#) of this Subchapter (Control of Volatile Organic Compounds from Surface Coating Operations), [Part 21](#) of this Subchapter (Control of Volatile Organic Compound Emissions from Printing Operations), [Part 22](#) of this Subchapter (Air Toxics), [Part 25](#) of this Subchapter (Control of Volatile Organic Compound Emissions from Cutback and Emulsified Asphalt), [Part 26](#) of this Subchapter (Control of Organic Solvent Emissions from Manufacturers of Synthesized Pharmaceutical Products), [Part 30](#) of this Subchapter (Control of Volatile Organic Compounds from Automobile Refinishing Operations), [Part 32](#) of this Subchapter (Control of Volatile Organic Compounds From Marine Vessel Loading Operations), [Part 35](#) of this Subchapter (Control of Volatile Organic Compounds and Volatile Hazardous Air Pollutants from Wood Products Manufacturing Operations), [Part 36](#) of this Subchapter (Control of Emissions from Organic Solvent Cleaning), and [Part 44](#) of this Subchapter (Control of Volatile Organic Compounds from Adhesives and Sealants) or which have been determined to be BACT or LAER in a permit issued by the Office of Air Resources after November 15 1990, pursuant to [Part 9](#) of this Subchapter (Air Pollution Control Permits);
  2. The spraying or other employment of insecticides, pesticides or herbicides; and
  3. The blending of distillate or residual fuel oils.

## 15.7 Emission Limitations

- A. Any facility which has or ever has had potential emissions of VOC of fifty (50) tons/year or more, as defined in [Part 0](#) of this Subchapter (General Definitions), from equipment not specifically controlled by any other VOC regulation, shall

install and operate in compliance with RACT, as specified in an enforceable document issued by the Director.

- B. Facilities using add on controls to comply with RACT must show that the equipment meets specific capture and control performance standards which will be set in an enforceable document. Control efficiency of the equipment will be determined using EPA-approved test methods. Calculations will be done on a solids basis. Continuous compliance will be maintained at all times. Compliance averaging times will be met according to the control device chosen and EPA test methods (as codified in 40 C.F.R. § 60, Appendix A), incorporated in § 15.4 of this Part, as follows:

Compliance Method	EPA Reference Test Method	Test Averaging Time
Reformulation	24	Instantaneous
Solvent destruction or solvent recovery except carbon adsorption	25	3 hours
Carbon adsorption	25 or other test method as appropriate	7-day rolling average

- C. Or other methods approved by the Director and EPA. Once the control efficiency has been determined for any add-on control device by Reference Method 25, or any alternative method approved by the Department and EPA, compliance shall be determined on an instantaneous basis (e.g. determined control efficiency shall be used to calculate whether samples from the process meet the applicable emissions limit.)
- D. The owner or operator of a facility using carbon adsorption as a control measure shall obtain data on daily solvent usage and solvent recovery and determine the solvent recovery efficiency of the system every day. The recovery efficiency for each day shall be computed as the ratio of the total recovered solvent for that day and the prior six (6) consecutive operating days to the total solvent usage for the same seven-day period. This ratio shall be expressed as a percentage. Facilities may apply to the Director for an alternative averaging time if meeting the emission limitation as a seven-day rolling average is not technically or economically feasible. In no event shall the averaging period exceed a 30-day rolling period. All alternative averaging periods must be consistent with EPA guidance.
- E. Every two (2) years, a facility may be required to undergo RACT review at the discretion of the Department.

- F. Any facility which is subject to the requirements of § 15.7(A) of this Part, but has not been required to install and operate in compliance with RACT shall, within six (6) months after becoming a fifty (50) ton per year potential VOC source, submit to the Director a RACT proposal for approval which includes all information specified in § 15.7(G) of this Part.
- G. All RACT proposals submitted to comply with § 15.7(F) of this Part shall include the following information:
1. An inventory of all VOC-emitting equipment at the facility;
  2. An inventory of all VOC-emitting equipment at the facility not exempted from the RACT requirement of this section according to § 15.6(B) of this Part;
  3. Identification of any additional VOC-emitting activities at the facility;
  4. The maximum capacity of each piece of VOC-emitting equipment not exempted under § 15.6(B) of this Part;
  5. The actual maximum amount of VOC emitted each in any day from each piece of VOC-emitting equipment at the facility not exempted under § 15.6(B) of this Part;
  6. An examination of the technical and economic feasibility of installing add-on VOC control equipment to control emissions from each piece of VOC equipment not exempted under § 15.6(B) of this Part;
  7. An examination of the technical and economic feasibility of reducing VOC use in each piece of equipment not exempted under § 15.6(B) of this Part and in any additional VOC-emitting activities at the facility;
  8. An examination of the technical and economic feasibility of using different process equipment or different processes to reduce VOC use or emissions not exempted under § 15.6(B) of this Part;
  9. The control option or combination of control options selected, including emission limits and the test methods to demonstrate compliance;
  10. The amount of reduction in VOC emissions that will be associated with implementing the selected control option;
  11. A schedule for implementation, including a demonstration of compliance;
  12. A means of assessing continuous compliance, including test methods, monitoring devices and reporting requirements;



13. A description of future research that will be conducted by the owner or operator to further reduce VOC emissions beyond the level of emissions proposed; and
  14. Any additional information requested by the Director that is deemed necessary to determine RACT.
- H. After reviewing a RACT proposal, the Department, in consultation with the EPA, shall prepare a proposed enforceable document specifying RACT for the facility. The enforceable document shall be subject to a 30-day public comment period. A public hearing for interested persons to appear and to submit written or oral comments on the enforceable document shall be held upon request. The Director may also hold a hearing at their discretion, whenever they believe there is a significant degree of public interest in the proposed action. If held, a hearing shall take place no earlier than thirty (30) days nor later than sixty (60) days following initial public notice. Comments from the applicant and/or any interested persons shall be recorded at the public hearing. Written comments, to be considered part of the record, shall be submitted during the public comment period, which commences on the date of initial public notice and extends until close of business on the day of the public hearing. The final enforceable document shall be submitted to the EPA for approval as a source specific revision to the State Implementation Plan.
- I. Any facility which is subject to the requirements of § 15.7 of this Part and did not submit a RACT proposal as required by § 15.7(F) of this Part, shall comply with one of the following requirements:
1. Install and operate an air pollution control system which controls emissions from each piece of VOC-emitting equipment and each VOC-emitting activity not exempt under the provisions of § 15.6(C) of this Part by reducing inlet emissions by at least ninety-five percent (95%) and which is designed to capture and control VOC emissions to obtain an overall reduction efficiency of eighty-five percent (85%) on a daily basis; and submit the following information to the Office of Air Resources:
    - a. An inventory of all VOC-emitting equipment at the facility;
    - b. An inventory of all VOC-emitting equipment at the facility not exempt under § 15.6(B) of this Part;
    - c. The maximum capacity of each piece of VOC-emitting equipment at the facility not exempt under § 15.6(B) of this Part;
    - d. The actual amount of VOC emitted each day from each piece of VOC-emitting equipment at the facility not exempt under § 15.6(B) of this Part;

- e. A description of the proposed VOC emission capture and control system;
  - f. A permit application as required by [§ 9.7](#) of this Subchapter, if applicable;
  - g. Testing procedures, monitoring procedures, and recordkeeping and reporting procedures which will be used to demonstrate, to the satisfaction of the Director and EPA, compliance with this section; and
  - h. A schedule of implementation, including a demonstration of compliance; or
2. Implement a program to reduce daily VOC use and VOC emissions, such that actual VOC emissions from all VOC-emitting activities and equipment not exempted by the provisions of § 15.6(B) of this Part do not exceed twenty percent (20%) of the daily VOC emissions from that equipment and those activities during each day of the calendar year the source becomes a potential fifty (50) ton per year VOC source, calculated on either a mass of VOC per mass of solids applied basis if the affected VOC emitting equipment applies to surface coating, or a mass of VOC per unit of production basis. The following information shall be submitted:
- a. An inventory of all VOC-emitting equipment at the facility;
  - b. An inventory of all VOC-emitting equipment at the facility not exempt under § 15.6(B) of this Part;
  - c. The maximum capacity of each piece of VOC-emitting equipment at the facility not exempt under § 15.6(B) of this Part;
  - d. The actual amount of VOC emitted each day from each piece of VOC-emitting equipment at the facility not exempt under § 15.6(B) of this Part;
  - e. A calculation of the average daily VOC emissions in the calendar year the source became a potential fifty (50) ton per year VOC source, stated in terms of either mass of VOC emitted per mass of solids applied or mass of VOC emitted per unit of production;
  - f. A calculation of the average daily VOC emissions anticipated upon implementation of the VOC use and reduction plan, stated in terms of either mass of VOC emitted per mass of solids applied or mass of VOC emitted per unit of production;

- g. Testing procedures, monitoring procedures, and recordkeeping and reporting procedures to demonstrate, to the satisfaction of the Director and EPA, compliance with this section; and
- h. A schedule of implementation, including a demonstration of compliance.

**250-RICR-120-05-19**

## **TITLE 250 – DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

### **CHAPTER 120 – AIR RESOURCES**

#### **SUBCHAPTER 05 – AIR POLLUTION CONTROL**

PART 19 – Control of Volatile Organic Compounds from Coating Operations

### **19.1 Purpose and Authority**

#### **19.1.1 Purpose**

The purpose of this regulation is to limit the emissions of volatile organic compounds from coating operations.

#### **19.1.2 Authority**

These regulations are authorized pursuant to R.I. Gen. Laws § 42-17.1-2(19) and R.I. Gen. Laws Chapter 23-23, and have been promulgated pursuant to the procedures set forth in the R.I. Administrative Procedures Act, R.I. Gen. Laws Chapter 42-35.

### **19.2 Application**

The terms and provisions of this regulation shall be liberally construed to permit the Department to effectuate the purposes of state laws, goals and policies.

### **19.3 Severability**

If any provision of this regulation or the application thereof to any person or circumstance, is held invalid by a court of competent jurisdiction, the validity of the remainder of the regulation shall not be affected thereby.

### **19.4 Incorporated Materials**

These regulations hereby adopt and incorporate 40 C.F.R. § 60 Appendix A-7 Methods 24, 24A, 25, 25A, and 25B (2019) by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.

### **19.5 Definitions**

- A. Unless otherwise expressly defined in this section, the terms used in this regulation shall be defined by reference to Part 0 of this Subchapter (General

Definitions). As used in this regulation, the following terms shall, where the context permits, be construed as follows:

1. "Actual emissions" means the quantity of volatile organic compounds emitted from a source during a particular time period.
2. "Adhesion primer" means a coating that is applied to a polyolefin part to promote the adhesion of a subsequent coating. An adhesion primer is clearly identified as an adhesion primer or adhesion promoter on its accompanying material safety data sheet.
3. "Air-dried coating" means a coating that is dried by the use of air or forced warm air at temperatures up to ninety degrees Celsius (90°C) or one hundred and ninety-four degrees Fahrenheit (194°F).
4. "Airless spray application" means a coating spray application system using high fluid pressure, without compressed air, to atomize the coating.
5. "Air-assisted airless spray application" means a coating spray application system using fluid pressure to atomize the coating and low-pressure air to adjust the shape of the spray pattern.
6. "Antifouling coating" means a coating applied to the underwater portion of a pleasure craft to prevent or reduce the attachment of biological organisms and registered with the United States Environmental Protection Agency (EPA) as a pesticide under 7 U.S.C. § 136 (Federal Insecticide, Fungicide, and Rodenticide Act).
7. "Antifouling sealer" or "tie coat" means a coating applied over biocidal antifouling coating for the purpose of preventing release of biocides into the environment or to promote adhesion between an antifouling coating and a primer or another antifouling coating.
8. "As-applied" means the composition of coating at the time it is applied to a substrate, including any solvent, catalyst or other substance added to the coating as supplied by the manufacturer calculated using the procedure in §§ 19.13(A) or (B) of this Part.
9. "Baked" means cured at a temperature at or above ninety degrees Celsius (90°C) or one hundred ninety-four degrees Fahrenheit (194°F).
10. "Business machine" means a device that uses electronic or mechanical methods to process information, perform calculations, print or copy information or convert sound into electrical impulses for transmission, including devices listed in standard industrial classification numbers 3572, 3573, 3574, 3579, and 3661 and photocopier machines, a subcategory of standard industrial classification number 3861.

11. "Camouflage coating" means a coating used, principally by the military, to conceal equipment from detection.
12. "Capture efficiency" means the ratio of VOC emissions delivered to the control device to the total VOC emissions resulting from the coating and related cleaning, expressed as a percentage.
13. "Class II hardboard paneling finish" means finishes that meet the specifications of Voluntary Product Standard PS-59-73 as approved by the American National Standards Institute.
14. "Clear coating" means a coating which lacks color and opacity or is transparent and which uses the undercoat as a reflective base or undertone color.
15. "Clear wood finishes" means a clear and semi-transparent topcoat applied to a wood substrate to provide a transparent or translucent film.
16. "Coating" means a material that is deposited in a thin, persistent, uniform layer across the surface of a substrate for aesthetic, protective or functional purposes, including but not limited to, paints, primers, inks and maskants.
  - a. "Coating" does not include protective oils, acids and bases.
17. "Coating applicator" means a device, mechanism, or apparatus used to apply a coating. Common types of application techniques include knife, roll, spray or dip.
18. "Coating of plastic parts of automobiles and trucks" means the coating of any plastic part that is or shall be assembled with other parts to form an automobile or truck.
19. "Coating of plastic parts of business machines" means the coating of any plastic part that is or shall be assembled with other parts to form a business machine.
20. "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 for a coating unit to have an oven or flash-off area.
21. "Coil coating" means the application of a coating to any continuous metal strip with thickness of 0.006 inch or more that is packaged in a roll or coil.
22. "Dip coating" means a method of applying a coating to a surface by submersion into and removal from a coating bath.

23. "Drum" means any cylindrical metal shipping container of 13- to 110-gallon capacity.
24. "Electric dissipating coating" means a coating that rapidly dissipates a high-voltage electric charge.
25. "Electric-insulating and thermal-conducting coating" means a coating that displays an electrical insulation of at least one thousand (1000) volts DC per mil on a flat test plate and an average thermal conductivity of at least 0.27 BTU per hour-foot-degree-Fahrenheit.
26. "Electric-insulating varnish" means a non-convertible-type coating applied to electric motors, components of electric motors, or power transformers, to provide electrical, mechanical, and environmental protection or resistance.
27. "Electrostatic application" means a method of applying coating particles or coating droplets to a grounded surface by electrically charging such particles or droplets.
28. "Electrostatic prep coat" means a coating that is applied to a plastic part solely to provide conductivity for the subsequent application of a prime, a topcoat, or other coating through the use of electrostatic application methods. An electrostatic prep coat is clearly identified as an electrostatic prep coat on its accompanying material safety data sheet.
29. "EMI/RFI shield coating" means a coating that functions to attenuate electromagnetic interference, radio frequency interference signals or static discharge.
30. "Emission baseline" means a level of emissions calculated by multiplying two factors:
  - a. The lowest of the source's actual or allowable emission rate in emissions per unit of production; and,
  - b. The source's actual capacity utilization, or units of production, over some representative time period. Generally, the time period is the preceding two-year average unless the source can demonstrate that those years were not representative of historical production.
31. "Etching filler" means a coating that contains less than twenty-three percent (23%) solids by weight and at least 0.5% acid by weight and is used as a substitute for the application of a pretreatment coating followed by a primer.

32. "Extreme high gloss coating" means any coating which achieves greater than ninety percent (90%) reflectance on a sixty degree (60°) meter when tested by ASTM Method D 523-89.
33. "Extreme performance coatings" means coatings intended for exposure to any of the following; outdoor weather conditions all of the time, temperatures frequently above ninety-five degrees Celsius (95°C) or two-hundred and three degrees Fahrenheit (203°F), detergents, abrasive and scouring agents, solvents, corrosive atmospheres, or similar environmental conditions.
34. "Fabric coating" means the coating of a textile substrate with a knife, roll or rotogravure coater to impart properties that are not initially present, such as strength, stability, water or acid repellency, or appearance.
35. "Finish primer or surfacer" means a coating applied with a wet film thickness of less than ten (10) millimeters prior to the application of a topcoat for purposes of providing corrosion resistance, adhesion of subsequent coatings, a moisture barrier or promotion of a uniform surface necessary for filling in surface imperfections.
36. "Flatwood paneling coating" means the application of a coating to flat wood panels including: printed interior panels made of hardboard plywood and thin particle board (i.e., less than or equal to 0.25 inches in thickness) natural finish hardboard plywood panels; and hardboard paneling with Class II finishes.
  - a. Flatwood paneling does not include: Class I hardboard panels, particle board used in furniture or wood products, insulation board, exterior siding, tile board, and soft wood plywood coating lines.
37. "Flexible coating" means any coating that is required to comply with engineering specifications for impact resistance, mandrel bend, or elongation as defined by the original equipment manufacturer.
38. "Flexible primer" means a primer with elastomeric qualities that provides a compatible, flexible substrate over bonded sheet rubber and rubber-type coatings.
39. "Flow coating" means a non-atomized technique of applying coating to a substrate using a fluid nozzle in a fan pattern with no air supplied to the nozzle.
40. "Fog coat" means a coating that is applied to a plastic part at a thickness of no more than 0.5 mils of coating solids for the purpose of color matching without masking a molded-in texture.



41. "Gloss reducer" means a coating that is applied to a plastic part solely to reduce the shine of the part. A gloss reducer shall not be applied at a thickness of more than 0.5 mils of coating solids.
42. "Hardboard" means a panel manufactured primarily from inter-felted ligno-cellulosic fibers that are consolidated under heat and pressure in a hot press.
43. "Hardwood plywood" means plywood whose surface layer is a veneer of hardwood.
44. "Heat-resistant coating" means a coating that is required to withstand a temperature of at least 204.5°C (400°F) during normal use.
45. "High build primer or surfacer" means a coating applied with a wet film thickness of ten (10) millimeters or more prior to the application of a topcoat for purposes of providing corrosion resistance, adhesion of subsequent coatings, a moisture barrier or promotion of a uniform surface necessary for filling in surface imperfections.
46. "High-gloss coating" means a coating that achieves at least eight-five percent (85%) reflectance on a sixty (60) degree meter when tested by ASTM Method D-523.
47. "High-temperature coating" means a coating that during normal use must withstand a temperature of at least four hundred twenty-six degrees Celsius (426°C) of eight-hundred degrees Fahrenheit (800°F).
48. "HVLP spray application" means to apply a coating using a high-volume, low-pressure spray application system that is designed to operate at air pressures between 0.1 and 10 pounds per square inch gauge, measured dynamically at the center of the air cap and the air horns.
49. "Knife coating" means the application of a coating material to a substrate by means of drawing the substrate beneath a knife that spreads the coating evenly over the full width of the substrate.
50. "Large appliance coating" means the application of a coating to the surface of component metal parts (including, but not limited to, doors, cases, lids, panels and interior parts) of any residential or commercial washer, dryer, freezer, range, refrigerator, water heater, dishwasher, trash compactor, air conditioner, or other similar products under Standard Industrial Classification Code 363.
  - a. Large appliance coating does not include 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 0.25 gallons in any one 8-hour period.

51. "Magnet wire coating" means the application of a coating in which an electrically insulating varnish or enamel is applied onto the surface of a wire for use in electrical machinery.
52. "Metal furniture coating" means the application of a coating to any furniture piece made of metal or any metal part that will be assembled with other metal, wood, fabric, plastic, or glass parts to form a furniture piece including, but not limited to, tables, chairs, waste baskets, beds, desk, locker, benches, shelving, file cabinets, and room dividers.
53. "Metallic coating" means a coating that contains more than five (5) grams of metal particle per liter of coating, as-applied;
54. "Military specification coating" means a coating which has a formulation approved by a United States Military Agency for use on military equipment.
55. "Miscellaneous metal and plastic parts coating" means a coating applied to the surface of a varied range of metal and plastic parts and products constructed either entirely or partially from metal or plastic. These miscellaneous metal products and plastic parts include, but are not limited to, metal and plastic components of the following types of products as well as the products themselves:
  - a. Automotive or transportation equipment;
  - b. Bicycles and sporting goods;
  - c. Construction equipment;
  - d. Electronic equipment;
  - e. Extruded aluminum structural components;
  - f. Fabricated metal products (metal covered doors, frames, etc.);
  - g. Interior or exterior automotive parts;
  - h. Laboratory and medical equipment;
  - i. Lawn and garden equipment;
  - j. Motor vehicle accessories;
  - k. Recreational vehicles;
  - l. Pleasure craft or recreational boats;

- m. Small and large farm machinery (harvesting, fertilizing and planting machines, tractors, combines, lawn and garden tractors, lawn mowers, rototillers, etc.);
- n. Small appliances (fans, mixers, blenders, crock pots, dehumidifiers, vacuum cleaners, etc.);
- o. Commercial machinery (business machines, office equipment, computers and auxiliary equipment, typewriters, calculators, vending machines, etc.);
- p. Toys;
- q. Steel drums; and
- r. Metal pipes.
- s. Miscellaneous metal or plastic parts or product coating does not include:
  - (1) Aerospace coating;
  - (2) Automotive refinishing subject to Part 30 of this Subchapter (Control of Volatile Organic Compounds from Automobile Refinishing Operations);
  - (3) Architectural and industrial maintenance coating subject to Part 33 of this Subchapter (Control of VOC from Architectural Coatings and Industrial Maintenance Coatings);
  - (4) Wood furniture coating subject to Part 35 of this Subchapter (Control of Volatile Organic Compounds and Volatile Hazardous Air Pollutants from Wood Products Manufacturing Operations);
  - (5) Industrial adhesives and sealants subject to Part 44 of this Subchapter (Control of VOC from Adhesives and Sealants);
  - (6) Can, coil, large appliance, magnet wire, and metal furniture coating and cleaning operations subject to specific separate requirements in this Part;
  - (7) Fiberglass boat manufacturing materials subject to Part 51 of this Subchapter (Control of Volatile Organic Compound Emissions from Fiberglass Boat Manufacturing);
  - (AA) Specifically, the miscellaneous metal products and plastic parts categories do not include gel coats

applied to fiber-reinforced plastic (fiberglass composite) products removed from the mold or used as in-mold coatings in the production of fiberglass parts and body fillers and putties used to repair surface defects in fiberglass composite parts, or putties used to bond fiberglass composite parts together. These putties are part of the composite structure and are not coatings.

- (8) Automobiles and light-duty truck assembly coatings;
  - (9) Shipbuilding and ship repair facilities;
  - (10) Coating applied to test materials, test panels and coupons in research and development, quality control or performance testing.
56. "Multi-colored coating" means a coating packaged in a single container and applied in a single coat which exhibits more than one color when applied.
57. "Multicomponent coating" means a coating which is packaged in two or more parts, which parts are combined before application, and where a coreactant from one part of the coating chemically reacts, at ambient conditions, with a coreactant from another part of the coating.
58. "Natural finish hardwood plywood panels" means panels whose original grain pattern is enhanced by essentially transparent finishes frequently supplemented by fillers and toners.
59. "One-component coating" means a coating that is ready for application as packaged for sale, except for the addition of a thinner to reduce the viscosity.
60. "Optical coating" means a coating applied to an optical lens.
61. "Oven" means a chamber within which heat is used to bake, cure or polymerize and/or dry a surface coating.
62. "Overvarnish" means a coating applied directly over ink to reduce the coefficient of friction, to provide gloss or to protect the finish against abrasion and corrosion.
63. "Pail" means any cylindrical metal shipping container with a capacity of greater than or equal to one (1) and less than thirteen (13) gallons and constructed of 29-gauge (0.0141 inches) and heavier material.

64. "Pan-backing coating" means a coating applied to the surface of pots, pans, or other cooking implements that are exposed directly to a flame or other heating elements.
65. "Paper, film and foil coating" means the application of a continuous layer of coating across the width or any portion of the width of a paper, film or foil substrate to:
  - a. Create a functional or protective layer;
  - b. Saturate a substrate for lamination; or
  - c. Provide adhesion between two substrates for lamination.
  - d. Paper film and foil coating does not include:
    - (1) Coating performed on or in-line with any offset lithographic, screen, letterpress, flexographic, rotogravure, or digital printing press is part of a printing process.
66. "Pleasure craft" means any marine or freshwater vessel manufactured or operated primarily for recreational purposes.
67. "Pleasure craft coating" means any marine coating, except unsaturated polyester resin (fiberglass), applied to a pleasure craft or to parts and components of a pleasure craft.
68. "Pressure sensitive adhesive" means adhesive that forms a bond when pressure is applied, without activation via solvent, water or heat.
69. "Pressure sensitive tape and label coating" means the application of a pressure sensitive adhesive to a paper, film or foil substrate.
70. "Pretreatment coating" means a coating, containing no more than twelve percent (12%) solids by weight and at least one-half percent (0.5%) acid by weight, applied directly to metal surfaces to provide surface etching, adhesion and ease when stripping.
71. "Pretreatment wash primer" means a coating, containing at least 0.1 percent acid by weight and no more than twenty-five percent (25%) solids by weight, that is used to provide surface etching and is applied directly to fiberglass and metal surfaces to provide corrosion resistance and adhesion of subsequent coatings.
72. "Prime coat" means the first of two or more coatings applied to a surface.

73. "Printed interior panels" means panels whose grain or natural surface is obscured by fillers and basecoats upon which a simulated grain or decorative pattern is printed.
74. "Refinishing" means the repainting of used equipment.
75. "Related cleaning" means the removal of uncured coatings, coating residue, and contaminants from:
  - a. Miscellaneous metal and plastic parts prior to the application of coatings,
  - b. Miscellaneous metal and plastic parts between coating applications, or
  - c. Transfer lines, storage tanks, spray booths, and coating application equipment.
76. "Repair coating" means a coating used to recoat portions of a product that has sustained mechanical damage to the coating following normal painting operations.
77. "Resist coat" means a coating that is applied to a plastic part before metallic plating to prevent deposits of metal on portions of the plastic part.
78. "Roll coating" means a coating method using a machine that applies coating to a substrate by continuously transferring coating through a set of oppositely rotating rollers.
79. "Safety-indicating coating" means a coating that changes in a physical characteristic, such as color, to indicate unsafe conditions.
80. "Shock-free coating" means a coating applied to electrical components to protect the user from electric shock. The coating has characteristics of being of low capacitance and high resistance and having resistance to breaking down under high voltage.
81. "Silicone-release coating" means any coating which contains silicone resin and is intended to prevent food from sticking to metal surfaces such as baking pans.
82. "Solar-absorbent coating" means a coating that has as its prime purpose the absorption of solar radiation.
83. "Solid-film lubricant" means a very thin coating consisting of a binder system containing as its chief pigment material one or more of molybdenum disulfide, graphite, polytetrafluoroethylene or other solids that act as a dry lubricant between faying surfaces.

84. "Stencil coating" means a coating that is applied over a stencil to a plastic part at a thickness of one (1) mil or less of coating solids. Stencil coats are most frequently letters, numbers, or decorative designs.
85. "Texture coat" means a coating that is applied to a plastic part which, in its finished form, consists of discrete raised spots of the coating.
86. "Thin particleboard" means a manufactured board that is 0.25 inch or less in thickness made of individual wood particles that have been coated with a binder and formed into flat sheets by pressure.
87. "Tile board" means paneling that has a colored, waterproof coating.
88. "Topcoat" means the final film or series of films of coating applied to a surface;
89. "Transfer efficiency" means the portion of coating solids that adheres to the pleasure craft surface during the application process, expressed as a percentage of the total volume of coating solids delivered by the applicator.
90. "Translucent coating" means a coating which contains binders and pigment and is formulated to form a colored, but not opaque, film;
91. "Two-component coating" means a coating requiring the addition of a separate reactive resin, commonly known as a catalyst, before application to form an acceptable dry film.
92. "Vacuum-metalizing coating" means the undercoat applied to a substrate on which the metal is deposited prior to a vacuum-metalizing process or the overcoat applied directly to the metal film after a vacuum-metalizing process;
93. "Vacuum metalizing process" means the process of evaporating metals inside a vacuum chamber and depositing them on a substrate to achieve a uniform metalized layer;
94. "Vinyl coating" means the application of a coating or coatings on a vinyl coated paper, vinyl coated fabric, or vinyl substrate or printing on vinyl-coated fabric or vinyl sheets.
95. "Volatile Organic Compound" or "VOC" means Volatile Organic Compound and Halogenated Organic Compound or VOC and HOC.

## **19.6 Applicability**

### **19.6.1 Coil Coating**

This regulation applies to the owner or operator of a coil coating operation whose actual VOC emissions, from all coil coating, including related cleaning activities are greater than or equal to 2.7 tons per rolling 12-month period, prior to controls.

#### **19.6.2 Fabric and/or Vinyl Coating**

This regulation applies to the owner or operator of a fabric and/or vinyl coating operation whose actual VOC emissions, from fabric and/or vinyl coating, including related cleaning activities, are greater than or equal to 2.7 tons per rolling 12-month period, prior to controls.

#### **19.6.3 Flatwood Paneling Coating**

This regulation applies to the owner or operator of a flatwood paneling coating operation whose actual VOC emissions from flatwood paneling coating, including related cleaning activities, are greater than or equal to 2.7 tons per 12-month rolling period, prior to controls.

#### **19.6.4 Large Appliance Coating**

- A. This regulation applies to the owner or operator of a large appliance coating operation whose actual VOC emissions from large appliance coating, including related cleaning activities are greater than or equal to 2.7 tons per rolling 12-month period, prior to controls.
- B. Exemptions
  - 1. The emissions limitations in § 19.7.4 of this Part do not apply to
    - a. Stencil coatings;
    - b. Safety indicating coatings;
    - c. Solid-film lubricants;
    - d. Electric-insulating;
    - e. Thermal-conducting coatings;
    - f. Touch-up coatings; or
    - g. Coating applications utilizing hand-held aerosol cans.

#### **19.6.5 Magnet Wire Coating**

This regulation applies to the owner or operator of a magnet wire coating unit, whose actual VOC emissions from magnet wire coating, including related cleaning activities, are greater than or equal to 2.7 tons per rolling 12-month period, prior to controls.



### **19.6.6 Metal Furniture Coating**

- A. This regulation applies to the owner or operator of a metal furniture coating operation, whose actual VOC emissions from metal furniture coating, including related cleaning activities, are greater than or equal to 2.7 tons per rolling 12-month period, prior to controls.
- B. Exemptions
  - 1. The emissions limitations in § 19.7.6 of this Part do not apply to:
    - a. Stencil coatings;
    - b. Safety indicating coatings;
    - c. Solid-film lubricants;
    - d. Electric-insulating and thermal-conducting coatings;
    - e. Touch-up coatings; or
    - f. Coating application utilizing hand-held aerosol cans.

### **19.6.7 Miscellaneous Metal and/or Plastic Parts Surface Coating**

- A. This regulation applies the owner or operator of a miscellaneous metal and/or plastic parts coating operation whose actual emissions from miscellaneous metal and/or plastic parts coating, including related cleaning activities, are greater than or equal to 2.7 tons per rolling 12-month period, prior to controls.
- B. Exemptions
  - 1. For miscellaneous metal and plastic parts coating, the emissions limitations in § 19.7.7(A) of this Part and application methods in § 19.7.7(B) of this Part shall not apply to:
    - a. Aerosol coating products; and
    - b. Powder coatings.
  - 2. For miscellaneous metal parts coating the emissions limitations § 19.7.7(A) of this Part and application methods in § 19.7.7(B) of this Part shall not apply to:
    - a. Stencil coating;
    - b. Safety-indicating coating;
    - c. Solid-film lubricant;

- d. Electric-insulating and thermal-conducting coating;
  - e. Magnetic data storage disk coating;
  - f. Plastic extruded onto metal parts to form a coating.
3. For miscellaneous metal parts coating the application methods in § 19.7.7(B) of this Part shall not apply to:
- a. Touch-up coatings;
  - b. Repair coatings; or
  - c. Textured finish coating,
4. For miscellaneous plastic parts coating the emissions limitations in § 19.7.7(A) of this Part shall not apply to:
- a. Touch-up and repair coatings;
  - b. Stencil coatings applied on clear or translucent substrates;
  - c. Clear or translucent coatings;
  - d. Coatings applied at a paint manufacturing facility while conducting performance tests on the coatings;
  - e. Any individual coating category used in volumes less than fifty (50) gallons in any one 12-month rolling period, if substitute compliant coatings are not available, provided that the total usage of all such coatings does not exceed two-hundred (200) gallons per 12-month rolling period, per facility;
  - f. Reflective coating applied to highway cones;
  - g. Mask coatings that are less than 0.5-millimeter-thick when dried and the area coated is less than twenty-five (25) square inches;
  - h. EMI/RFI shielding coatings; and
  - i. Heparin-benzalkonium chloride (HBAC)-containing coatings applied to medical devices, provided that the total usage of all such coatings does not exceed one-hundred (100) gallons per 12-month rolling period, per facility.
5. For miscellaneous plastic parts coating, the application methods in § 19.7.7(B) of this Part do not apply to airbrush operations using five (5) gallons or less per year of coating.

6. For automotive/transportation and business machine plastic parts coating the emissions limitations specified in § 19.7.7(A) of this Part shall not apply to:
  - a. Texture coatings;
  - b. Vacuum-metalizing coatings;
  - c. Gloss reducers;
  - d. Texture topcoats;
  - e. Adhesion primers;
  - f. Electrostatic preparation coatings;
  - g. Resist coatings; and
  - h. Stencil coatings.
7. For pleasure craft coating the application methods in § 19.7.7(B) of this Part do not apply to the application of high gloss coatings as defined in § 19.5(A)(46) of this Part.

#### **19.6.8 Paper, Film, and Foil Coating**

- A. The emissions limitations in § 19.7.8(A) of this Part apply to the owner and operator of a paper coating operation, whose actual VOC emissions, including related cleaning activities, are greater than or equal to 2.7 tons per rolling 12-month period, prior to controls.
- B. The emission limitations in § 19.7.8(B) of this Part shall apply to the owner and operator of a paper, film, or foil coating process if an individual paper, film or foil coating unit has the potential to emit more than twenty-five (25) tons per year of VOC from coatings, prior to controls.
- C. Exemptions
  1. For paper, film and foil coating operations subject to § 19.6.8(B) of this Part, the requirements of § 19.7.8(B) of this Part do not apply provided the facility obtains and complies with a federally enforceable emission limitation which restricts the potential emissions of the coating line to below twenty-five (25) tons per year.

#### **19.6.9 General Applicability Requirements**

- A. The work practice requirements for coating and cleaning operations in § 19.8 of this Part, the recordkeeping and reporting requirements in § 19.10 of this Part, the registration requirements in § 19.11 of this Part and applicable compliance

demonstration requirements is § 19.12 of this Part apply to the owner or operator of any coating facility that meets the applicability criteria in §§ 19.6.1 through 19.6.8 of this Part, as applicable.

- B. The owner or operator of a coating facility whose emissions are below the applicability thresholds in §§ 19.6.1 and 19.6.8 of this Part shall maintain records of either material purchase or actual usage records to verify that this regulation does not apply to such owner or operator.
- C. Any coating facility which has actual VOC emissions greater than or equal to 2.7 tons per rolling 12-month period in any one of the coating categories in §§ 19.6.1 through 19.6.8 of this Part coating may apply to the Director for exemption from § 19.7 of this Part. Exemption will be given in the form of an enforceable document, and will include the following conditions:
  - 1. The total emissions from all coating operations shall not exceed 1,666 pounds in any one calendar month,
  - 2. The facility shall maintain the following records at the facility for a period of five (5) years. This information shall be made available to the Department and EPA upon request:
    - a. The name, identification number and amount used each month of each coating, as applied, on each coating line or operation;
    - b. The mass of VOC per volume (excluding water), as applied, for each coating used on each coating line or operation;
    - c. The type and amount of solvent used for diluents and cleanup operations;
  - 3. If the limit in § 19.6.9(C)(1) of this Part is exceeded, the applicable emission limitations specified in § 19.7 of this Part will immediately apply.
- D. The emissions limits in § 19.7 of this Part shall not apply to the use of any adhesive, sealant, adhesive primer or sealant primer in an operation that is subject to the emission limits in Part 44 of this Subchapter (Control of VOC from Adhesives and Sealants).
- E. A minor source permit or major source permit, shall be issued pursuant to Part 9 of this Subchapter (Air Pollution Control Permits), if add-on air pollution control equipment is used. If the air pollution control equipment is exempt from the requirements to obtain a permit in Part 9 of this Subchapter (Air Pollution Control Permits), a registration form may be required to be on file with the Office of Air Resources.

## 19.7 Emissions Limitations

### 19.7.1 Coil coating

A. The owner and operator of any coil coating operation that meets the applicability threshold in § 19.6.1 of this Part, shall use one of the following methods to control emissions of VOCs:

1. Use only low-VOC coatings that have an as applied VOC content no greater than the applicable level in § 19.7.1(A)(1)(a) of this Part;
  - a. Coil VOC content limitations in pounds of VOC per gallon of coating less water and exempt compounds, as applied

Category	lbs. of VOC /gal of coating minus water and exempt compounds, as applied
Coil	2.6

2. Use a combination of low-VOC coating and add on control equipment that does not exceed the as applied VOC content limitation in § 19.7.1(A)(2)(a) of this Part;
  - a. Coil VOC content limitations in pounds of VOC per gallon of solids, as applied.

Category	lbs. of VOC/gal of solids, as applied
Coil	4.02

3. Use of daily-weighted averaging, as determined by the procedures in § 19.13(D) of this Part to achieve the VOC content limitation in §§ 19.7.1(A)(1)(a) or 19.7.1(A)(2)(a) of this Part for the coating unit;
4. In lieu of the use of low-VOC coatings, in accordance with the requirements of Part 9 of this Subchapter (Air Pollution Control Permits), install an approved control system to achieve an overall VOC control efficiency of at least ninety percent (90%); or
5. An alternative equivalent method of control as approved by the Director. Approval of an alternative method must be approved by EPA as a source specific State Implementation Plan (SIP) revision.

### 19.7.2 Fabric and Vinyl Coating

A. The owner and operator of any fabric and vinyl coating unit that meets the applicability threshold in § 19.6.2 of this Part, shall use one of the following methods to achieve compliance with this Part.

1. Use only low-VOC coatings that have an as applied VOC content no greater than the applicable level in § 19.7.2(A)(1)(a) of this Part;

a. Fabric and vinyl VOC content limitations in pounds of VOC per gallon of coating less water and exempt compounds, as applied

Category	lbs. of VOC /gal of coating minus water and exempt compounds, as applied
Fabric	2.9
Vinyl	3.8

2. Use a combination of low-VOC coating and add on control equipment that does not exceed the as applied VOC content limitation, expressed in pounds of VOC per gallon of solids as applied, in § 19.7.2(A)(2)(a) of this Part.

a. Fabric and vinyl VOC content limitations in pounds of VOC per gallon of solids, as applied.

Category	lbs. of VOC/gal of solids, as applied
Fabric	4.79
Vinyl	7.86

3. Use of daily-weighted averaging, as determined by the procedures in § 19.13(D) of this Part, to achieve the VOC content limitations in §§ 19.7.2(A)(1)(a) or 19.7.2(A)(2)(a) of this Part for the coating unit;

4. In lieu of the use of low-VOC coatings, in accordance with the requirements of Part 9 of this Subchapter (Air Pollution Control Permits), install an approved control system to achieve an overall VOC control efficiency of at least ninety percent (90%); or

5. An alternative equivalent method of control as approved by the Director. Approval of an alternative method must be approved by EPA as a source specific State Implementation Plan (SIP) revision.

### 19.7.3 Flatwood Paneling

A. The owner and operator of any flatwood paneling operation that meets the applicability threshold in § 19.6.3 of this Part, shall use one of the following methods to control emissions of VOCs:

1. Use only low-VOC coatings that have an as applied VOC that does not exceed the applicable VOC content limitations in §§ 19.7.3(A)(1)(b) or (d) of this Part:

a. Prior to July 1, 2020 the VOC content of the as applied coating shall not exceed the applicable VOC content limitations in § 19.7.3(A)(1)(b) of this Part;

b. Flatwood paneling VOC content limitation prior to July 1, 2020

Category	lbs. VOC/1000 square feet coated
Printed Interior Wall Panels Made of Hardwood Plywood and Thin Particleboard	6.0
Natural Finish Hardwood Plywood Panels	12.0
Class II Finishes for Hardboard Paneling	10.0

c. Effective July 1, 2020, the VOC content of the as applied coating, minus water and exempt compounds, shall not exceed the VOC emissions limitations in § 19.7.3(A)(1)(d) of this Part;

d. Flatwood paneling VOC content limitations in lbs. of VOC per gallon of coating, excluding water and exempt compounds, as applied effective July 1, 2020.

Category	lbs. VOC per gallon of coating minus water and exempt compounds, as applied
Printed interior panels made of hardwood, plywood, or thin particleboard	2.1
Natural finish hardwood plywood panels	2.1

Category	lbs. VOC per gallon of coating minus water and exempt compounds, as applied
Class II hardboard paneling finish	2.1
Tileboard	2.1
Exterior siding	2.1

2. Use a combination of low-VOC coating and add on control equipment that does not exceed the VOC content limitations, expressed in pounds of VOC per gallon of solids as applied, in § 19.7.3(A)(2)(b) of this Part.
  - a. Effective July 1, 2020, the VOC content of the as applied coating shall not exceed the VOC content limitations in pounds of VOC per gallon of solids, as applied in § 19.7.3(A)(2)(b) of this Part.
  - b. Flatwood paneling VOC content limitations in lbs. of VOC per gallon of solids, as applied effective July 1, 2020.

Category	lbs. VOC per gallon solids, as applied
Printed interior panels made of hardwood, plywood, or thin particleboard	2.9
Natural finish hardwood plywood panels	2.9
Class II hardboard paneling finish	2.9
Tileboard	2.9
Exterior siding	2.9

3. Use of daily-weighted averaging, as determined by the procedures in equation for in § 19.13(D) of this Part, to achieve the VOC content limitations in §§ 19.7.3(A)(1) or (2) of this Part;



4. In lieu of the use of low-VOC coatings, in accordance with the requirements of Part 9 of this Subchapter (Air Pollution Control Permits), install an approved control system to achieve an overall VOC control efficiency of at least ninety percent (90%); or
5. An alternative equivalent method of control as approved by the Director. Approval of an alternative method must be approved by EPA as a source specific State Implementation Plan (SIP) revision.

**19.7.4 Large Appliance Coating**

A. The owner and operator of any large appliance coating operation that meets the applicability threshold in § 19.6.4 of this Part, shall use one of the following methods to control emissions of VOCs:

1. Use only low-VOC coatings that have an as applied VOC content, minus water and exempt compounds that does not exceed the VOC content limitations in §§ 19.7.4(A)(1)(b) or (d) of this Part;
  - a. Prior to July 1, 2020, the VOC content of the as applied coating, minus water and exempt compounds, shall not exceed the VOC content limitations in § 19.7.4(A)(1)(b) of this Part.
  - b. VOC content limitations in pounds of VOC per gallon of coating less water and exempt compounds, as applied prior to July 1, 2020.

Category	lbs. VOC per gallon of coating minus water and exempt compounds, as applied
Large appliance	2.8

- c. Effective July 1, 2020 the VOC content of the as applied coating minus water and exempt compounds shall not exceed the VOC content limitations in § 19.7.4(A)(1)(d) of this Part.
- d. Large appliance VOC content limitations in pounds of VOC per gallon of coating less water and exempt compounds, as applied effective July 1, 2020.

Category	Baked	Air Dried
	lbs. VOC/gallon of coating, less water and exempt compounds, as applied	lbs. VOC/gallon of coating, less water and exempt compounds, as applied
General, one component	2.3	2.3
General, multi-component	2.3	2.8
Extreme high gloss	3.0	2.8
Extreme performance	3.0	3.5
Heat resistance	3.0	3.5
Solar absorbent	3.0	3.5
Metallic	3.5	3.5
Pretreatment coatings	3.5	3.5

2. Use a combination of low-VOC coating and add on control equipment meeting the as applied VOC content, expressed in pounds of VOC per gallon of solids, as applied, in § 19.7.4(A)(2)(b) or (d) of this Part as applicable.
  - a. Prior to July 1, 2020, the VOC content, shall not exceed the VOC content limits ins § 19.7.4(A)(2)(b) of this Part.
  - b. Large appliance VOC content limitations in pounds of VOC per gallon of solids, as applied, effective prior to July 1, 2020.

Category	lbs. VOC per gallon of solids
Large appliance	4.52

- c. Effective July 1, 2020 the VOC content of the as applied coating shall not exceed the VOC content limitations in pounds of VOC per gallon of solids, as applied, in § 19.7.4(A)(2)(d) of this Part.
- d. Large appliance VOC content limitations in lbs. of VOC per gallon of solids, as applied, effective July 1, 2020.

Category	Baked	Air Dried
	Lb VOC/gal of solids, as applied	Lb VOC/gal of solids, as applied
General, one component	3.3	3.3
General, multi-component	3.3	4.5
Extreme high gloss	5.1	4.5
Extreme performance	5.1	6.7
Heat resistance	5.1	6.7
Solar absorbent	5.1	6.7
Metallic	6.7	6.7
Pretreatment coatings	6.7	6.7

- 3. Use of daily-weighted averaging, as determined by the procedures in equation for in § 19.13(D) of this Part, to achieve the VOC content limitations in §§ 19.7.4(A)(1) or (2) of this Part;
  - 4. In lieu of the use of low-VOC coatings, in accordance with the requirements of Part 9 of this Subchapter (Air Pollution Control Permits), install an approved control system to achieve an overall VOC control efficiency of at least ninety percent (90%); or
  - 5. An alternative equivalent method of control as approved by the Director. Approval of an alternative method must be approved by EPA as a source specific State Implementation Plan (SIP) revision.
- B. The owner and operator of any large appliance coating operation that meets the applicability threshold in § 19.6.4 of this Part, shall use one or more of the following application methods:

1. Electrostatic spray application;
2. HVLP spray;
3. Flow coat;
4. Roller coat;
5. Dip coat, including electrodeposition;
6. Airless spray;
7. Air-assisted airless spray; or
8. A coating application method capable of achieving a transfer efficiency equivalent to or greater than that achieved by HVLP, as approved by the Director and EPA.

**19.7.5 Magnet Wire coating**

- A. The owner and operator of any magnet wire coating operation that meets the applicability threshold in § 19.6.5 of this Part, shall use one of the following methods to control emissions of VOCs:
1. Use only low-VOC coatings that have an as applied VOC content that does not exceed the VOC content limitation in § 19.7.5(A)(1)(a) of this Part.
    - a. Magnet wire VOC content limitation in pounds of VOC per gallon of coating minus water and exempt compounds, as applied.

Category	lbs. VOC per gallon of coating minus water and exempt compounds, as applied
Magnet Wire	1.7

2. Use a combination of low-VOC coating and add on control equipment that does not exceed the VOC content limitation in § 19.7.5(A)(2)(a) of this Part;
  - a. Magnet wire VOC content limitation in pounds of VOC per gallon of solids.

Category	lbs. VOC per gallon of solids
Magnet Wire	2.21

3. Use daily-weighted averaging, as determined by the procedures in § 19.13(D) of this Part, to achieve the VOC content limitation in §§ 19.7.5(A)(1)(a) or 19.7.5(A)(2)(a) of this Part;
4. In lieu of the use of low-VOC coatings, in accordance with the requirements of Part 9 of this Subchapter (Air Pollution Control Permits), install an approved control system to achieve an overall VOC control efficiency of at least ninety percent (90%); or
5. An alternative equivalent method of control as approved by the Director. Approval of an alternative method must be approved by EPA as a source specific State Implementation Plan (SIP) revision.

#### 19.7.6 Metal Furniture Coating

- A. The owner and operator of any metal furniture coating operation that meets the applicability threshold in § 19.6.6 of this Part, shall use one of the following methods to control emissions of VOCs:
  1. Use only low-VOC coatings that have an as applied VOC content, minus water and exempt compounds, that does not exceed the VOC content limitations in §§ 19.7.6(A)(1)(b) or (d) of this Part;
    - a. Prior to July 1, 2020, the VOC content of the as applied coating (minus water and exempt compounds), shall not exceed the VOC content limitation in § 19.7.6(A)(1)(b) of this Part.
    - b. Metal Furniture VOC content limitation in pounds of VOC per gallon of coating minus water and exempt compounds, as applied effective prior to July 1, 2020.

Category	lbs. VOC per gallon of coating minus water and exempt compounds, as applied
Metal furniture	3.08

- c. Effective July 1, 2020 the VOC content of the as applied coating shall not exceed the VOC content limitations in § 19.7.6(A)(1)(d) of this Part.

- d. Metal Furniture VOC content limitations in lbs. of VOC per gallon of coating excluding water and exempt compounds, as applied effective July 1, 2020.

Coating Type	Baked	Air dried
	lbs. VOC/gallon of coating, less water and exempt compounds, as applied	lbs. VOC/gallon of coating, less water and exempt compounds, as applied
General, One Component	2.3	2.3
General, Multi-Component	2.3	2.8
Extreme High Gloss	3	2.8
Extreme Performance	3	3.5
Heat Resistant	3	3.5
Metallic	3.5	3.5
Pretreatment Coatings	3.5	3.5
Solar Absorbent	3	3.5

2. Use a combination of low-VOC coating and add on control equipment that does not exceed the VOC content limitations, expressed in pounds of VOC per gallon of solids as applied, in §§ 19.7.6(A)(1)(b) or (d) of this Part as applicable.
- a. Prior to July 1, 2020, the VOC content of the as applied coating, minus water and exempt compounds, shall not exceed the VOC content limitation in § 19.7.6(A)(2)(b) of this Part.
  - b. Metal furniture VOC content limitation in pounds of VOC per gallon of solids, as applied, effective prior to July 1, 2020.

Category	lbs. VOC per gallon of solids, as applied
Metal furniture	5.06

- c. Effective July 1, 2020, the VOC content of the as applied coating shall not exceed the VOC content limitations in pounds of VOC per gallon of solids, as applied in § 19.7.6(A)(2)(d) of this Part.
- d. Metal furniture VOC content limitations in pounds of VOC per gallon of solids, as applied effective July 1, 2020.

Coating Type	Baked	Air dried
	lbs. VOC per gal of solids, as applied	lbs. VOC per gal of solids, as applied
General, One Component	3.3	3.3
General, Multi-Component	3.3	4.5
Extreme High Gloss	5.1	4.5
Extreme Performance	5.1	6.7
Heat Resistant	5.1	6.7
Metallic	6.7	6.7
Pretreatment Coatings	6.7	6.7
Solar Absorbent	5.1	6.7

- 3. Use of daily-weighted averaging for each coating unit, as determined by the procedures in § 19.13(D) of this Part, to achieve the VOC content limitations in §§ 19.7.6(A) (1) or (2) of this Part as applicable;
- 4. In lieu of the use of low-VOC coatings, in accordance with the requirements of Part 9 of this Subchapter (Air Pollution Control Permits), install an approved control system to achieve an overall VOC control efficiency of at least ninety percent (90%); or

5. An alternative equivalent method of control as approved by the Director. Approval of an alternative method must be approved by EPA as a source specific State Implementation Plan (SIP) revision.
- B. The owner and operator of any metal furniture coating operation that meets the applicability threshold in § 19.6.6 of this Part, shall use one or more of the following application methods:
1. Electrostatic spray application;
  2. HVLP spray;
  3. Flow coat;
  - d. Roller coat;
  4. Dip coat, including electrodeposition;
  5. Airless spray;
  6. Air-assisted airless spray; or
  7. A coating application method capable of achieving a transfer efficiency equivalent to or greater than that achieved by HVLP, as approved by the Director and EPA.

#### **19.7.7 Miscellaneous Metal and /or Plastic Part Coating**

- A. The owner and operator of any miscellaneous metal and/ or plastic parts coating operation, that meets the applicability threshold in § 19.6.7 of this Part, shall use one of the following methods to achieve compliance with this Part.
1. Use only low-VOC coatings that have an as applied VOC content, minus water and exempt compounds that does not exceed the applicable VOC content limitations in § 19.7.7(A)(1)(b) and/or §§ 19.7.7(A)(1)(d) through (h) of this Part, as applicable;
    - a. Prior to July 1, 2020, for miscellaneous metal parts, the VOC content of the as applied coating, minus water and exempt compounds, shall not exceed the VOC content limitations in § 19.7.7(A)(1)(b) of this Part.
    - b. Miscellaneous metal parts VOC content limitations in pounds of VOC per gallon of coating minus water and exempt compounds, as applied, effective prior to July 1, 2020.



Category	lbs. VOC/gallon of coating, as applied
Clear Coating	4.3
Steel Pail and Drum Interiors	4.3
Air Dried Coating	3.5
Extreme Performance Coating	3.5
All other coating on misc. metal parts	3.0

- c. Effective July 1, 2020, the VOC content of the as applied coating shall not exceed the applicable VOC emissions limitations in pounds of VOC per gallon of coating minus water and exempt compounds, in §§ 19.7.7(A)(1)(d) through (h) of this Part, as applicable.
- d. Miscellaneous metal parts and products VOC content limitations in pounds of VOC per gallon of coating minus water and exempt compounds, as applied (not including pleasure craft coating) effective July 1, 2020.

	Air Dried	Baked
Coating Category	lbs. VOC/gallon of coating, minus water and exempt compounds, as applied	lbs. VOC/gallon of coating, minus water and exempt compounds, as applied
General One Component	2.8	2.3
General Multi Component	2.8	2.3
Camouflage	3.5	3.5
Electric-Insulating Varnish	3.5	3.5
Etching Filler	3.5	3.5

	Air Dried	Baked
Coating Category	lbs. VOC/gallon of coating, minus water and exempt compounds, as applied	lbs. VOC/gallon of coating, minus water and exempt compounds, as applied
Extreme High-Gloss	3.5	3
Extreme Performance	3.5	3
Heat-Resistant	3.5	3
High Performance Architectural	6.2	6.2
High Temperature	3.5	3.5
Metallic	3.5	3.5
Military Specification	2.8	2.3
Mold-Seal	3.5	3.5
Pan Backing	3.5	3.5
Prefabricated Architectural Multi-Component	3.5	2.3
Prefabricated Architectural One-Component	3.5	2.3
Pretreatment Coatings	3.5	3.5
Repair and Touch Up	3.5	3
Silicone Release	3.5	3.5
Solar-Absorbent	3.5	3

	Air Dried	Baked
Coating Category	lbs. VOC/gallon of coating, minus water and exempt compounds, as applied	lbs. VOC/gallon of coating, minus water and exempt compounds, as applied
Vacuum-Metalizing	3.5	3.5
Drum Coating, New, Exterior	2.8	2.8
Drum Coating, New, Interior	3.5	3.5
Drum Coating, Reconditioned, Exterior	3.5	3.5
Drum Coating, Reconditioned, Interior	4.2	4.2

- e. Miscellaneous plastic parts and products VOC content limitations in pounds of VOC per gallon of coating minus water and exempt compounds, as applied (not including automotive/transportation, business machine and pleasure craft coating) effective July 1, 2020.

Coating category	lbs. VOC/gallon of coating, minus water and exempt compounds, as applied
General One Component	2.3
General Multi Component	3.5
Electric Dissipating Coatings and Shock-Free Coatings	6.7
Extreme Performance	3.5 (2-pack coatings)
Metallic	3.5

Coating category	lbs. VOC/gallon of coating, minus water and exempt compounds, as applied
Military Specification	2.8 (1 pack)
	3.5 (2 pack)
Mold-Seal	6.3
Multi-colored Coatings	5.7
Optical Coatings	6.7
Vacuum-Metalizing	

- f. Pleasure craft coating VOC content limitations in pounds of VOC per gallon of coating minus water and exempt compounds, as applied effective July 1, 2020.

Coating category	lbs. VOC/gallon of coating, minus water and exempt compounds, as applied
Extreme High Gloss Topcoat	5.0
High Gloss Topcoat	3.5
Pretreatment Wash Primers	6.5
Finish Primer/Surfacer	3.5
High Build Primer Surfacer	2.8
Aluminum Substrate Antifoulant Coating	4.7
Antifouling Sealer/Tie Coat	3.5
Other Substrate Antifoulant Coating	3.3
All other pleasure craft coatings for metal or plastic	3.5

- g. Automotive/transportation plastic part coating VOC content limitations in pounds of VOC per gallon of coating minus water and exempt compounds, as applied effective July 1, 2020.

Coating category	lbs. VOC/gallon of coating, minus water and exempt compounds, as applied
High Bake Coatings – Interior and Exterior Parts	
- Flexible Primer	4.5
- Non-Flexible Primer	3.5
- Base Coats	4.3
- Clear Coat	4.0
- Non-basecoat/clear coat	4.3
Low Bake/Air Dried Coatings – Exterior Parts	
- Primers	4.8
- Basecoat	5.0
- Clearcoats	4.5
- Non-basecoat/clearcoat	5.0
Low Bake/Air Dried Coatings – Interior Parts	5.0
Touch up and Repair Coatings	5.2

- h. Business machine plastic part VOC content limitations in pounds of VOC per gallon of coating minus water and exempt compounds, as applied effective July 1, 2020.

Category	lbs. VOC/gallon of coating, minus water and exempt compounds, as applied
Primers	2.9
Topcoat	2.9
Texture coat	2.9
Fog Coat	2.2
Touch up and Repair coatings	2.9

2. Use a combination of low-VOC coating and add on control equipment meeting the as applied VOC content, expressed in pounds of VOC per gallon of solids as applied, in § 19.7.7(A)(2)(b) and/or §§ 19.7.7(A)(2)(d) through (h) of this Part, as applicable.

a. Prior to July 1, 2020, miscellaneous metal part coating operations using a combination of low VOC coating and add-on control equipment shall not exceed the VOC content limitations, expressed in pounds of VOC per gallon of solids as applied, in § 19.7.7(A)(2)(b) of this Part.

b. Miscellaneous metal parts VOC content limitations in pounds of VOC per gallon of solids, as applied effective prior to July 1, 2020.

Category	lbs. VOC/gallon of solids, as applied
Clear Coating	10.34
Steel Pail and Drum Interiors	10.34
Air Dried Coating	6.67
Extreme Performance Coating	6.67
All other coating on misc. metal parts	5.06

- c. Effective July 1, 2020, miscellaneous metal and/or plastic parts and products coating operations using a combination of low VOC coating and add-on control equipment shall not exceed the applicable emissions limitations expressed in pounds of VOC per gallon of solids as applied in §§ 19.7.7(A)(2)(d) through (h) of this Part.
- d. Miscellaneous metal parts and products VOC content limitations in pounds of VOC per gallon of solids, as applied (not including pleasure craft coating) effective July 1, 2020.

Coating category	Air Dried	Baked
	lbs. VOC per gal solids, as applied	lbs. VOC per gal solids, as applied
General One Component	4.52	3.35
General Multi Component	4.52	3.35
Camouflage	6.67	6.67
Electric-Insulating Varnish	6.67	6.67
Etching Filler	6.67	6.67
Extreme High-Gloss	6.67	5.06
Extreme Performance	6.67	5.06
Heat-Resistant	6.67	5.06
High Performance Architectural	38	38
High Temperature	6.67	6.67
Metallic	6.67	6.67
Military Specification	4.52	3.35

Mold-Seal	6.67	6.67
Pan Backing	6.67	6.67
Prefabricated Architectural Multi-Component	6.67	3.35
Prefabricated Architectural One-Component	6.67	3.35
Pretreatment Coatings	6.67	6.67
Silicone Release	6.67	6.67
Solar-Absorbent	6.67	5.06
Vacuum-Metalizing	6.67	6.67
Drum Coating, New, Exterior	4.52	4.52
Drum Coating, New, Interior	6.67	6.67
Drum Coating, Reconditioned, Exterior	6.67	6.67
Drum Coating, Reconditioned, Interior	9.78	9.78

- e. Miscellaneous plastic parts and products VOC content limitations in pounds of VOC per gallon of solids, as applied (not including automotive/transportation, business machine and pleasure craft coating) effective July 1, 2020.

Coating category	lbs. VOC/gal solids, as applied
General One Component	3.35
General Multi Component	6.67



Coating category	lbs. VOC/gal solids, as applied
Electric Dissipating Coatings and Shock-Free Coatings	74.7
Extreme Performance	6.67 (2-pack coatings)
Metallic	6.67
Military Specification	4.52 (1 pack) 6.67 (2 pack)
Mold-Seal	43.7
Multi-colored Coatings	25.3
Optical Coatings	74.7
Vacuum-Metalizing	74.7

f. Pleasure Craft Coating VOC content limitations in pounds of VOC per gallon of solids, as applied effective July 1, 2020.

Coating category	lbs. VOC/gal solids, as applied
Extreme High Gloss Topcoat	9.2
High Gloss Topcoat	6.7
Pretreatment Wash Primers	55.6
Finish Primer/Surfacer	6.7
High Build Primer Surfacer	4.6
Aluminum Substrate Antifoulant Coating	12.8

Coating category	lbs. VOC/gal solids, as applied
Other Substrate Antifoulant Coating	4.4
All other pleasure craft coatings for metal or plastic	6.7

- g. Automotive/Transportation Plastic Parts VOC content limitations in pounds of VOC per gallon of solids, as applied effective July 1, 2020.

Coating category	lbs. VOC/gal solids, as applied
High Bake Coatings – Interior and Exterior Parts	
- Flexible Primer	11.58
- Non-Flexible Primer	6.67
- Base Coats	10.34
- Clear Coat	8.76
- Non-basecoat/clear coat	10.34
Low Bake/Air Dried Coatings – Exterior Parts	
- Primers	13.80
- Basecoat	15.59
- Clearcoats	11.58
- Non-basecoat/clearcoat	15.59
Interior Parts - Low Bake/Air Dried Coatings	15.59

Coating category	lbs. VOC/gal solids, as applied
Touch up and Repair Coatings	17.72

(1) For red, yellow and black automotive coatings, except touch up and repair coatings, the limit is determined by multiplying the appropriate limit in this table by 1.15.

h. Business Machine Plastic Parts VOC content limitations in pounds of VOC per gallon of solids, as applied effective July 1, 2020.

Coating Category	lbs. VOC/gallon of solids, as applied
Primers	4.80
Topcoat	4.80
Texture coat	4.80
Fog Coat	3.14
Touch up and Repair coatings	4.80

3. Use of daily-weighted averaging for each coating unit, as determined by the procedures in § 19.13(D) of this Part, to achieve the applicable VOC content limitations in §§ 19.7.7(A)(1) or (2) of this Part;
4. In lieu of the use of low-VOC coatings, in accordance with the requirements of Part 9 of this Subchapter (Air Pollution Control Permits), install an approved control system to achieve an overall VOC control efficiency of at least ninety percent (90%); or
5. An alternative equivalent method of control as approved by the Director. Approval of an alternative method must be approved by EPA as a source specific State Implementation Plan (SIP) revision.

B. The owner and operator of any miscellaneous metal and/or plastic parts coating operation that meets the applicability threshold in § 19.6 7 of this Part, shall use one or more of the following application methods except when complying using add-on air pollution control equipment under § 19.7.7(A)(4) of this Part:

1. Electrostatic spray application;

2. HVLP spray;
3. Flow coat;
4. Roller coat;
5. Dip coat, including electrodeposition;
6. Airless spray;
7. Air-assisted airless spray; or
8. A coating application method capable of achieving a transfer efficiency equivalent to or greater than that achieved by HVLP, as approved by the Director and EPA.

**19.7.8 Paper, Film and Foil**

A. The owner and operator of a paper coating process which meets the applicability threshold in § 19.6.8(A) of this Part, shall use one of the following methods to control emissions of VOCs:

1. Use low-VOC coatings that do not exceed the emission limitation in § 19.7.8(A)(1)(a) of this Part.
  - a. Paper VOC content limitation in pounds of VOC per gallon of coating minus water and exempt compounds, as applied.

Coating category	lbs. VOC/gallon of coating, minus water and exempt compounds, as applied
Paper	2.9

2. Use a combination of low-VOC coating and add-on control equipment that does not exceed the VOC content emissions limitation in §19.7.8(A)(2)(a) of this Part.
  - a. Paper VOC content limitation in pounds of VOC per gallon of solids, as applied.

Coating category	lbs. VOC/gallon of solids, as applied
Paper	4.79

3. Use of daily-weighted averaging, as determined by the procedures in § 19.13(D) of this Part, to achieve the VOC content limitation in §§ 19.7.8(A)(1) or (2) of this Part;

4. In lieu of the use of low-VOC coatings, in accordance with the requirements of Part 9 of this Subchapter (Air Pollution Control Permits), install an approved control system to achieve an overall VOC control efficiency of at least ninety percent (90%); or
  5. An alternative equivalent method of control as approved by the Director. Approval of an alternative method must be approved by EPA as a source specific State Implementation Plan (SIP) revision.
- B. Effective July 1, 2020 the owner and operator of any paper, film and foil coating line with any individual paper, film or foil coating line that meets the applicability threshold in § 19.6.8(B) of this Part, shall use one of the following methods to control emissions of VOCs:

1. Use only low-VOC coatings that have an as applied VOC content, as calculated using the equations in §§ 19.13(B) or (C) of this Part, that does not exceed the VOC content limitations in § 19.7.8(B)(1)(a) of this Part;

a. Paper, film or foil VOC content limitations effective July 1, 2020.

Coating category	lbs. VOC/lb of coating, as applied	Lbs. VOC per lb solids
Paper, film or foil (non-pressure sensitive tape and label)	0.08	0.4
Paper, film or foil (pressure sensitive tape and label)	0.067	0.20

2. Use of daily-weighted averaging, as determined by the procedures in § 19.13(D) of this Part, to achieve the VOC content limitations in § 19.7.8(B)(1)(a) of this Part; or
3. In lieu of the use of low-VOC coatings, in accordance with the requirements of Part 9 of this Subchapter (Air Pollution Control Permits), install an approved control system to achieve an overall VOC control efficiency of at least ninety percent (90%); or
4. An alternative equivalent method of control as approved by the Director. Approval of an alternative method must be approved by EPA as a source specific State Implementation Plan (SIP) revision.

### 19.7.9 Alternative RACT

- A. The emission limitations set forth in §§ 19.7.1 through 8 of this Part may be relaxed on a case-by-case basis if:

1. The owner or operator of the subject facility submits for approval by the Director and EPA:
  - a. Economic and/or technical documentation to the satisfaction of the Department and EPA that the applicable emission limitations set forth in §§ 19.7.1 through 8 of this Part cannot feasibly be met, and,
  - b. A proposal to set applicable emission limitations different from those of §§ 19.7.1 through 8 of this Part that will represent an Alternative Reasonably Available Control Technology; and,
  - c. A schedule for attaining the Alternative Reasonably Available Control Technology emission limitations within two (2) years of its being approved.
2. All compliance date and emission limitation relaxations made under § 19.7.9(A)(1) of this Part will not be final until approved by EPA as a SIP revision.
3. A relaxation of the applicable emissions limitations in § 19.7 of this Part will be approved only if the facility can demonstrate that economically, technically or both that neither coating reformulation nor the installation of a control system is feasible or even partially feasible.
4. The facility will undergo Reasonably Available Control Technology review every three (3) years after the compliance date as determined in § 19.7.9(A)(1)(c) of this Part until the final applicable emission limitation is achieved as defined in § 19.7 of this Part.

## **19.8 Work Practice Standards**

- A. The owner or operator of a coating facility meeting the applicability requirements in § 19.6 of this Part shall implement the following work practices for coating related activities:
  1. Store all new and used VOC-containing coating, thinners or coating related waste in closed containers;
  2. Ensure that mixing and storage containers used for VOC-containing coatings, thinners, and coating-related waste materials are kept closed at all times except when depositing or removing these materials;
  3. Minimize spills of VOC-containing coatings, thinners, and coating-related waste materials; and
  4. Convey VOC-containing coatings, thinners, and coating-related waste materials from one location to another in closed containers or pipes.

- B. The owner or operator of a coating facility meeting the applicability requirements in § 19.6 of this Part shall implement the following work practices for cleaning related activities:
1. Store all VOC-containing cleaning materials and used shop towels in closed containers;
  2. Ensure that storage containers used for VOC-containing cleaning materials are kept closed at all times except when depositing or removing these materials;
  3. Minimize spills of VOC-containing cleaning materials;
  4. Convey VOC-containing cleaning materials from one location to another in closed containers or pipes; and
  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.

## **19.9 Compliance Schedule**

- A. The owner or operator of an existing coating operation that meets any of the applicability thresholds in §§ 19.6.1 through 19.6.8 of this Part shall achieve compliance with the applicable emission limitations in § 19.7 of this Part or, if applicable, apply to the Director for an exemption under § 19.6.9(C) of this Part or apply for alternative RACT under § 19.7.9 of this Part, by July 1, 2020.
- B. The owner or operator of an existing coating operation that does not meet any of the applicability thresholds in §§ 19.6.1 through 19.6.8 of this Part, as of the effective date of this regulation, shall achieve compliance with the applicable emissions limitations in § 19.7 of this Part or, if applicable, apply to the Director for an exemption under § 19.6.9(C) of this Part or apply for alternative RACT under § 19.7.9 of this Part, within one year of becoming subject to any of the applicability thresholds in §§ 19.6.1 through 19.6.8 of this Part.
- C. The owner or operator of any coating facility for which construction commenced on or after the July 1, 2020, that expects to meet or exceed any of the applicability thresholds in §§ 19.6.1 through 19.6.8 of this Part shall be in compliance with the applicable emissions limitations in § 19.7 of this Part upon commencing operation.
- D. The compliance schedule shall not allow a coating facility to supersede any applicable emission limitations including but not limited to:
1. Best Available Control Technology determinations, or,

2. Lowest Achievable Emissions Rate determinations, or,
3. Federal New Source Performance Standards, or National Emission Standards of Hazardous Air Pollutants, or,
4. Any other condition or standard that is specifically required by the Clean Air Act (as amended) for new or modified sources.

## **19.10 Recordkeeping and Reporting**

### **A. Recordkeeping**

1. The owner or operator of a coating operation subject to this regulation shall maintain records of information sufficient to determine compliance with the applicable requirements of this regulation, including at minimum the following information for each calendar month for each coating line or operation and maintain the information at the facility for a period of five (5) years:
  - a. The name, description (coating category) and amount used of each coating, on each coating line or operation;
  - b. The type and amount of solvent used for diluents and cleanup operations;
  - c. The mass of VOC per volume of each coating minus water and exempt compounds (excluding water), as applied, used each month on each coating line or operation.
  - d. A Safety Data Sheet, a Certified Product Data Sheet or equivalent for each coating, diluent or cleaning solvent used.
2. The owner or operator of a coating unit complying by the means of daily-weighted averaging shall collect and record all of the following information each day for each coating unit and maintain the information at the facility for a period of five (5) years:
  - a. The name and identification number of each coating, as applied, on each coating unit,
  - b. The mass of VOC per volume coating (excluding water) and the volume of each coating (excluding water), as applied, used each day on each coating unit,
  - c. The daily-weighted average VOC content of all coatings, as applied on each coating unit calculated according to the procedure in, § 19.13(D) of this Part,



- d. The type and amount of solvent used for diluents and cleanup operations.
3. The owner or operator of a coating line or operation complying by means of add-on control equipment shall in addition to the recordkeeping requirements in § 19.10(A) of this Part maintain the following:
- a. A log of operating time for the capture system, control device, monitoring equipment, and the associated coating line or operation;
  - b. 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;
  - c. For condensers:
    - (1) Design inlet temperature of cooling medium and design exhaust gas temperature.
  - d. For thermal incinerators:
    - (1) Design combustion temperature;
    - (2) All three-hour periods of operation in which the average combustion temperature was more than twenty-eight degrees Celsius (28°C) or fifty degrees Fahrenheit (50°F) below the average combustion temperature during the most recent performance test that demonstrated that the facility was in compliance, and,
    - (3) The operating temperature.
  - e. For catalytic incinerators:
    - (1) Design exhaust gas temperature, design temperature rise across catalyst bed, anticipated frequency of catalyst change, and catalyst changes;
    - (2) All periods where the temperature increase across the catalyst bed is less than eighty percent (80%) of the temperature increase recorded during the most recent performance test that demonstrated that the facility was in compliance, and,
    - (3) The inlet and outlet temperatures and temperature rise across the catalyst bed.

- f. For carbon adsorbers:
  - (1) Design pressure drop across the adsorber and design VOC concentration at breakthrough.
  - (2) All three-hour periods of operation during which the average VOC concentration or reading of organics in the exhaust gases is more than twenty percent (20%) greater than the average exhaust gas concentration or reading measured by the organics monitoring device during the most recent determination of the recovery efficiency of the carbon adsorber that demonstrated that the facility was in compliance, and,
  - (3) The pressure drop across the adsorber and the hydrocarbon levels for breakthrough.
- g. Results of compliance tests and associated calculations demonstrating a ninety percent (90%) overall reduction of VOC emissions from subject lines or reduction of emissions to the equivalent of the applicable VOC content limitations of § 19.7 of this Part as calculated on a solids applied basis. Overall reduction efficiency shall be calculated as the product of the capture efficiency and the control device destruction or removal efficiency. Testing shall be performed according to § 19.12 of this Part. Capture efficiency shall be determined by methods approved by the Department and EPA.

## B. Reporting

- 1. The owner or operator of a subject coating line or operation shall:
  - a. Notify the Director of any record showing use of any non-complying coatings by sending a copy of such record to the Director within thirty (30) calendar days following that use;
  - b. Notify the Director of any record showing noncompliance with the applicable daily weighted average requirements by sending a copy of the record to the Director within thirty (30) calendar days following the occurrence, and,
  - c. Notify the Director of any record showing noncompliance with the applicable requirements for control devices by sending a copy of the record to the Director within thirty (30) calendar days following the occurrence.
  - d. Notify the Director at least thirty (30) calendar days before changing the method of compliance.

## 19.11 Registration

- A. Any person who meets the applicability thresholds in § 19.6 of this Part must register annually with the Office of Air Resources. This requirement may be fulfilled by submission of the annual air pollution inventory required in Part 14 of this Subchapter (Record Keeping and Reporting). By April 15<sup>th</sup> of each year, the following information must be submitted:
1. The name and address of the company and the name and telephone number of a responsible corporate official submitting the registration, and,
  2. A description of all operations in the facility where volatile organic compounds are emitted, and,
  3. Quantities of coatings, solvents, dissolvers, viscosity reducers, diluents, thinners, reagents, cleaning agents, enamels, lacquers, or paints consumed during the previous calendar year, and,
  4. The amount of volatile organic compound per gallon of coating solution (pounds per gallon) for each coating, enamel, lacquer, or paint consumed at the facility during the previous calendar year.

## 19.12 Compliance Demonstration/Testing

- A. Compliance with applicable emission limitations of § 19.7 of this Part shall be demonstrated in accordance with 40 C.F.R §. 60, Appendix A-7, Methods 24, 24A, 25, 25A incorporated in § 19.4 of this Part or any other EPA approved method which has been accepted by the Director and EPA. A one hour bake time must be used for 40 C.F.R. § 60 Appendix A-7 Methods 24 and 24A, incorporated in § 19.4 of this Part and, further, 40 C.F.R. § 60 Appendix A-7 Methods 24 and 24A, incorporated in § 19.4 of this Part apply to multicomponent coatings.
1. Manufacturer's formulation data may be used to demonstrate compliance with VOC content limitations in lieu of 40 C.F.R § 60, Appendix A-7, Methods 24 testing, incorporated in § 19.4 of this Part. In the case of a dispute, the VOC content determined using 40 C.F.R § 60, Appendix A-7, Methods 24, incorporated in § 19.4 of this Part shall prevail, unless a person is able to demonstrate to the Department and EPA that the manufacturer's formulation data are correct.
- B. Facilities using add on controls to comply with RACT must show that the equipment meets specific capture and control efficiency limits which will be set in an enforceable document. Control efficiency of the equipment will be determined using EPA-approved test methods. Calculations will be done on a solids applied basis. Continuous compliance will be maintained at all times. Compliance

averaging times will be met according to the control device chosen and EPA test methods, incorporated in § 19.4 of this Part as follows:

Compliance Method	EPA Reference Test Method	Test Averaging Time
Reformulation	40 C.F.R. § 60 Appendix A-7 Method 24 or 24A	instantaneous
Solvent destruction or solvent recovery except carbon adsorption	40 C.F.R. § 60 Appendix A-7 Method 25 or 25A	3 hours
Carbon adsorption	40 C.F.R. § 60 Appendix A-7 Method 25 or 25A or other test method as appropriate	The length of adsorption cycle or 24-hours, which-ever is less.

1. Or other methods approved by the Director and EPA. Once the control efficiency has been determined for any add-on control device by 40 C.F.R. § 60, Appendix A-7 Method 25 or 25A, incorporated in § 19.4 of this Part, or any alternative method approved by the Department and EPA, compliance shall be determined on an instantaneous basis time period (e.g. determined control efficiency shall be used to calculate whether samples from the process meet the applicable emissions limit.)

### 19.13 VOC Calculations

- A. The VOC content of the as applied coating, expressed in units of pounds of VOC per gallon of coating, shall be calculated using equation 1:

Equation 1

$$VOC = \frac{(W_v + W_a - W_w - W_n)}{(V + V_a - V_w - V_n)}$$

Where:

VOC = The VOC content of a given coating, in pounds per gallon (lbs./gal);

$W_v$  = Mass of total volatiles, in pounds;

$W_a$  = Mass of total VOC in additives or other materials that are added to the coating prior to its application, in pounds;

$W_w$  = Mass of the water in coating (if any), in pounds;

$W_n$  = Mass of any non-VOC solvent in the coating, in pounds;

$V$  = Volume of coating, in gallons;

$V_a$  = Volume of VOC-containing additives or other materials that are added to the coating prior to its application, in gallons;

$V_w$  = Volume of the water in coating (if any), in gallons; and

$V_n$  = Volume of any non-VOC solvent in the coating, in gallons.

- B. VOC content of the as applied coating, expressed in units of pounds of VOC per pound of coating solids, shall be calculated using equation 2:

Equation 2

$$\text{VOC}_B = (W_o)/(W_n)$$

Where:

$\text{VOC}_B$  = VOC content in lbs. VOC/lb of coating solids

$W_o$  = Weight percent of VOC ( $W_v - W_w - W_{ex}$ )

$W_v$  = Weight percent of total volatiles (100%-weight percent solids)

$W_w$  = Weight percent of water

$W_{ex}$  = Weight percent of exempt solvents

$W_n$  = Weight percent of solids of the as applied coating

- C. The VOC content of the as applied coating, expressed in units of pounds of VOC per gallon of coating solids, shall be calculated using equation 3:

Equation 3

$$VOC = (W_o)(D_c)/V_n$$

Where:

VOC = VOC Content in lbs. voc/gal of coating solids

$W_o$  = Weight percent of VOC ( $W_v - W_w - W_{ex}$ )

$W_v$  = Weight percent of total volatiles (100%-weight percent solids)

$W_w$  = Weight percent of water

$W_{ex}$  = Weight percent of exempt solvents

$D_c$  = Density of coating, lb/gal, at 25°C

$V_n$  = Volume percent of solids of the as applied coating

#### D. Procedure for Calculating the Daily-Weighted Averages

1. The daily-weighted average VOC content, in units of mass of VOC per unit volume of coating, excluding water and exempt compounds, as applied, of the coatings used on a day on a coating line or operation shall be calculated using equation 4:

Equation 4

$$VOC_w = \frac{\sum_{i=1}^n V_i C_i}{V_T}$$

Where:

$VOC_w$  = The daily-weighted average VOC content of the coatings, as applied, used on a coating line or operation in units of pounds of VOC per gallon of coating, excluding water and exempt compounds;

$n$  = The number of different coatings, as applied, each day on a coating line or operation;

$V_i$  = The volume of each coating (i), as applied, used in a day on a coating line or operation in units of gallons, excluding water and exempt compounds;

$C_i$  = The VOC content of each coating (i), as applied, used in a day on a coating line or operation in units of pounds VOC per gallon of coating, excluding water and exempt compounds; and,

$V_T$  = The total volume of all coating, as applied, used in a day on a coating line or operation in units of gallons, excluding water and exempt compounds.

2. The daily-weighted average VOC content, as applied, of the coatings used on a coating line or operation in units of mass of VOC per unit volume of coating solids shall be calculated by equation 5:

Equation 5

$$VOC_{ws} = \frac{\sum_{i=1}^n W_{VOCi} D_i V_i}{\sum_{i=1}^n V_i VS_i}$$

$VOC_{ws}$  = The daily-weighted average VOC content, as applied, of the coatings used on a coating line or operation in units of mass of VOC per unit volume of coating solids;

$n$  = The number of different coatings, as applied, used in a day on a coating line or operation;

$V_i$  = The volume of each coating (i), as applied, used in a day on a coating line or operation in units of gallons,

$W_{VOCi}$  = The weight fraction of VOC in each coating (i), as applied, used in a day on a coating line or operation in units of pounds VOC per pound of coating;

$D_i$  = The density of each coating (i) as applied, used in a day on a coating line or operation in units of pounds VOC per gallon of coating (lb./gal); and

$VS_i$  = The volume fraction solids content of each coating (i), as applied, used in a day on a coating line or operation in units of gallons solids/gallons coating.

**250-RICR-120-05-21**

## **TITLE 250 – DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

### **CHAPTER 120 – AIR RESOURCES**

#### **SUBCHAPTER 05 - AIR POLLUTION CONTROL**

PART 21 - Control of Volatile Organic Compound Emissions from Printing Operations

### **21.1 Purpose and Authority**

#### **21.1.1 Purpose**

The purpose of this regulation is to limit volatile organic compound emissions from printing operations.

#### **21.1.2 Authority**

These regulations are authorized pursuant to R.I. Gen. Laws § 42-17.1-2(19) and R.I. Gen. Laws Chapter 23-23, and have been promulgated pursuant to the procedures set forth in the Rhode Island Administrative Procedures Act, R.I. Gen. Laws Chapter 42-35.

### **21.2 Application**

The terms and provisions of this regulation shall be liberally construed to permit the Department to effectuate the purposes of state laws, goals and policies.

### **21.3 Severability**

If any provision of this regulation or the application thereof to any person or circumstance, is held invalid by a court of competent jurisdiction, the validity of the remainder of the regulation shall not be affected thereby.

### **21.4 Incorporated Materials**

These regulations hereby adopt and incorporate 40 C.F.R. § 60 Appendix A-7 Methods 24, 24A, 25, and 25A (2018) by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.

### **21.5 Definitions**

- A. Unless otherwise expressly defined in this section, the terms used in this regulation shall be defined by reference to [Part 0](#) of this Subchapter (General



Definitions). As used in this regulation, the following terms shall, where the context permits, be construed as follows:

1. "Capture efficiency" means the ratio of VOC emissions delivered to the control device to the total VOC emissions resulting from operation of a flexible package printing press and related cleaning, expressed as a percentage;
2. "Cleaning" means with respect to printing press operations, cleaning of a press or press parts or the removal of dried ink from areas around the press.
  - a. "Cleaning" does not include cleaning of electronic components, cleaning in platemaking or binding operations, housekeeping activity near a press or the use of a parts washer or cold cleaner.
3. "Cleaning solution" means any liquid solvent or solution used to clean the operating surfaces of a printing press and its parts. For purposes of this regulation, cleaning solutions include, but are not limited to, blanket wash, roller wash, metering roller cleaner, plate cleaner, impression cylinder washes, rubber rejuvenators, and other cleaners used for cleaning a press, press parts, or to remove dried ink or coating from areas around the press.
4. "Coldset" or "non-heatset" means a printing process in which the ink dries on the substrate through ordinary evaporation and absorption. For the purposes of this Part, ultraviolet-cured and electron beam-cured inks are considered coldset or non-heatset.
5. "Control device efficiency" means the ratio of VOC emissions recovered or destroyed by the control device to the total VOC emissions that are introduced into the device, expressed as a percentage.
6. "Emission baseline" means a level of emissions calculated by multiplying two factors:
  - a. The lowest of the source's actual or allowable emission rate in emissions per unit of production; and
  - b. The source's actual capacity utilization, or units of production, over some representative time period. Generally, the time period is the preceding two (2) years unless the source can demonstrate that those years were not representative of historical production.
7. "Flexible package" means any package or part of a package the shape of which may be readily changed. A "flexible package" includes any bag, pouch, liner or wrap made of paper, plastic, film, aluminum foil, or metalized or coated film or paper, alone or in combination.

- a. Flexible package does not include any folding carton, self-adhesive labels, gift wrap, wall covering, vinyl products, decorative laminates, floor coverings or tissue products.
8. "Flexographic printing" means the application of words, designs and/or pictures to a substrate by means of a roll-printing technique in which the pattern to be applied is raised above the printing roll and the image carrier is made of rubber or other elastomeric materials.
9. "Fountain solution" means with respect to offset lithographic printing, a water-based solution that contains small amounts of gum Arabic or synthetic resins, acids, buffer salts and a wetting agent or dampening aid applied to the image plate to reduce the surface tension of the solution.
10. "Fountain solution reservoir" means the collection tank that accepts fountain solution recirculated from printing unit(s). In some cases, the tanks are equipped with cooling coils for refrigeration of the fountain solution.
11. "Heatset" means a lithographic printing process where the printing inks are set by the evaporation of ink oils in a heatset dryer.
12. "Heatset dryer" means any device used in heatset web offset lithographic printing to heat the printed substrate and to promote the evaporation of ink oils.
13. "Letterpress printing" means a printing process in which the image area is raised relative to the non-image area, and the paste ink is transferred to the substrate directly from the image surface;
14. "Lithographic printing" means a printing process in which the image and non-image areas are chemically differentiated, i.e., the image area is oil receptive and the non-image area is water receptive.
15. "Offset lithographic printing" means a printing process that transfers the ink film from the lithographic plate to an intermediary surface which is a rubber covered roller or blanket, which, in turn, transfers the ink film to the substrate.
16. "Packaging rotogravure printing" means rotogravure printing upon paper, paper board, metal foil, plastic film or other substrates, and other substrates, which are, in subsequent operations, formed into packaging products and labels for articles to be sold.
17. "Printing press" means equipment used to apply words, pictures, or graphic designs to either a continuous substrate or a sheet. A continuous substrate consists of paper, plastic, or other material that is unwound from a roll, passed through coating or ink applicators and any associated drying

areas. The press includes all coating and ink applicators and drying areas between unwind and rewind of the continuous substrate. A sheet consists of paper, plastic, or other material that is carried through the process on a moving belt. The press includes all coating and ink applicators and drying operations between the time that the sheet is put on the moving belt until it is taken off.

18. "Publication rotogravure printing" means rotogravure printing upon paper which is subsequently formed into books, magazines, catalogues, brochures, directories, newspaper supplements, or and other types of printed materials.
19. "Retention factor" means the factor relating to the portion of volatile organic compounds contained in inks and cleaning solution is that retained in the printed web or in the shop towels used for cleaning.
20. "Roll printing" means the application of words, designs and/or pictures to a substrate by means of a series of hard rubber or steel rolls each with only partial coverage.
21. "Rotogravure printing" means the application of words, designs and/or pictures to a substrate by means of a roll-printing technique, in which the pattern to be applied by the printing roll is accomplished by an intaglio or recessed image areas in the form of cells.
22. "Sheet-fed printing" means with respect to offset lithographic printing, a process in which individual sheets of paper or other substrate are fed to the press.
23. "Specialty printing" means all other rotogravure and flexographic printing operations, excluding publication printing and packaging printing.
24. "Volatile organic compound" or "VOC" means "Volatile Organic Compound and Halogenated Organic Compound" or "VOC and HOC".
25. "Web printing" means with respect to offset lithographic printing, a process where continuous rolls of substrate material are fed to the press and rewound or cut to size after printing.

## **21.6 Applicability**

- A. This regulation applies to any roll, specialty, rotogravure, and flexographic printing facility whose potential to emit volatile organic compounds from printing operations is or ever has been, equal to or greater than fifty (50) tons/year.
- B. This regulation applies to any offset lithographic and letterpress printing facility whose combined actual emissions, before controls, during any consecutive 12-month period equal or exceed three (3) tons of VOC's.

1. For determining applicability with § 21.6(B) of this Part the following retention factors should be used:
  - a. A twenty percent (20%) volatile organic compound retention factor shall be used for heatset inks, meaning eighty percent (80%) of the volatile organic compounds in the ink is emitted during the printing process.
  - b. A ninety-five percent (95%) volatile organic compounds retention factor shall be used for sheet-fed and non-heatset web inks printed on absorptive substrates, meaning five percent (5%) of the volatile organic compounds in the ink are emitted during the printing process.
  - c. A fifty percent (50%) volatile organic compounds retention factor shall be used for cleaning solution VOC in shop towels for cleaning solutions with a volatile organic compounds composite vapor pressure of no more than 10 mm of mercury (Hg) at 20°C (68°F) if the contaminated shop towels are kept in closed containers. This means fifty percent (50%) of the VOC used on the shop towels is emitted during the cleaning process.
- C. This regulation applies to any flexographic or rotogravure press at a flexible package printing facility whose combined actual emissions, before controls, during any consecutive 12-month period equal or exceed three (3) tons of VOC's.

## **21.7 Emission Limitations**

### **21.7.1 Rotogravure and Flexographic Printing**

- A. The owner or operator of a rotogravure, flexographic, or specialty printing facility subject to this regulation and employing solvent-containing ink may not operate, cause, allow or permit the operation of the facility unless one of the following is complied with at all times:
  1. The volatile fraction of ink, as it is applied to the substrate, contains not more than twenty-five percent (25%) by volume of organic solvent and not less than seventy-five percent (75%) by volume of water, or
  2. The ink as it is applied to the substrate, less water, contains not less than sixty percent (60%) by volume of nonvolatile material (solids), or
  3. The installation of one or more approved volatile organic compound control device(s), as limited by §§ 21.7.1(B) and 21.7.1(G) of this Part, is certified to achieve at least a ninety percent (90%) reduction efficiency as measured across each control device, or

4. An alternative measure is employed which has been demonstrated to the satisfaction of the Director to have a volatile organic compound emission reduction at least equivalent to an amount potentially achieved by §§ 21.7.1(A)(1) or (2) of this Part. All alternative measures must be submitted for EPA approval as a source-specific SIP revision.
- B. A capture system must be used in conjunction with the emission control devices installed per § 21.7.1(A)(3) of this Part. The design and operation of a capture system must be consistent with good engineering practice, and, in conjunction with the control device, must provide for an overall reduction in volatile organic compound emissions at each printing press of at least:
1. Seventy-five percent (75%) where publication rotogravure printing process is employed, or
  2. Sixty-five percent (65%) where packaging rotogravure printing process or specialty printing process is employed, or
  3. Sixty percent (60%) where flexographic printing process is employed.
- C. Facilities using add-on controls to comply with § 21.7.1(A) of this Part must show that the equipment meets specific capture and control performance standards which will be set in an enforceable document.
- D. Control device efficiency will be determined using EPA-approved test methods. Calculations will be done on a solids-applied basis. Continuous compliance will be maintained at all times. Compliance averaging times will be met according to the control device chosen and EPA test methods, incorporated in § 21.4 of this Part, as follows:

Compliance Method	EPA Reference Test Method	Test Averaging Time
Reformulation	40 C.F.R. § 60 Appendix A-7 Method 24	Instantaneous
Solvent destruction or solvent recovery except carbon adsorption	40 C.F.R. § 60 Appendix A-7 Method 25	3 hours
Carbon adsorption	40 C.F.R. § 60 Appendix A-7 Method 25 or other test method as appropriate	7 day rolling average

- E. Other methods may be approved by the Director and EPA. Once the control efficiency has been determined for any add-on control device by 40 C.F.R. § 60 Appendix A-7 Method 25, incorporated in § 21.4 of this Part, or any alternative method approved by the Director and EPA, compliance shall be determined on an instantaneous basis (e.g. determined control efficiency shall be used to calculate whether samples from the process meet the applicable emissions limit.)
- F. The owner or operator of a facility using carbon adsorption as a control measure shall obtain data on daily solvent usage and solvent recovery and determine the solvent recovery efficiency of the system every day. The recovery efficiency for each day shall be computed as the ratio of the total recovered solvent for that day and the prior six (6) consecutive operating days to the total solvent usage for the same 7-day period. This ratio shall be expressed as a percentage. Facilities may apply to the Director for an alternative averaging time if meeting the emission limitation as a 7-day rolling average is not technically or economically feasible. In no event shall the averaging period exceed a 30-day rolling period. All alternative averaging periods must be consistent with EPA guidance.
- G. Control and capture equipment installed per §§ 21.7.1(A)(3) and 21.7.1(B) of this Part, will be incorporated in a permit issued in accordance with [Part 9](#) of this Subchapter (Air Pollution Control Permits) or by approval. Compliance with the permit or approval will be determined, when necessary, with DEM and EPA approved test methods. The permit or approval will include record keeping and test methods required to demonstrate compliance.

### **21.7.2 Offset Lithographic and Letterpress Printing**

- A. Requirements for fountain solutions:
  - 1. The owner or operator of a heatset web offset lithographic printing facility subject to this regulation, with a fountain solution reservoir of at least one gallon in capacity shall:
    - a. Limit the as-applied VOC content of the fountain solution to 1.6% by weight or less;
    - b. If the fountain solution is refrigerated to below sixty degrees Fahrenheit (60°F), limit the as-applied VOC content of the fountain solution to three percent (3%) by weight or less; or
    - c. Use fountain solution that contains no alcohol and limit the alcohol substitute content of the fountain solution to five percent (5%) by weight or less.
  - 2. The owner of a sheet-fed offset lithographic printing press with a minimum sheet size of greater than 11x17 inches and a fountain solution reservoir greater than one (1) gallon in capacity shall:

- a. Limit the as-applied VOC content of the fountain solution to five percent (5%) by weight or less;
  - b. If the fountain solution is refrigerated to below sixty degrees Fahrenheit (60°F), limit the as-applied VOC content of the fountain solution to 8.5% or less; or
  - c. Use fountain solution that contains no alcohol and limit the alcohol substitute content of the fountain solution to five percent (5%) by weight or less.
3. The owner of a coldset web offset lithographic printing press with a fountain solution reservoir of at least one (1) gallon in capacity shall use a fountain solution that contains no alcohol and that has an alcohol substitute content of five percent (5%) by weight or less.
- B. An offset lithographic or letterpress printing facility is exempt from § 21.7.2(A) of this Part if one or a combination of the following circumstances apply:
1. The press is used for book printing;
  2. The press has a maximum web width of twenty-two (22) inches or less;
  3. The press is operated with one or a combination of the following inks, coatings or varnishes:
    - a. Waterborne coatings;
    - b. Ultra-violet light or electron beam radiation cured materials;
    - c. Sheet-fed or non-heatset web inks; or
    - d. Sheet-fed or non-heatset web varnishes.
- C. The owner or operator of a heatset web offset lithographic printing press or heatset letterpress printing press with a web width of twenty-two (22) inches or more with the potential to emit at least twenty-five (25) tons per year of VOC (petroleum ink oil) emissions from all dryers, prior to controls, shall operate air pollution control equipment to:
1. Achieve a ninety percent (90%) destruction efficiency if the air pollution control equipment is installed prior to January 1, 2019;
  2. Achieve a ninety-five (95%) destruction efficiency if the air pollution control equipment is installed on or after January 1, 2019; or
  3. Reduce the control device outlet concentration to twenty (20) parts per million as hexane on a dry basis if the inlet VOC concentration is so low

that the control efficiency specified in §§ 21.7.2(C)(1) and (2) of this Part cannot be achieved.

- D. The owner or operator of an offset lithographic printing press or letterpress printing facility shall meet the following requirements for all cleaning solvents used at the facility:
1. Cleaning solvents shall have a composite vapor pressure less than ten (10) mmHg at twenty degrees Celsius (20°C);
  2. Cleaning solvents shall have a VOC content less than seventy percent (70%) by weight; or
  3. No more than one hundred ten (110) gallons of cleaning solvent, not meeting the limits in §§ 21.7.2(D)(1) or (2) of this Part, shall be used in any 12-month period use.
- E. The owner or operator of an offset lithographic printing press or letterpress printing facility subject to this regulation shall comply with the work practice requirements in § 21.9 of this Part.

### **21.7.3 Flexible Package Printing on a Flexographic or Rotogravure Press**

- A. The owner or operator of a flexographic or rotogravure press at a flexible package printing facility that has the potential to emit from the dryer, prior to controls, of at least twenty-five (25) tons per year of VOC from the use of inks, coatings and adhesives combined shall, in addition to complying with the work practice requirements in § 21.9 of this Part, use one of the following methods to control VOC emissions from such a press:
1. Use only individual inks, coatings and adhesives with an as-applied VOC content that does not exceed 0.8 kg VOC/kg of solids (0.8 lb VOC/lb of solids) or 0.16 kg VOC/kg of materials (0.16 lb VOC/lb of materials);
  2. Use only inks, coatings and adhesives so that the daily weighted average of the VOC content of the inks, coatings and adhesives used in a single printing line does not exceed 0.8 kg VOC/kg of solids (0.8 lb VOC/lb of solids) or 0.16 kg VOC/kg of materials (0.16 lb VOC/lb of materials); or
  3. Install, operate and maintain in accordance with the manufacturer's recommendations, a capture and a control device that produce the overall control efficiency for control equipment installed:
    - a. Prior to March 14, 1995 the overall efficiency must be greater than sixty-five percent (65%);
    - b. On or after March 14, 1995 the overall efficiency must be greater than eighty percent (80%).



## 21.8 Compliance Schedule

- A. The owner or operator of a rotogravure or flexographic printing facility subject to this regulation shall achieve compliance with the emission limitations in § 21.7.1 of this Part upon startup of within one year of becoming a potential fifty (50) ton per year VOC facility.
1. The emission limitations of § 21.7.1 of this Part, may be relaxed subject to the following conditions:
  2. The owner or operator of a facility documents to the satisfaction of the Director that such emission limitations cannot be met because neither coating reformulation(s) nor the installation of a control system is economically or technically feasible or even partially feasible, and
  3. The facility shall provide the Director with the documentation no later than twelve (12) months after the effective date of this regulation and
  4. The facility shall submit new emission limitations that will represent an Alternative Reasonably Available Control Technology (RACT) for approval by the Director. Alternative RACT shall also be submitted to EPA as a source-specific State Implementation Plan (SIP) revision. New emission limitations shall be achieved within two (2) years of submittal of a SIP revision to EPA; and
  5. The Director shall require the facility to undergo RACT review every three (3) years thereafter until the emission limitations of § 21.7.1 of this Part, are achieved.
- B. The owner or operator of an offset lithographic or letterpress printing facility shall achieve compliance with the emission limitations in § 21.7.2 of this Part by January 1, 2020 or within one year of becoming an actual three (3) ton per year VOC facility.
- C. The owner or operator of a flexographic or rotogravure press at a flexible package printing facility shall achieve compliance with the emission limitations in § 21.7.3 of this Part by January 1, 2020 or within one year of becoming an actual three (3) ton per year VOC facility.
- D. The compliance schedule shall not allow a printing press to supersede any applicable emission limitations required by the Director but not limited to:
1. Best Available Control Technology determinations, or
  2. Lowest Achievable Emissions Rate determinations, or
  3. Federal New Source Performance Standards, or

4. National Emission Standards of Hazardous Air Pollutants, or
5. Any other condition or standard that is specifically required by the Clean Air Act (as amended) for new or modified sources.

## **21.9 Work Practices**

- A. The owner or operator of any rotogravure, flexographic, flexible package printing, offset lithographic or letterpress printing facility meeting the applicability requirements in § 21.6 of this Part shall implement the following work practices:
1. All new and used VOC-containing ink, fountain solution and cleaning solvent, including solvents mixed on the premises, shall be stored in a nonabsorbent, non-leaking container. Such a container shall be kept closed at all times except when the container is being filled, emptied or is otherwise actively in use;
  2. Spills and leaks of VOC-containing ink, fountain solution and cleaning solvent shall be minimized. Any leaked or spilled VOC-containing ink, fountain solution or cleaning solvent shall be absorbed and removed immediately;
  3. Absorbent applicators, such as cloth and paper, which are moistened with VOC containing ink, fountain solution or cleaning solvent, shall be stored in a closed, nonabsorbent, non-leaking container for disposal or recycling; and
  4. VOC-containing ink, fountain solution and cleaning solvents shall be conveyed from one location to another in a closed container or pipe.

## **21.10 Compliance Demonstration/Testing**

Compliance with applicable sections of this regulation shall be demonstrated in accordance with 40 C.F.R. § 60 Appendix A-7 Methods 24, 24A, 25, incorporated in § 21.4 of this Part or any other EPA approved method which has been accepted by the Director and EPA. A one-hour bake time must be used for 40 C.F.R. § 60 Appendix A-7 Methods 24 and 24A, incorporated in § 21.4 of this Part and, further, 40 C.F.R. § 60 Appendix A-7 Methods 24 and 24A, incorporated in § 21.4 of this Part, apply to multicomponent coatings.

## **21.11 Recordkeeping**

### **21.11.1 Rotogravure and Flexographic Printing**

- A. The facility shall maintain the following information at the facility at all times. This information shall be kept current and be made available to the DEM or EPA upon request.

1. Printing coating press number.
2. Hours of operation per day or per year.
3. Method of application,
4. Number and types of inks coats applied to the substrate.
5. Drying method.
6. Substrate type.

B. For each ink coating:

1. Supplier name, ink coating name and Identification number
2. Ink Coating density (lb/gal).
3. Total volatile content of ink coating as supplied (vol %).
4. Water content of ink coating as supplied (wt%).
5. Exempt solvent content of ink coating as supplied (wt%).
6. Solids content of ink coating as supplied (wt%).
7. Name of diluent, if any.
8. Identification number of diluent.
9. Diluent solvent density (lb/gal).
10. VOC content of diluent (wt%).
11. Exempt solvent content of diluent (wt%).
12. Diluent/coating ratio (gal diluent/gal coating).
13. The facility should maintain §§ 21.11(B)(8) through (12) of this Part, for any diluent and solvents used for cleanup operations.

C. The facility shall keep the following records on site for each printing coating press on a daily basis:

1. Printing coating press number.
2. Time period.
3. Ink Coating identification number.

4. Amount of ink coating used (gallons).
  5. Diluent identification number.
  6. Amount of diluent used (gallons).
  7. The facility shall also maintain §§ 21.11(C)(5) and (6) of this Part, for clean-up operations.
- D. All record and reports must be maintained by the facility for no less than five (5) years.
- E. Additional recordkeeping and reporting for facilities with add-on control:
1. The facility shall maintain the following information at all times. This information shall be kept current and be made available to the DEM and EPA upon request.
    - a. Control device identification number and model number.
    - b. Manufacturer.
    - c. Installation date.
    - d. Printing press(es) controlled.
    - e. Whether or not the control device is always in operation when the press(es) it is serving is in operation.
    - f. Type of control device.
    - g. Destruction or removal efficiency.
    - h. Date tested (If not tested, method of determining destruction efficiency).
    - i. For thermal incinerators-design combustion temperature (°F).
    - j. For catalytic incinerators- design exhaust gas temperature (°F), design temperature rise across catalyst bed (°F), anticipated frequency of catalyst change, and catalyst changes.
    - k. For a condenser-design inlet temperature of cooling medium (°F), design exhaust gas temperature (°F).
    - l. For a carbon adsorber-design pressure drop across the adsorber, VOC concentration at breakthrough.

- m. Emission test results-inlet VOC concentration (ppm), outlet VOC concentration (ppm), method of concentration determination, date of determination.
  - n. Type and location of capture system.
  - o. Capture efficiency (%).
  - p. Method of determining capture efficiency.
2. The facility shall continuously monitor and record at least the following parameters:
- a. For thermal incinerators - exhaust gas temperature (°F).
  - b. For catalytic incinerators - exhaust gas temperature (°F), temperature rise across the catalyst bed (°F).
  - c. For condensers - inlet temperature of cooling medium (°F), exhaust gas temperature (°F).
  - d. For carbon adsorbers - pressure drop across the adsorber, hydrocarbon levels for breakthrough.

#### **21.11.2 Offset Lithographic and Letterpress Printing**

- A. The facility shall maintain the following information at the facility at all times. This information shall be kept current and be made available to the DEM or EPA upon request:
- 1. Monthly records of all cleaning solvents, fountain solution additives or inks used, as follows:
    - a. Name and description of each cleaning solvent, fountain solution additive or ink;
    - b. VOC content of each cleaning solvent, fountain solution additive or ink, as-applied, and the associated calculations;
    - c. VOC content of each cleaning solvent, fountain solution additive or ink, as supplied;
    - d. The amount of each cleaning solvent, fountain solution additive or ink;
    - e. A Safety Data Sheet for each cleaning solvent, fountain solution additive or ink;

- f. Documentation of control device efficiency and capture efficiency, if applicable, using an applicable EPA reference method or alternate method as approved by the Director; and
  - g. Date and type of maintenance performed on air pollution control equipment, if applicable.
- B. The owner or operator of any offset lithographic or letterpress printing facility whose actual emissions before controls are less than or equal to three (3) tons of VOC for any consecutive 12-month period calendar year shall maintain materials purchase or use records sufficient to verify they are not subject to this Part.

### **21.11.3 Flexible Package Printing on a Flexographic or Rotogravure Press**

- A. The facility shall maintain the following information at the facility at all times. This information shall be kept current and be made available to the DEM or EPA upon request:
  - 1. Monthly records of all inks, coatings, adhesives or cleaning solvents used, as follows:
    - a. Name and description of each ink, coating, adhesive or cleaning solvent;
    - b. VOC content of each ink, coating, adhesive or cleaning solvent, as-applied, and the associated calculations;
    - c. VOC content of each ink, coating, adhesive or cleaning solvent, as supplied;
    - d. The amount of each ink, coating, adhesive or cleaning solvent;
    - e. A Safety Data Sheet for each ink, coating, adhesive or cleaning solvent;
    - f. Documentation of control device efficiency and capture efficiency, if applicable, using an applicable EPA reference method or alternate method as approved by the Director; and
    - g. Date and type of maintenance performed on air pollution control equipment, if applicable.
- B. The owner or operator of any flexographic or rotogravure press at a flexible package printing facility whose actual emissions before controls are less than or equal to three (3) tons of VOC for any consecutive 12-month period calendar year shall maintain materials purchase or use records sufficient to verify they are not subject to this Part.

**250-RICR-120-05-25**

## **TITLE 250 - DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

### **CHAPTER 120 - AIR RESOURCES**

#### **SUBCHAPTER 05 - AIR POLLUTION CONTROL**

PART 25 - Control of Volatile Organic Compound Emissions from Cutback and Emulsified Asphalt

#### **25.1 Purpose**

The purpose of this regulation is to limit volatile organic compound emissions from cutback and emulsified asphalt used for road paving, maintenance or repairs during the ozone season

#### **25.2 Authority**

These regulations are authorized pursuant to R.I. Gen. Laws § 42-17.1-2(19) and Chapter 23-23, as amended, and have been promulgated pursuant to the procedures set forth in the R.I. Administrative Procedures Act, R.I. Gen. Laws Chapter 42-35.

#### **25.3 Application**

The terms and provisions of this regulation shall be liberally construed to permit the Department to effectuate the purposes of state laws, goals and policies.

#### **25.4 Severability**

If any provision of this regulation or the application thereof to any person or circumstance, is held invalid by a court of competent jurisdiction, the validity of the remainder of the regulation shall not be affected thereby.

#### **25.5 Definitions**

- A. Unless otherwise expressly defined in this section, the terms used in this regulation shall be defined by reference to Part 0 of this Subchapter (General Definitions). As used in this regulation, the following terms shall, where the context permits, be construed as follows:
1. "Asphalt" means a dark brown to black cementitious material which is solid, semisolid, or liquid in consistence and in which the predominating constituents are bitumens that occur in nature or which are obtained as residue in refining petroleum.

2. "Cutback asphalt" means asphalt cement that has been liquefied by blending with petroleum solvents or any other diluents that contains volatile organic compounds (VOC).
3. "Emulsified asphalt" means an emulsion of asphalt cement and water that contains a small amount of an emulsifying agent; emulsified asphalts are heterogeneous systems containing two normally immiscible phases (asphalt and water) in which the water forms the continuous phase of the emulsion and the minute globules of asphalt form the discontinuous phase.
4. "Solicit" means to require for use or to specify, by written or oral contract.

## **25.6 Applicability and Exemptions**

- A. Except as specified in § 25.6(B) of this Part, the provisions of this Part shall apply to any person who, on or after May 1, 2010, solicits the use of or applies asphalt for road paving, maintenance or repairs.
- B. The use of cutback asphalt or emulsified asphalt that does not comply with the provisions of § 25.7 of this Part shall be allowed provided that prior written approval is granted by the Director and the EPA. Any request for an approval under this section shall be made in writing and shall include, at a minimum, the following information:
  1. The scope of the activity;
  2. An assessment of alternative materials and products available;
  3. The amount of VOC that would be admitted as a result of the activity;
  4. The dates during which the activity would occur; and,
  5. A demonstration that it is necessary that the activity take place during the period of time between May 1st and September 30th.
- C. Wherever the term Volatile Organic Compound or VOC is used in this regulation, this term should be read as Volatile Organic Compound and Halogenated Organic Compound or VOC and HOC.

## **25.7 Prohibitions**

- A. During the period of May 1st through September 30th of any calendar year, no person shall use or apply cutback asphalt.
- B. During the period of May 1st through September 30th of any calendar year, no person shall use or apply emulsified asphalt unless:



1. The emulsified asphalt was formulated to contain 0.1% or less VOC by weight, as applied, or,
2. The emulsified asphalt, as applied, produces no greater than 6.0 milliliter of oil distillate by distillation as measured by ASTM Method D 244 or AASHTO Method T 59.

## **25.8 Recordkeeping**

Any person subject to this regulation shall maintain records of the use of asphalt for road paving, maintenance or repair; asphalt testing data; asphalt formulation data; and any other information that may be necessary to determine compliance with the requirements of this regulation. These records shall be maintained in a readily accessible location for a minimum of three (3) years and shall be made accessible to the Office of Air Resources upon request.

## **25.9 Compliance schedule**

Compliance with the provisions of this regulation shall be required on and after May 1, 2010.

**250-RICR-120-05-26**

## **TITLE 250 – DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

### **CHAPTER 120 – AIR RESOURCES**

#### **SUBCHAPTER 05 – AIR POLLUTION CONTROL**

PART 26 – Control of Organic Solvent Emissions from Manufacturers of Synthesized Pharmaceutical Products

### **26.1 Purpose and Authority**

#### **26.1.1 Purpose**

The purpose of this regulation is to limit volatile organic compound emissions from the manufacture of synthesized pharmaceutical products.

#### **26.1.2 Authority**

These regulations are authorized pursuant to R.I. Gen. Laws § 42-17.1-2(19) and R.I. Gen. Laws Chapter 23-23, and have been promulgated pursuant to the procedures set forth in the Rhode Island Administrative Procedures Act, R.I. Gen. Laws Chapter 42-35.

### **26.2 Application**

The terms and provisions of this regulation shall be liberally construed to permit the Department to effectuate the purposes of state laws, goals and policies.

### **26.3 Severability**

If any provision of this regulation or the application thereof to any person or circumstance, is held invalid by a court of competent jurisdiction, the validity of the remainder of the regulation shall not be affected thereby.

### **26.4 Incorporated Materials**

- A. These regulations hereby adopt and incorporate 40 C.F.R. §§ 60 Appendix A-1 Methods 1, 1A, 2, 2A, 2C, and 2D; 60 Appendix A-2 Methods 3 and 3A; 60 Appendix A-3 Method 4; 60 Appendix A-6 Method 18; 60 Appendix A-7 Methods 25 and 25A; (2018) by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.
- B. These regulations hereby adopt and incorporate the American Society for Testing and Material's "Standard Test Method for Vapor Pressure-Temperature

Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope" (ASTM D2879-10) (2010) by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.

## 26.5 Definitions

- A. Unless otherwise expressly defined in this section, the terms used in this regulation shall be defined by reference to Part 0 of this Subchapter (General Definitions). As used in this regulation, the following terms shall, where the context permits, be construed as follows:
1. "Condenser" means any device which cools a gas stream to a temperature which removes specific VOC by condensation.
  2. "Control system" means any number of control devices, including condensers, which are designed and operated to reduce the quantity of VOC emitted to the atmosphere.
  3. "Enclose" means to cover a volatile organic liquid surface in a manner such that it is not exposed to the atmosphere.
  4. "Pharmaceutical product and intermediate" means any drug or chemical substance or any intermediate used to make a drug or chemical substance which is intended to be administered to a person or animal to prevent or cure disease or otherwise enhance physical or mental welfare.
  5. "Production equipment exhaust system" means a device for collecting and directing out of the work area VOC fugitive emissions from reactor openings, centrifuge openings, and other vessel openings for the purpose of protecting workers from excessive VOC exposure.
  6. "Reactor" means a vat or vessel, which may be jacketed to permit temperature control, designed to contain chemical reactions.
  7. "Separation operation" means a physical or chemical process that separates a mixture of compounds and solvents into two (2) or more components. Specific mechanisms include but are not limited to: extraction, centrifugation, filtration, and crystallization.
  8. "Synthesized pharmaceutical manufacturing" means manufacture of pharmaceutical products and intermediates by chemical synthesis. The production and recovery of materials produced via fermentation, extraction of organic chemicals from vegetative materials or animal tissues, and formulation and packaging of the product are not considered synthesized pharmaceutical manufacturing.

9. "Volatile organic compound" or "VOC" means "Volatile Organic Compound and Halogenated Organic Compound" or "VOC and HOC".

## **26.6 Applicability**

- A. This regulation applies to the following sources of volatile organic compounds (VOC) at all synthesized pharmaceutical manufacturing facilities:
  1. Reactors;
  2. Distillation operations;
  3. Crystallizers;
  4. Centrifuges;
  5. Vacuum dryers;
  6. Air dryers;
  7. Production equipment exhaust systems;
  8. Rotary vacuum filters and other filters;
  9. Storage tanks;
  10. In-process tanks; and
  11. Leaks.
- B. The owner or operator of a synthesized pharmaceutical manufacturing facility subject to this regulation shall control the VOC emissions from each vent which has the potential to emit fifteen (15) pounds per day (lb/day) (6.8 kilograms per day [kg/day]) or more of VOC from reactors, distillation operations, crystallizers, centrifuges, and vacuum dryers. VOC emissions shall be controlled in accordance with the requirements in § 26.7 of this Part.
- C. An owner or operator of a facility which has sources whose emissions are below the threshold in § 26.6(B) of this Part shall comply with the certification, recordkeeping, and reporting requirements in §§ 26.10 and 26.11 of this Part for those sources.
- D. Any facility or source that becomes or is currently subject to the provisions of this regulation by exceeding the applicability threshold in § 26.6(B) of this Part will remain subject to this regulation even if the emissions later fall below the applicability threshold.

## 26.7 Standards

A. Any source commencing operation after November 19, 1992 must meet the following emission limitations upon commencing operations:

1. Surface condensers or equivalent controls

a. If surface condensers are used, the condenser outlet gas temperature shall not exceed the allowable temperature limit described for each associated vapor pressure in the following table; or

Allowable condenser outlet gas temperature, EC	VOC vapor pressure at 20EC, kPa (psi)	
-25	>40.01	(5.8)
-15	>20.0	(2.9)
0	>10.0	(1.5)
10	>7.0	(1.0)
25	>3.5	(0.5)

b. If other controls such as carbon absorption or incineration are used, the VOC emissions shall be reduced by at least as much as they would be by using a surface condenser. All such controls must be approved by the Department.

2. Air dryers and production equipment exhaust systems

a. The owner or operator of a synthesized pharmaceutical manufacturing facility subject to this regulation shall reduce the VOC emissions from all air dryers and production equipment exhaust systems:

- (1) By at least ninety percent (90%) on an hourly basis if actual emissions from all air dryers and production equipment exhaust are 150 kg/day (330 lb/day) or more of VOC, or
- (2) To 15.0 kg/day (33 lb/day) or less if actual emissions from all air dryers and production equipment exhaust are less than 150 kg/day (330 lb/day) of VOC.

### 3. Storage Tanks

- a. The owner or operator of a synthesized pharmaceutical manufacturing facility subject to this regulation shall reduce the VOC emissions from storage tanks by:
  - (1) Providing a vapor balance system or equivalent control that is at least ninety percent (90%) effective in reducing emissions from truck or railcar deliveries to storage tanks with capacities greater than 7,500 liters (L) (2,000 gallons [gal]) that store VOC with vapor pressures greater than 28.0 kiloPascals (kPa) (4.1 pounds per square inch [psi]) at 20 C (68°F); and
  - (2) Installing pressure/vacuum conservation vents set at a minimum pressure of 0.2 kPa (0.03 pounds per square inch atmospheric [psia]) on all storage tanks that store VOC with vapor pressures greater than 10.0 kPa (1.5 psi) at 20°C (68°F).

### 4. Centrifuges, rotary vacuum filters, and other filters

- a. The owner or operator of a synthesized pharmaceutical facility subject to this regulation shall enclose all centrifuges, rotary vacuum filters, and other filters having an exposed liquid surface if the liquid contains VOC and exerts a total VOC vapor pressure of 3.50 kPa (0.5 psi) or more at 20°C (68°F), as determined by ASTM D2879-10, incorporated in § 26.4(B) of this Part.

### 5. In-process tanks

- a. The owner or operator of a synthesized pharmaceutical facility subject to this regulation shall install covers on all in-process tanks that contain VOC at any time. These covers shall be constructed of a nonporous or nonabsorbent material and form a tight seal with the sides of the tank and have no gaps or holes. These covers shall remain closed at all times except when production, sampling, maintenance, or inspection procedures require operator access.

### 6. Leaks

- a. The owner or operator of a synthesized pharmaceutical manufacturing facility subject to this regulation shall visually inspect for liquid leaks once per week and use a portable VOC detector to inspect for vapor leaks once per month to inspect all equipment listed in §§ 26.6(A)(1) through (11) of this Part. All leak repairs shall be completed as soon as practicable but no later than fifteen (15) calendar days after the leak is found.

## 26.8 Test Methods and Compliance Procedures

- A. If a source uses air pollution control equipment to comply with the requirements of this regulation, compliance shall be demonstrated in accordance with 40 C.F.R. § 60, Appendix A, Method 18, Method 25, or Method 25A, incorporated in § 26.4(A) of this Part, or any other EPA approved method which has been approved by the Director.
- B. Selection of a method for testing compliance shall be based on consideration of total concentration and speciation of the organics present and on consideration of the potential presence of interfering gases. Only Method 25, which measures VOC as carbon, may be used for determining destruction efficiency of incinerators or catalytic incinerators.
- C. Except as indicated in §§ 26.8(C)(1) and (2) of this Part, a test shall consist of three (3) separate runs, each lasting a minimum of sixty (60) minutes, unless the Director determines that process variables dictate shorter sampling times.
  - 1. When the test is being done to determine the efficiency of a fixed-bed carbon adsorption system with a common exhaust stack for all of the individual adsorber vessels, the test shall consist of three (3) separate runs, each coinciding with one or more complete sequences through the adsorption cycles of all the individual adsorber vessels.
  - 2. When the test is being done to determine the efficiency of a fixed-bed 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 (3) separate runs. Each run shall coincide with one or more complete adsorption cycles.
- D. Method 1 or 1A of 40 C.F.R. § 60 Appendix A-1, incorporated in § 26.4(A) of this Part, shall be used for velocity traverses.
- E. Method 2, 2A, 2C, or 2D of 40 C.F.R. § 60 Appendix A-1, incorporated in § 26.4(A) of this Part, shall be used to measure velocity and volumetric flow rates.
- F. Method 3 or 3A of 40 C.F.R. § 60 Appendix A-2, incorporated in § 26.4(A) of this Part, shall be used for O<sub>2</sub> and CO<sub>2</sub> analysis.
- G. Method 4 of 40 C.F.R. § 60 Appendix A-3, incorporated in § 26.4(A) of this Part, shall be used to measure stack gas moisture.
- H. Methods 2, 2A, 2C, 2D, 3, 3A and 4 of 40 C.F.R. § 60 Appendix A, incorporated in § 26.4(A) of this Part, shall be performed, as applicable, at least twice during each test run.
- I. Use of modifications of any of the analytical methods specified in §§ 26.8(A) through (H) of this Part shall be approved or disapproved by the Director on a

case-by-case basis. An owner or operator shall submit sufficient documentation for the Director to find that the analytical methods specified in §§ 26.8(A) through (H) of this Part will yield inaccurate results and that the proposed modification is appropriate.

## **26.9 Monitoring for Air Pollution Control Equipment**

- A. At a minimum, continuous monitors measuring the following parameters shall be installed on air pollution control equipment used to control sources subject to this regulation upon startup:
  - 1. Destruction device combustion temperature;
  - 2. Temperature rise across a catalytic incinerator bed;
  - 3. VOC concentration at the outlet of a carbon adsorption unit at breakthrough;
  - 4. Outlet gas temperature of a refrigerated condenser; and
  - 5. Outlet gas temperature of a non-refrigerated condenser coolant supply system.
- B. Each monitor shall be:
  - 1. Equipped with a recording device,
  - 2. Calibrated quarterly, and
  - 3. Operated at all times that the associated control equipment is operating.

## **26.10 Recordkeeping**

- A. The owner or operator of a pharmaceutical manufacturing facility subject to this shall maintain the following records:
  - 1. Recording of parameters listed in § 26.9 of this Part.
  - 2. A record of the solvent true vapor pressure as determined by ASTM D287910, incorporated in § 26.4(B) of this Part, for each VOC used in a source which is subject to this regulation. For a pure solvent, a record of published data reporting the true vapor pressure of that solvent as determined using ASTM D2879-10 is acceptable to fulfill this requirement.
- B. For any leak subject to § 26.7(A)(6) of this Part, which cannot be readily repaired within twenty-four (24) hours after detection, the following shall be recorded:
  - 1. The name of the leaking equipment;



2. The date and time the leak is detected;
  3. The action taken to repair the leak; and
  4. The date and time the leak is repaired.
- C. All records required in this subsection shall be maintained at the facility for a minimum of five (5) years.

## **26.11 Reporting**

### **26.11.1 Initial Compliance Certification Plan**

- A. The owner or operator of any facility subject to this regulation shall submit an initial compliance certification for that source at least 6 months prior to start-up of the operation.
- B. The initial compliance certification plan shall include as a minimum the following information:
1. The name and location of the facility;
  2. The name, address and telephone number of the person responsible for the facility;
  3. An identification of subject sources at the facility;
  4. The information specified in § 26.11.1(C) of this Part for each subject source; and
  5. The time at which the facility's "day" begins if a time other than midnight local time is used to define a "day".
- C. The initial compliance certification plan shall also include, as a minimum, the following information for each subject source:
1. Identification of the applicable emission limitation, equipment specification, or work practice, as specified in § 26.7 of this Part;
  2. The method by which compliance has been or will be achieved;
  3. For each source subject to numerical emission limitations, the estimated actual and potential emissions without control, and the basis for the estimate.

### **26.11.2 Final Compliance Certification**

- A. Upon startup for a facility, the owner or operator of any facility containing sources subject to this regulation shall certify to the Director that the facility is in compliance with the provisions of this regulation.
- B. The final compliance certification shall include, at a minimum, the following information:
  - 1. The method by which compliance has been achieved for each subject source;
  - 2. For each source subject to numerical emission limitations, the estimated actual and potential emissions without control, and the basis for the estimate;
  - 3. Identification of the control system(s) in use for each subject source;
  - 4. The design performance efficiency of the control system;
  - 5. For each source subject to numerical emission limitations, the estimated emissions after control;
  - 6. Certification that each subject source at the facility is in compliance with the applicable emission limitation, equipment specification, or work practice;
  - 7. An identification of any changes from the initial compliance certification plan.

### **26.11.3 Reports of Noncompliance with Standards**

- A. The owner or operator of any facility containing sources subject to this section shall, for each incidence of noncompliance with the standards in § 26.7 of this Part, within thirty (30) calendar days of becoming aware of such occurrence, supply the Director with the following information:
  - 1. The name and location of the facility;
  - 2. The subject source(s) that caused the noncompliance with the standard;
  - 3. The time and date of first observation of the incident of noncompliance;
  - 4. The cause and expected duration of the incident of noncompliance;
  - 5. For sources subject to numerical emission limitations, the estimated rate of emissions (expressed in the units of the applicable emission limitation) during the incident and the operating data and calculations used in estimating the emission rate.

6. The proposed corrective actions and schedule to correct the conditions causing the incidence of noncompliance.

**250-RICR-120-05-27**

## **TITLE 250 – DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

### **CHAPTER 120 – AIR RESOURCES**

#### **SUBCHAPTER 05 – AIR POLLUTION CONTROL**

PART 27 – Control of Nitrogen Oxide Emissions

### **27.1 Purpose and Authority**

#### **27.1.1 Purpose**

The purpose of this regulation is to limit emissions of nitrogen oxides from stationary sources.

#### **27.1.2 Authority**

These regulations are authorized pursuant to R.I. Gen. Laws § 42-17.1-2(19) and R.I. Gen. Laws Chapter 23-23, and have been promulgated pursuant to the procedures set forth in the Rhode Island Administrative Procedures Act, R.I. Gen. Laws Chapter 42-35.

### **27.2 Application**

The terms and provisions of this regulation shall be liberally construed to permit the Department to effectuate the purposes of state laws, goals and policies.

### **27.3 Severability**

If any provision of this regulation or the application thereof to any person or circumstance, is held invalid by a court of competent jurisdiction, the validity of the remainder of the regulation shall not be affected thereby.

### **27.4 Incorporated Materials**

- A. These regulations hereby adopt and incorporate 40 C.F.R. §§ 63.11223(b)(1) through (7); 63.7540(a)(10)(i) through (vi); 60 Appendix B, Performance Specification 2; 60 Appendix F; and 60 Appendix A (2018) by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.
- B. These regulations hereby adopt and incorporate the American Society for Testing and Materials' "D2156-09" (2009), "D3228-08" (2008), and "D4629-17" (2017) by reference, not including any further editions or amendments thereof

and only to the extent that the provisions therein are not inconsistent with these regulations.

## 27.5 Definitions

- A. Unless otherwise expressly defined in this section, the terms used in this regulation shall be defined by reference to Part 0 of this Subchapter (General Definitions). As used in this regulation, the following terms shall, where the context permits, be construed as follows:
1. "Actual emissions" means the actual rate of emissions of a pollutant from a piece of equipment or a pollutant-emitting activity as determined in accordance with §§ 27.5(A)(1)(a) through (c) of this Part:
    - a. In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a two-year period which precedes the particular date and which is representative of normal stationary source operation. Actual emissions shall be calculated using the equipment's or activity's actual operating hours, production rates and types of materials processed, stored or combusted during the selected time period;
    - b. The Director may presume that stationary source specific allowable emissions for the equipment or activity are equivalent to the actual emissions of the equipment or activity;
    - c. For any equipment or activity which has not begun normal operations on the particular date, actual emissions shall equal the potential to emit of the equipment or activity on that date.
  2. "Combined cycle gas turbine" means any stationary gas turbine which recovers heat from the gas turbine exhaust gases to heat water or generate steam.
  3. "Combustion turbine" means any simple cycle gas turbine or any combined cycle gas turbine including the duct burner portion thereof.
  4. "Emergency standby internal combustion engine" means an internal combustion engine operated only as a mechanical or electrical power source for a stationary source when the primary power source has been rendered inoperable. This does not include power interruptions pursuant to an interruptible power service agreement.
  5. "Equivalent control" means a control system that may be substituted for the required control system(s). The stationary source applying to use an equivalent control must demonstrate to the satisfaction of the Director and

EPA that the emission reductions achieved are equal to or greater than the emission reductions required by the regulation. Appropriate test methods or other replicable criteria in accordance with Department and EPA guidance must be used to demonstrate equivalence.

6. "Industrial-commercial-institutional boiler" means a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. This term does not include utility boilers used by electric utilities to generate electricity.
7. "Internal combustion engine" means any engine in which power, produced by heat and/or pressure developed in the engine cylinder(s) by burning a mixture of air and fuel, is subsequently converted to mechanical work by means of one (1) or more pistons.
8. "Lean-burn engine" means an internal combustion engine where the amount of oxygen in the exhaust gases is one percent (1%) or more, by weight.
9. "Liquefied petroleum (LP) gas" means liquefied petroleum gas as defined by the American Society for Testing and Materials in ASTM D1835-13, "Standard Specification for Liquefied Petroleum (LP) Gases."
10. "Low NO<sub>x</sub> burner" means a commercially available modified combustion burner designed to minimize NO<sub>x</sub> formation through low excess air firing, controlled mixing of primary combustion air and fuel (staged air or staged fuel), reducing peak furnace temperature or other burner designs judged to be low NO<sub>x</sub> burners by the Director and EPA based on a review of evidence submitted by the subject stationary source.
11. "Rich-burn engine" means an internal combustion engine where the amount of oxygen in the engine exhaust gases is less than one percent (1%) by weight.
12. "Simple cycle gas turbine" means any stationary gas turbine which does not recover heat from the gas turbine exhaust gases to preheat the inlet combustion air to the gas turbine, or which does not recover heat from the gas turbine exhaust gases to heat water or generate steam.
13. "Utility boiler" means a device, with a heat input capacity of 250 million Btu per hour or greater, that combusts any fuel and produces steam for the primary purpose of generating electricity. This term does not include combustion turbines.

## **27.6 Applicability and Exemptions**

- A. This regulation applies to all stationary sources which have or ever have had, since January 1, 1990, the potential to emit fifty (50) tons of nitrogen oxides (NOx) per year from all pollutant-emitting equipment or activities.
- B. A stationary source with potential yearly emissions of fifty (50) tons or more of NOx, but with actual emissions not exceeding fifty (50) tons per year of NOx, may apply to the Director for an exemption from §§ 27.8 and 27.9 of this Part. Application for an exemption must be submitted to the Director within 6 months of becoming a potential fifty (50) ton per year NOx source. The documentation must include the previous three years of NOx emissions, in tons per year, since becoming a potential fifty (50) ton per year NOx source. Exemption from § 27.8 of this Part will be in the form of an enforceable document issued by the Director which limits actual emissions to less than fifty (50) tons per year of NOx and shall include, but not necessarily be limited, to the following conditions:
  - 1. Actual annual emissions shall not exceed fifty (50) tons of NOx per year, and
  - 2. The stationary source shall meet the emission cap over every consecutive twelve-month period. Recordkeeping to demonstrate compliance shall be conducted as provided in § 27.10(I) of this Part and shall be kept on a monthly basis. The cap must be consistent with the anticipated level of emissions in the approved State Implementation Plan (SIP).
  - 3. Any stationary source that has been issued an emissions cap and fails to meet the requirements of the enforceable document must immediately be in compliance with RACT.
- C. Any emergency standby internal combustion engines which is operated less than five hundred (500) hours during any consecutive twelve-month period is exempt from § 27.8 of this Part. Recordkeeping shall be conducted as provided in § 27.10(J) of this Part.
- D. Any emergency standby internal combustion engine operated under the provisions of this subsection must immediately be in compliance with RACT if the hours of operation in any twelve-month period exceeds five hundred (500) hours.

## **27.7 Reasonably Available Control Technology (RACT) Plan Requirements**

- A. Any stationary source subject to the provisions of § 27.8 of this Part shall, by six (6) months after becoming a potential fifty (50) ton per year NOx stationary source, submit to the Director a RACT proposal for approval which includes all information specified in §§ 27.7(B) or (C) of this Part.

B. All RACT proposals submitted to comply with §§ 27.8.1, 27.8.2, or 27.8.3 of this Part shall include the following information:

1. An inventory of all NOx-emitting equipment with a heat input capacity greater than or equal to one million Btu per hour at the stationary source.
2. The maximum capacity, in millions of Btu per hour, of each piece of NOx-emitting equipment.
3. The type of fuel or fuels combusted in each piece of NOx-emitting equipment.
4. The maximum NOx emission rate for each piece of NOx-emitting equipment in lbs per million Btu for each fuel burned.
5. The actual amount of NOx emitted for the previous three calendar years, from each piece of NOx-emitting equipment.
6. A summary of the applicable emission limits and requirements of this regulation and how the stationary source will comply.
7. A schedule for the implementation of RACT, including dates for each of the following where applicable: completion of engineering, awarding of contracts, initiation of construction, completion of construction and final compliance with RACT.
8. Any additional information requested by the Director.

C. All RACT proposals submitted to comply with §§ 27.8.4 or 27.8.7 of this Part shall include the following information:

1. An inventory of all NOx-emitting equipment with a heat input capacity greater than or equal to one million Btu per hour at the stationary source.
2. The maximum capacity, in millions of Btu per hour, of each piece of NOx-emitting equipment.
3. The type of fuel or fuels combusted in each piece of NOx-emitting equipment.
4. The maximum NOx emission rate for each piece of NOx-emitting equipment, in lbs per million Btu, for each fuel burned.
5. The actual amount of NOx emitted for the previous three calendar year , from each piece of NOx-emitting equipment.



6. An examination of the technical and economic feasibility of available NO<sub>x</sub> control techniques for each piece of NO<sub>x</sub>-emitting equipment with the potential to emit ten (10) tons or more of NO<sub>x</sub> per year.
  7. The control option or combination of control options selected as RACT, including emission limits and the test methods to be used to demonstrate compliance.
  8. The amount of reduction in NO<sub>x</sub> emissions that will be associated with implementing the selected control option(s).
  9. A schedule for the implementation of RACT, including dates for each of the following where applicable: completion of engineering, awarding of contracts, initiation of construction, completion of construction and final compliance with RACT.
  10. The testing, monitoring, record keeping and reporting procedures to be used to demonstrate continuous compliance.
  11. Any additional information requested by the Director that is deemed necessary to determine RACT.
- D. After reviewing a RACT proposal submitted to comply with §§ 27.8.1, 27.8.2 or 27.8.3 of this Part the Director will issue a final approval or disapproval of the proposal.
- E. After reviewing a RACT proposal submitted to comply with § 27.8.4 of this Part, the Director, in consultation with the EPA, shall prepare a proposed enforceable document specifying RACT for the stationary source. The enforceable document shall be subject to a thirty-day public comment period. A public hearing for interested persons to appear and to submit written or oral comments on the enforceable document shall be held upon request. The Director may also hold a hearing at their discretion, whenever they believe there is a significant degree of public interest in the proposed action. If held, a hearing shall take place no earlier than thirty (30) days nor later than sixty (60) days following initial public notice. Comments from the stationary source and/or any interested persons shall be recorded at the public hearing. Written comments, to be considered part of the record, must be submitted during the public comment period. The public comment period shall commence on the date of initial public notice. The public comment period shall close thirty (30) days later, if no public hearing is held. If a public hearing is held, the public comment period shall close at the close of the public hearing or on a later date set by the Director. The final enforceable document shall be submitted to the EPA for approval as a source specific revision to the State Implementation Plan.

## **27.8 Reasonably Available Control Technology (RACT) Requirements**

### **27.8.1 Utility Boilers**

- A. After May 31, 1995, no person shall cause or allow the emission of NO<sub>x</sub> from any utility boiler in excess of the following emission limitations:
1. 0.20 lbs per million Btu of actual heat input when operated on natural gas or liquified petroleum gas (LP).
  2. 0.25 lbs per million Btu of actual heat input when operated on fuel oil.

### **27.8.2 Industrial - Commercial - Institutional Boilers**

- A. After May 31, 1995, no person shall cause or allow the emission of NO<sub>x</sub> from any industrial, commercial, or institutional boiler, fired with natural gas or distillate oil, with a heat input capacity of fifty (50) million Btu per hour or greater, in excess of the following emission limitations:
1. 0.10 lbs per million Btu of actual heat input when operated on natural gas.
  2. 0.12 lbs per million Btu of actual heat input when operated on distillate oil or liquified petroleum gas (LP).
- B. After May 31, 1995, no person shall cause or allow the emission of NO<sub>x</sub> from any industrial, commercial, or institutional boiler, fired with residual oil, with a heat input capacity of fifty (50) million Btu per hour or greater, unless the boiler is equipped with low - NO<sub>x</sub> burners and flue gas recirculation (with a minimum of ten percent (10%) flue gas recirculation) or equivalent control.
- C. After May 31, 1995, no person shall cause or permit the emission of NO<sub>x</sub> from any industrial, commercial, or institutional boiler, with a heat input capacity of 1 million Btu per hour or greater, but less than fifty (50) million Btu per hour, unless the boiler is tuned at least once every two (2) years in accordance with the procedure described in § 27.11 of this Part. The tune-up procedure specified in 40 C.F.R. § 63.11223(b)(1) through (7), incorporated in § 27.4(A) of this Part, is an acceptable substitute procedure for the procedure specified in § 27.11 of this Part.
1. The annual tune-up procedure specified in 40 C.F.R. §§ 63.7540(a)(10)(i) through (vi), incorporated in § 27.4(A) of this Part, is an acceptable substitute procedure for the procedure specified in § 27.11 of this Part for those stationary sources subject to 40 C.F.R. § 63, Subpart DDDDD.

### **27.8.3 Internal Combustion Engines**

- A. After May 31, 1995, no person shall cause or permit the emission of NO<sub>x</sub> from any internal combustion engine, capable of producing four hundred (400) horsepower (HP) or more, in excess of the following emission limitations:
1. Rich-burn Engines:
    - a. 1.5 grams per brake horsepower-hour when operated on natural gas.
  2. Lean-burn Engines:
    - a. 2.5 grams per brake horsepower-hour when operated on natural gas.
    - b. 9.0 grams per brake horsepower-hour when operated on fuel oil.

#### **27.8.4 Miscellaneous Stationary Sources**

- A. Any stationary source, equipment or pollutant emitting activity, with the potential to emit ten (10) tons or more of NO<sub>x</sub> per year, that is not covered by §§ 27.8.1, 27.8.2, or 27.8.3 of this Part shall install and operate in compliance with RACT, as specified in an enforceable document issued by the Director.
- B. Any stationary source that that is not covered by §§ 27.8.1, 27.8.2, or 27.8.3 of this Part and becomes a potential fifty (50) ton per year NO<sub>x</sub> stationary source after November 30, 1993, shall install and operate in compliance with RACT, within eighteen (18) months of the date that the stationary source first becomes a potential fifty (50) ton per year NO<sub>x</sub> stationary source. RACT shall be specified in an enforceable document issued by the Director.

#### **27.8.5 Exemptions**

- A. The RACT requirements in §§ 27.8.1 through 27.8.4 of this Part do not apply to equipment and pollutant emitting activities that have been determined to be BACT or LAER in any permit issued by the Director pursuant to Part 9 of this Subchapter (Air Pollution Control Permits) since November 15, 1992.
- B. The RACT requirements in §§ 27.8.3 or 27.8.4 of this Part do not apply to equipment and pollutant-emitting activities listed below, that have been issued a permit for the construction/installation of new equipment by the Director, pursuant to [Part 9](#) of this Subchapter (Air Pollution Control Permits), since the indicated date.
1. Combustion turbine facilities – January 6, 1989.
  2. Internal combustion engines – September 28, 1989.

3. Fluidized bed boilers – March 11, 1991.
- C. The RACT requirements in § 27.8.1 of this Part do not apply to any utility boiler that commits, by October 3, 1994, in an enforceable document, to either permanently shut down and dismantle that existing utility boiler by May 31, 1995, or replace that existing utility boiler by December 31, 1996, as part of a repowering project. The repowered emissions unit(s) must meet a NO<sub>x</sub> emission limitation that has been determined to be BACT or LAER in a permit issued by the Director pursuant to Part 9 of this Subchapter (Air Pollution Control Permits). In addition to the commitment, the source must comply with the alternative RACT requirements of § 27.8.6 of this Part. The final enforceable document and the alternative RACT determination shall be submitted to the EPA for approval as a source specific revision to the State Implementation Plan (SIP).

### **27.8.6 Alternative RACT**

- A. The RACT requirements in §§ 27.8.1 through 27.8.3 of this Part may be relaxed on a case-by-case basis, if by six (6) months after becoming a potential fifty (50) ton per year NO<sub>x</sub> stationary source, the owner or operator makes application to the Director for an alternative RACT determination. An application for an alternative RACT determination must include the following:
1. An inventory of all NO<sub>x</sub>-emitting equipment with a heat input capacity greater than or equal to one million Btu per hour at the stationary source.
  2. The maximum capacity, in millions of Btu per hour, of each piece of NO<sub>x</sub>-emitting equipment.
  3. The type of fuel or fuels combusted in each piece of NO<sub>x</sub>-emitting equipment.
  4. The maximum NO<sub>x</sub> emission rate for each piece of NO<sub>x</sub>-emitting equipment, in lbs per million Btu, for each fuel burned.
  5. The actual amount of NO<sub>x</sub> emitted the previous three years, from each piece of NO<sub>x</sub>-emitting equipment.
  6. Economic and/or technical documentation that demonstrates to the satisfaction of the Director and EPA that the applicable emission limitations cannot feasibly be met.
  7. An examination of the technical and economic feasibility of alternative NO<sub>x</sub> control techniques for each piece of NO<sub>x</sub>-emitting equipment.
  8. The control option or combination of control options proposed as alternative RACT, including emission limits and test methods to demonstrate compliance.

9. The amount of reduction in NO<sub>x</sub> emissions that will be associated with implementing the selected control option(s).
  10. A schedule for the implementation of alternative RACT, including dates for each of the following where applicable: completion of engineering, awarding of contracts, initiation of construction, completion of construction and final compliance with alternative RACT.
  11. The testing, monitoring, recordkeeping and reporting procedures to be used to demonstrate continuous compliance.
  12. Any additional information requested by the Director that is deemed necessary to determine alternative RACT.
- B. Any alternative RACT determination will not become final until approved by EPA as a source specific State Implementation Plan (SIP) revision;
- C. The stationary source shall conduct a RACT review every three (3) years after the final compliance date until the RACT requirements in §§ 27.8.1, 27.8.2, or 27.8.3 of this Part are achieved. This RACT review must include the same information required in an application for an alternative RACT determination. This RACT review will not become final until approved by EPA as a source specific State Implementation Plan (SIP) revision.

#### **27.8.7 Fuel Switching**

- A. Any facility subject to the RACT requirements in §§ 27.8.1 through 27.8.4 of this Part may propose to comply with those requirements by fuel switching. Fuel switching refers to instances where a piece of NO<sub>x</sub>-emitting equipment historically burned one primary fuel, such as residual oil, and under a fuel switching program, the equipment would burn a cleaner fuel, such as natural gas, during the ozone season (May 1 - September 30) and may switch back to the historic fuel for some or all of the non-ozone season.
1. The owner or operator of a stationary source proposing a fuel switching program must file an application with the Office of Air Resources for approval of a fuel switching program no later than six (6) months after becoming a potential fifty (50) ton per year NO<sub>x</sub> facility.
  2. An application for approval of a fuel switching program must demonstrate that the NO<sub>x</sub> reductions achieved will be the equivalent of that which would be achieved if the stationary source were operating in compliance with its applicable emission limitations throughout the year.
  3. An application for approval of a fuel switching program must demonstrate that the program uses a long-term emissions averaging approach consistent with the Environmental Protection Agency's guidance. This

guidance is contained in a July 30, 1993, memo from Michael Shapiro entitled "Fuel Switching to Meet the Reasonably Available Control Technology Requirements for Nitrogen Oxides."  
[https://www3.epa.gov/ttn/naaqs/aqmguide/collection/cp2/19930730\\_shapiro\\_fuel\\_switch\\_nox\\_ract.pdf](https://www3.epa.gov/ttn/naaqs/aqmguide/collection/cp2/19930730_shapiro_fuel_switch_nox_ract.pdf)

4. Any fuel switching program will not become final until approved by EPA as a source specific State Implementation Plan (SIP) revision.

## **27.9 Compliance Testing and Emission Monitoring Requirements**

- A. Compliance with §§ 27.8.1 and 27.8.7 of this Part shall be demonstrated by installation calibration, maintenance and operation of a continuous emission monitoring system for NO<sub>x</sub> and O<sub>2</sub> or CO<sub>2</sub>.
- B. Compliance with §§ 27.8.2(A) and (B), 27.8.3, 27.8.4, and 27.8.6 of this Part shall be demonstrated either by emission testing or by installation calibration, maintenance and operation of a continuous emission monitoring system for NO<sub>x</sub> and O<sub>2</sub> or CO<sub>2</sub>.
- C. Compliance with § 27.8.2(C) of this Part shall be demonstrated by record keeping as specified in § 27.10(H) of this Part.
- D. Compliance with the emission limitations in § 27.8.1 of this Part shall be based on 24-average concentrations.
- E. Compliance with the emission limitations in §§ 27.8.2 and 27.8.3 of this Part shall be based on one-hour average concentrations. Emission testing shall consist of three (3), one-hour test runs. Compliance with the emission limitation must be demonstrated utilizing the arithmetic mean of the three (3) test runs.
- F. Continuous emission monitoring systems shall comply with the following requirements:
  1. Performance specification, monitor location, calibration and operating procedures, quality assurance procedures for each monitor and a sample calculation showing how the concentrations from the NO<sub>x</sub> CEMs will be converted in to the applicable units and averaging time of the emission limit must be submitted to the Office of Air Resources for review and approval at least one hundred and eighty (180) days prior to expected installation.
  2. All emission data shall be continuously monitored and recorded.
  3. The continuous emission monitors must satisfy the requirements of 40 C.F.R. § 60 Appendix B, Performance Specification 2, incorporated in § 27.4(A) of this Part.

4. The continuous emission monitors must satisfy the quality assurance requirements of 40 C.F.R. § 60, Appendix F, incorporated in § 27.4(A) of this Part.
  5. The continuous emission monitoring system will be used to determine compliance with the applicable allowable NO<sub>x</sub> emission rates.
  6. The stationary source shall have the capability of transmitting all of the collected continuous emission monitoring data to the Office of Air Resources via a telemetry system.
  7. Each continuous emission monitoring system shall be operated at all times except for periods of CEMs calibration checks, zero and span adjustment and preventative maintenance. Notwithstanding such exceptions, in all cases valid CEMs data shall be obtained for at least seventy-five percent (75%) of the hours per day, seventy-five (75%) of the days of the month and ninety percent (90%) of the hours per quarter that the stationary source is operating.
- G. Emissions testing shall comply with the following requirements:
1. Emissions testing shall be conducted upon start-up and at least once every five (5) years thereafter to demonstrate compliance with the applicable NO<sub>x</sub> emission limitation.
  2. An emissions testing protocol shall be submitted to the Office of Air Resources for review a minimum of sixty days (60) prior to the performance of any tests. The Office of Air Resources shall be notified at least sixty (60) days prior to any emissions test.
  3. All test procedures used for emissions testing shall be in accordance with the methods set forth in 40 C.F.R. § 60 Appendix A, incorporated in § 27.4(A) of this Part, or another method approved by the Director and the EPA.
  4. The owner or operator of the stationary source shall install any and all test ports or platforms necessary to conduct the required emissions testing, provide safe access to any platforms and provide the necessary utilities for sampling and testing equipment.
  5. All testing shall be conducted under operating conditions deemed acceptable and representative for the purpose of assessing compliance with the applicable emission limitation.
  6. All emissions testing must be observed by a representative of the Office of Air Resources to be considered acceptable, unless the Office of Air

Resources provides prior written authorization to the owner or operator to conduct the testing without an observer present.

7. A final report of the results of emissions testing shall be submitted to the Office of Air Resources no later than sixty (60) days following completion of the testing.

## **27.10 Recordkeeping and Reporting Requirements**

- A. A record of all measurements, performance evaluations, calibration checks, and maintenance or adjustments for each continuous emission monitor shall be maintained.
- B. A written report of excess emissions, as measured by a continuous emission monitor shall be submitted to the Office of Air Resources for every calendar quarter. All quarterly reports shall be received no later than thirty (30) days following the end of each calendar quarter and shall include the following information:
  1. Date and time of commencement and completion of each period of excess emissions and the magnitude of the excess emissions.
  2. Identification of the suspected reason for the excess emissions and any corrective action taken.
  3. The date and time period any continuous emission monitor was inoperative, except for zero and span checks and the nature of system repairs or adjustments.
  4. The date and time periods of any missing data or periods where compliance could not be determined and the steps taken to cure the cause of the missing data.
  5. In the event none of the above items have occurred such information shall be stated in the report.
- C. The fuel used in each combustion unit subject to RACT must be measured and recorded monthly.
  1. As an alternative to measuring and recording fuel used in each combustion unit, a stationary source may petition the Director to use one of the following methods to demonstrate compliance with RACT:
    - a. The fuel used in multiple combustion units which have equivalent NO<sub>x</sub> emission rates may be measured and recorded monthly using a single metering device. If more than one type of fuel is used in the



multiple combustion units, the amount of each type fuel must be measured and recorded monthly;

- b. The fuel used in multiple combustion units which have different NOx emission rates may be measured and recorded monthly using a single metering device. If more than one type of fuel is used in the multiple combustion units, the amount of each type fuel must be measured and recorded monthly. The total NOx emissions for these units will be determined using the emission rate of the highest NOx emitting combustion unit.

D. Stationary sources subject to § 27.8.2(A)(2) of this Part shall obtain a certification from the fuel supplier for each shipment of distillate oil that includes the following information:

1. The name of the oil supplier, and;
2. That the oil complies with the specification for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-18 "Standard Specification for Fuel Oils."

E. All stationary sources combusting residual fuel oil shall obtain a certification from the fuel supplier for each shipment of residual oil that includes the following information:

1. The name of the oil supplier;
2. The nitrogen content of the oil from which the shipment came or of the shipment itself;
3. The method used to determine the nitrogen content of the oil. ASTM test methods D3228-08, D4629-17, incorporated above in § 27.4(B) of this Part, or any other method approved by the Director and the EPA may be used; and,
4. The location of the oil when the sample was drawn for analysis to determine the nitrogen content of the oil, specifically including whether the oil was sampled as delivered to the stationary source or whether the sample was drawn from oil in storage at the oil supplier's or oil refiner's facility or another location.

F. As an alternative to the fuel supplier certification required in § 27.10(E) of this Part, a stationary source may elect to sample the fuel oil prior to combustion. Sampling and analysis shall be conducted after each new shipment of residual oil is received. Samples shall be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted. The residual oil must be

sampled and analyzed according to ASTM methods which have the prior approval of or are required by the Director.

- G. Copies of all fuel supplier certifications or fuel oil analyses shall be maintained at the facility and be made accessible for review by the Director or the designated personnel of the Director and EPA. These records shall include a certified statement, signed by the owner or operator of the stationary source, that the records represent all of the fuel combusted during the quarter.
- H. All stationary sources subject to § 27.8.2(C) of this Part shall maintain records verifying that a tune-up has been performed in accordance with the procedure described in § 27.11 of this Part that includes the following information:
  - 1. The date the tune-up was performed;
  - 2. The name of the person who performed the tune-up; and,
  - 3. The final excess oxygen setting.
  - 4. The O<sub>2</sub>/CO curve or O<sub>2</sub>/smoke curve that has been developed as part of this procedure.
- I. Stationary sources subject to an emissions cap pursuant to the provisions of § 27.6(B) of this Part shall:
  - 1. Measure and record monthly the fuel used in each combustion unit with a heat input capacity greater than or equal to one million Btu per hour;
  - 2. On a monthly basis, no later than fifteen (15) days after the first of each month, determine the fuel usage and quantity of NO<sub>x</sub> emitted for the previous twelve-month period for each combustion unit or for the stationary source;
  - 3. Notify the Office of Air Resources, in writing within thirty (30) days of the end of the month, whenever NO<sub>x</sub> emissions exceed the emissions cap; or,
  - 4. As an alternative to measuring and recording fuel used in each combustion unit as required in § 27.10(l)(1) of this Part, a stationary source may petition the Director to use one of the following methods to demonstrate compliance with an emissions cap:
    - a. The fuel used in multiple combustion units which have equivalent NO<sub>x</sub> emission rates may be measured and recorded monthly using a single metering device. If more than one type of fuel is used in the multiple combustion units, the amount of each type fuel must be measured and recorded monthly;

- b. The fuel used in multiple combustion units which have different NOx emission rates may be measured and recorded monthly using a single metering device. If more than one type of fuel is used in the multiple combustion units, the amount of each type fuel must be measured and recorded monthly. The total NOx emissions for these units will be determined using the emission rate of the highest NOx emitting unit.
- J. All stationary sources with emergency standby internal combustion engines satisfying the provisions of § 27.6(C) of this Part shall:
  - 1. Install and maintain a non-resettable elapsed time meter to indicate, in cumulative hours, the elapsed engine operating time;
  - 2. On a monthly basis, no later than fifteen (15) days after the first of each month, determine and record the hours of operation for each engine for the previous twelve-month period; and
  - 3. Notify the Office of Air Resources, in writing, whenever the hours of operation in any twelve-month period exceeds five hundred (500) hours.
- K. All records required in this Subsection shall be maintained at the stationary source for a minimum of five (5) years and shall be made available to representatives of the Department or EPA upon request.

### **27.11 Equipment Tuning Procedure**

- A. This tuning procedure, based on a tune-up procedure developed by KVB Inc. for the EPA, in §§ 27.11(A)(1) through (10) of this Part, shall be followed
  - 1. Operate the unit at the firing rate most typical of normal operation. If the unit experiences significant load variations during normal operation, operate it at its average firing rate.
  - 2. At this firing rate, record stack gas temperature, oxygen concentration and CO concentration (for gaseous fuels) or smoke-spot number (for liquid fuels) and observe flame conditions after the unit stabilizes at the firing rate selected. If the excess oxygen in the stack gas is at the lower end of the range of typical minimum values, and if the CO emissions are low and there is no smoke, the unit is probably operating at near optimum efficiency - at this particular firing rate. However, complete the remaining portion of this procedure to determine whether still lower oxygen levels are practical.
    - a. The smoke-spot number can be determined with ASTM Test Method D-2156-09, incorporated in § 27.4(B) of this Part, or with the Bacharach method. ASTM Test Method D-2156-09 is included

in a tune-up kit that can be purchased from the Bacharach Company.

- b. Typical minimum oxygen levels for boilers at high firing rates are:
  - (1) For natural gas: 0.5% - 3.0%
  - (2) For liquid fuels: 2.0% - 4.0%
3. Increase combustion air flow to the furnace until stack gas oxygen levels increase by one to two percent over the value measured in § 27.11(B)(2) of this Part. As in § 27.11(B)(2) of this Part record the stack gas temperature, CO concentration (for gaseous fuels) or smoke-spot number (for liquid fuels) and observe flame conditions for these higher oxygen levels after boiler operation stabilizes.
4. Decrease combustion air flow until the stack gas oxygen concentration is at the level measured in § 27.11(B)(2) of this Part. From this level gradually reduce the combustion air flow in small increments. After each increment, record the stack gas temperature, oxygen concentration, CO concentration (for gaseous fuels) and smoke-spot number (for liquid fuels). Also, observe the flame and record any changes in its condition.
5. Continue to reduce combustion air flow stepwise until one of these limits is reached:
  - a. Unacceptable flame conditions - such as flame impingement on furnace walls or burner parts, excessive flame carryover or flame instability.
  - b. Stack gas CO concentration greater than 400 ppm.
  - c. Smoking at the stack.
  - d. Equipment related limitations - such as low windbox/furnace pressure differential, built in air flow limits, etc.
6. Develop an O<sub>2</sub>/CO curve (for gaseous fuels) or O<sub>2</sub>/smoke curve (for liquid fuels) similar to those in Figures 1 and 2 using the excess oxygen and CO or smoke-spot number data obtained at each combustion air flow setting.
7. From the curves prepared in § 27.11(B)(6) of this Part, find the stack gas oxygen levels where the CO emissions or smoke-spot number equal the following values:

Fuel	Measurement	Value
------	-------------	-------

Gaseous	CO emissions	400 ppm
#1 & #2 oils	Smoke-spot number	Number 1
#4 oil	Smoke-spot number	Number 2
# 5 oil	Smoke-spot number	Number 3
# 6 oil	Smoke-spot number	Number 4

The above conditions are referred to as CO or smoke threshold, or as the minimum excess oxygen level.

Compare this minimum value of excess oxygen to the expected value provided by the combustion unit manufacturer. If the minimum value found is substantially higher than the value provided by the combustion unit manufacturer, burner adjustments shall be made to improve fuel and air mixing, thereby allowing operation with less air.

8. Add 0.5 to 2.0 percent to the minimum excess oxygen level found in § 27.11(B)(7) of this Part and reset burner controls to operate automatically at this higher stack gas oxygen level. This margin above the level accounts for fuel variations, variations in atmospheric conditions, load changes and non-repeatability or play in automatic controls.
9. If the load of the combustion unit varies significantly during normal operation, repeat §§ 27.11(B)(1) through (8) of this Part for firing rates that represent the upper and lower limits of the range of the load. Because control adjustments at one firing rate may affect conditions at other firing rates, it may not be possible to establish the optimum excess oxygen level at all firing rates. If this is the case, choose the burner control settings that give the best performance over the range of firing rates. If one firing rate predominates, settings should optimize conditions at that rate.
10. Verify that the new settings can accommodate the sudden changes that may occur in daily operation without adverse effects. Do this by increasing and decreasing load rapidly while observing the flame and stack. If any of the conditions in § 27.11(B)(5) of this Part result, reset the combustion controls to provide a slightly higher level of excess oxygen at the affect firing rates. Next, verify these new settings in a similar fashion. Then make sure that the final control settings are recorded at steady state operating conditions for future reference.

- B. Nothing in this Equipment Tuning Procedure shall be construed to require any act or omission that would result in unsafe conditions or would be in violation of any regulation or requirement established by Factory Mutual, National Fire Prevention Association, the Rhode Island Department of Labor (Division of Occupational Safety), the Federal Occupational Safety and Health Administration or other relevant regulations or requirements.

**250-RICR-120-05-35**

## **TITLE 250 – DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

### **CHAPTER 120 – AIR RESOURCES**

#### **SUBCHAPTER 05 – AIR POLLUTION CONTROL**

PART 35 – Control of Volatile Organic Compounds and Volatile Hazardous Air Pollutants from Wood Product Manufacturing Operations

### **35.1 Purpose and Authority**

#### **35.1.1 Purpose**

The purpose of this regulation is to limit emissions of volatile organic compounds and hazardous air pollutants from wood products manufacturing operations.

#### **35.1.2 Authority**

These regulations are authorized pursuant to R.I. Gen. Laws § 42-17.1-2(19) and R.I. Gen. Laws Chapter 23-23, and have been promulgated pursuant to the procedures set forth in the Rhode Island Administrative Procedures Act, R.I. Gen. Laws Chapter 42-35.

### **35.2 Application**

The terms and provisions of this regulation shall be liberally construed to permit the Department to effectuate the purposes of state law, goals and policies.

### **35.3 Severability**

If any provision of this regulation or the application thereof to any person or circumstance, is held invalid by a court of competent jurisdiction, the validity of the remainder of the regulation shall not be affected thereby.

### **35.4 Incorporated Materials**

- A. These regulations hereby adopt and incorporate 40 C.F.R. § 51 Method 204, 40 C.F.R. § 63 Appendix A Method 311; 40 C.F.R. § 60 Appendix A-1 Methods 1, 1A, 2, 2A, 2C, and 2D; 40 C.F.R. § 60 Appendix A-2 Method 3; 40 C.F.R. § 60 Appendix A-3 Method 4; 40 C.F.R. § 60 Appendix A-6 Method 18; 40 C.F.R. § 60 Appendix A-7 Methods 24, 25, and 25A (2018) by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.

- B. These regulations hereby adopt and incorporate the Environmental Protection Agency's "Standard Procedures for Collection of Coating and Ink Samples for VOC Content Analysis by Reference Method 24 and Reference Method 24A" EPA-340/1-91-010 (1991) by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.

## 35.5 Definitions

- A. Unless otherwise expressly defined in this section, the terms used in this regulation shall be defined by reference to [Part 0](#) of this Subchapter (General Definitions). As used in this regulation, the following terms shall, where the context permits, be construed as follows:
1. "Adhesive" means a chemical substance that is applied for the purpose of bonding two (2) surfaces together other than by mechanical means.
  2. "Alternative method" means a method of sampling and analyzing for an air pollutant that is not a reference or equivalent EPA sampling method but that has been demonstrated to the EPA's satisfaction to, in specific cases, produce results adequate for a determination of compliance.
  3. "As applied" means the VOC, VHAP and solids content of the coating material as it is used for coating the substrate, including the contribution of thinners.
  4. "Basecoat" means a coat of colored material, usually opaque, that is applied before graining inks, glazing coats, or other opaque finishing materials and is usually top coated for protection.
  5. "Capture device" means a hood, enclosed room, floor sweep, or other means of collecting solvent emissions or other pollutants into a duct so that pollutants can be directed to a pollution control device such as an incinerator or a carbon adsorber.
  6. "Capture efficiency" means the fraction of all organic vapors generated by a process that are directed to a control device.
  7. "Certified product data sheet" or "CPDS" means documentation furnished by a coating supplier or an outside laboratory that provides the VHAP content, VOC content, solids content, and density of a finishing material, strippable booth coating, adhesive, or solvent, measured using 40 C.F.R. § 60, Appendix A-7 Method 24 and 40 C.F.R. § 63 Method 311, or an equivalent or alternative method (or formulation data if the coating meets the criteria specified in § 35.12.1(B) of this Part. The purpose of the CPDS is to assist the facility in demonstrating compliance with the emission limitations presented in §§ 35.7, 35.8, and 35.9 of this Part. Therefore, the



VOC and VHAP content should represent the maximum VOC and VHAP emission potential of the finishing material, strippable booth coating, or solvent.

8. "Cleaning operations" means operations in which organic solvent is used to remove coating materials from equipment used in wood products manufacturing operations.
9. "Coating" means a protective, decorative, or functional material applied in a thin layer to a surface. Such materials include, but are not limited to, paints, topcoats, varnishes, sealers, stains, washcoats, basecoats, adhesives, inks, enamels, and temporary protective coatings.
10. "Coating solids" or "Solids" means the part of a coating that remains after the coating is dried or cured; solids content is determined using data from 40 C.F.R. § 60 Appendix A-7 Method 24, incorporated in § 35.4(A) of this Part.
11. "Compliant coating" means a finishing material, adhesive, or strippable booth coating that meets applicable emission limitations specified in §§ 35.7 and 35.8 of this Part.
12. "Contact adhesive" means an adhesive that is applied to two (2) substrates, dried, and mated under only enough pressure to result in good contact. The bond is immediate and sufficiently strong to hold pieces together without further clamping, pressure, or airing.
13. "Continuous coater" means a finishing system that continuously applies finishing materials onto wood parts moving along a conveyor system. Finishing materials that are not transferred to the part are recycled to the finishing material reservoir. Several types of application methods can be used with a continuous coater including spraying, curtain coating, roll coating, dip coating, and flow coating.
14. "Continuous compliance" means that the facility is meeting the applicable emission limitations and other applicable requirements of this regulation at all times and is fulfilling all monitoring and recordkeeping provisions of the regulation in order to demonstrate compliance.
15. "Control device" means any equipment that reduces the quantity of a pollutant that is emitted to the air. The device may destroy or secure the pollutant for subsequent recovery. Control devices include, but are not limited to, incinerators, carbon adsorbers, and condensers.
16. "Control device efficiency" means the ratio of the amount of pollutant released by a control device to the amount of pollutant introduced to the control device, expressed as a fraction.

17. "Control system" means the combination of capture and control devices used to reduce emissions to the atmosphere.
18. "Conventional air spray" means a spray coating method in which the coating is atomized by mixing it with compressed air at an air pressure greater than ten (10) pounds per square inch (gauge) at the point of atomization. Airless, air assisted airless, and electrostatic spray technologies are not considered conventional air spray methods.
19. "Day" means a period of twenty-four (24) consecutive hours beginning at midnight local time, or beginning at a time consistent with a facility's operating schedule.
20. "Disposed offsite" means sending used organic solvent or coatings outside of the facility boundaries for disposal.
21. "Emission" means the release or discharge, directly or indirectly, of one (1) or more air pollutants into ambient air.
22. "Enamel" means a coat of colored, usually opaque material that is applied as a protective topcoat over a basecoat, primer, or previously applied enamel coats. In some cases, another finishing material may be applied as a topcoat over the enamel.
23. "Equipment leak" means emissions of VOC or VHAP from pumps, valves, flanges, or other equipment used to transfer or apply finishing materials, adhesives, or organic solvents.
24. "Equivalent method" means a method of sampling and analyzing for an air pollutant that EPA has determined to have a consistent and quantitatively known relationship to the reference method, under specific conditions.
25. "Filler" means a finishing material which is applied to a wood surface primarily to build up, or fill the voids and imperfections in, the wood surface to be coated. Edge filler is included in this definition.
26. "Finishing application station" means the part of a finishing operation where the finishing material is applied, e.g., a spray booth.
27. "Finishing material" means a coating other than an adhesive. For the wood products manufacturing industry, such materials include, but are not limited to, basecoats, stains, washcoats, enamels, sealers, and topcoats.
28. "Finishing operation" means those activities in which a finishing material is applied to a substrate and is subsequently air-dried, cured in an oven, or cured by radiation.

29. "Foam adhesive" means a contact adhesive used for gluing foam to fabric, foam to foam, and fabric to wood.
30. "Gluing operation" means those operations in which adhesives are used to join components, for example to apply a laminate to a wood substrate or foam to fabric.
31. "High-solids stains" means stains containing more than one (1) pound of solids per gallon and includes wiping stains, glazes, and opaque stains.
32. "Incinerator" means an enclosed combustion device that thermally oxidizes volatile organic compounds to CO and CO<sub>2</sub>. This term does not include devices that burn municipal or hazardous waste material.
33. "Ink" means a fluid that contains dyes and/or colorants and is used to make markings, but not to protect surfaces.
34. "Low-solids stains" means stains containing one (1) pound of solids per gallon, or less.
35. "Major source of hazardous air pollutants" means a facility that emits or has the potential to emit, in the aggregate, ten (10) tons per year (tpy) or more of any Hazardous Air Pollutant (HAP), twenty-five (25) tpy or more of any combination of HAPs, or such lesser quantity as the EPA may establish by rule.
36. "Malfunction" means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.
37. "Multi-colored coating" means a coating which exhibits more than one (1) color when applied, and which is packaged in a single container and applied as a single coat.
38. "Nonpermanent final finish" means a material such as a wax, polish, nonoxidizing oil, or similar substance that must be periodically reapplied to a surface over its lifetime to maintain or restore the reapplied material's intended effect.
39. "Operating day" means a day, or any part of a day, in which a facility is engaged in manufacturing.
40. "Operating parameter value" means a minimum or maximum value established for a control device or process parameter that, if achieved by itself or in combination with one (1) or more other operating parameter

values, determines that an owner or operator has complied with an applicable emission limitation.

41. "Organic solvent" means a liquid containing VOC that is used for dissolving or dispersing constituents in a coating, adjusting the viscosity of a coating, cleaning, or washoff. When used in a coating, the organic solvent evaporates during drying and does not become a part of the dried film.
42. "Overall control efficiency" means the efficiency of a control system, calculated as the product of the capture and control device efficiencies, expressed as a percentage.
43. "Permanent total enclosure" means a permanently installed enclosure that completely surrounds a source of emissions such that all emissions are captured and contained for discharge through a control device. The enclosure must meet the requirements in 40 C.F.R. § 51 Appendix M Method 204, incorporated in § 35.4(A) of this Part.
44. "Pigmented coating" means an opaque coating which contains binders and colored pigments and which is formulated to hide the wood surface, either as an undercoat or topcoat.
45. "Recycled onsite" means the reuse of an organic solvent at the facility in a process other than cleaning or washoff.
46. "Sealer" means a finishing material used to seal the pores or grains of a wood substrate before additional coats of finishing material are applied. Washcoats, which are used in some finishing systems to optimize aesthetics, are not sealers.
47. "Shutdown" means the cessation of operation of wood products manufacturing operations for any purpose.
48. "Solvent" means a liquid used in a coating for dissolving or dispersing constituents in a coating, adjusting the viscosity of a coating, cleaning, or washoff. When used in a coating, it evaporates during drying and does not become a part of the dried film.
49. "Stain" means any color coat having a solids content by weight of not more than eight percent (8%) that is applied in single or multiple coats directly to the substrate. Stains include, but are not limited to, nongrain raising stains, equalizer stains, prestains, sap stains, body stains, no-wipe stains, penetrating stains, and toners.
50. "Startup" means the setting in operation of wood products manufacturing operations for any purpose.

51. "Strippable booth coating" means a coating that:
  - a. Is applied to a booth wall to provide a protective film to receive overspray during finishing operations;
  - b. Is subsequently peeled off and disposed; and
  - c. By achieving §§ 35.5(A)(51)(a) and (b) of this Part, reduces or eliminates the need to use organic solvents to clean booth walls.
52. "Substrate" means the surface onto which coatings are applied or into which coatings are impregnated.
53. "Thinner" means a volatile liquid that is used to dilute coatings to reduce viscosity, color strength, and solids, or to modify drying conditions.
54. "Toner" means a stain which contains binders and dyes or pigments to add tint to a coated surface or to even the color of an initial application of stain.
55. "Topcoat" means the last film-building finishing material applied in a finishing system.
56. "Touch-up and repair" means the application of finishing materials to cover minor finishing imperfections.
57. "Volatile hazardous air pollutant" and "VHAP" means any of the substances listed in § 35.13 of this Part.
58. "Volatile organic compound" or "VOC" means volatile organic compound and halogenated organic compound or "VOC and HOC."
59. "Washcoat" means a transparent special purpose coating having a solids content by weight of twelve percent (12%) or less. Washcoats are applied over initial stains to protect and control uniformity of color, to stiffen the wood fibers, to prepare the wood surface for sanding, and to partially seal the wood from subsequent staining operations.
60. "Washoff operations" means those operations in which organic solvent is used to remove coating from a substrate.
61. "Wood products facility" means a facility which is engaged in coating the surface of products manufactured of wood or wood products, including, but not limited to, particle board, reed, rattan and wicker.
  - a. Wood product coating does not include coating of flat wood panels, as defined in [Part 19](#) of this Subchapter (Control of Volatile Organic Compounds from Surface Coating Operations).

62. "Wood products manufacturing operations" means the finishing, gluing, cleaning and washoff operations conducted at a wood products facility.

## **35.6 Applicability**

- A. The provisions of this regulation apply to any wood products facility which has the potential to emit twenty-five (25) tons per year or more of volatile organic compounds (VOC) from wood products manufacturing operations or which is a major source of hazardous air pollutants (HAP) from wood products manufacturing operations.
- B. The owner or operator of a wood products facility which has emissions below the applicability thresholds specified in § 35.6(A) of this Part but above fifteen (15) pounds of VOC in any day shall comply with the recordkeeping and reporting requirements in §§ 35.11(A)(1) through (4) of this Part, but the facility shall not be subject to any other provisions of this regulation. If the facility becomes subject to the regulation at a future date due to an increase in emissions of VOC or VHAP, the facility shall be subject to applicable requirements in this regulation on and after the date that the applicability thresholds are reached or the date that the applicable requirement becomes effective, whichever is later.
- C. The owner or operator of a facility which is a major source of hazardous air pollutants (HAP) from wood products manufacturing operations but which has not emitted more than ten (10) tons of any one HAP or more than twenty-five (25) tons of any combination of HAP from wood products manufacturing operations in any 12-month period, may apply to the Director for an exemption from the VHAP emissions limitations in §§ 35.7.2, 35.7.3, 35.8(B), and 35.8(C) of this Part. Exemption will be given in the form of an enforceable document, and will include the following conditions:
1. Average monthly emissions from the facility in any consecutive 12-month period shall not exceed 1,666 pounds of any one HAP or 4,166 pounds of any combination of HAP; and
  2. The following records shall be maintained at the facility for a period of five (5) years and made available to the Department or the EPA upon request:
    - a. The name, identification number, and amount of each finishing, gluing and washoff material used each month at the facility; and
    - b. Certified Product Data Sheets showing the VOC and VHAP content of each finishing, gluing, and washoff material used at the facility; and
    - c. The type and amount of solvent used as thinners and in cleaning operations each month at the facility;

- d. The average monthly emissions of each HAP from the facility, calculated monthly for the previous 12-month period.
3. If the limit in § 35.6(C)(1) of this Part is exceeded, applicable VHAP emission limitations specified in §§ 35.7 and 35.8 of this Part shall immediately apply.

## 35.7 Emission Limitations for Finishing Operations

### 35.7.1 VOC Emission Limitations for Finishing Operations

- A. The owner or operator of a facility subject to this regulation which has the potential to emit greater than or equal to twenty-five (25) tons per year of volatile organic compounds (VOC) shall limit VOC emissions from wood products finishing operations by:
  1. Using finishing materials which comply with the emissions limitations listed in § 35.7.1(B)(1) of this Part for coatings used prior to January 1, 2020 or § 35.7.1(C)(1) of this Part for coatings used after January 1, 2020; or
  2. Using a control system that achieves the emissions limitations in pounds of VOC per pound of solids listed in § 35.7.1(B)(1) of this Part for coatings used prior to January 1, 2020 or § 35.7.1(C)(1) of this Part for coatings used after January 1, 2020; or
  3. Using finishing materials with a weighted average VOC content, within a particular category of coatings, as identified in § 35.7.1(B)(1) of this Part for coatings used prior to January 1, 2020 or § 35.7.1(C)(1) of this Part, for coatings used after January 1, 2020, which conforms with the provisions specified in § 35.10.2(A) and (B) of this Part; or
  4. Using a combination of the methods presented in §§ 35.7.1(A)(1) through (3) of this Part which is approved by the Department.
- B. Prior to January 1, 2020, the owner or operator of a wood products coating facility subject to this regulation shall meet the emission limitations listed in § 35.7.1 (B)(1) of this Part using one of more of the methods in § 35.7.1(A)(1) through (4) of this Part.

#### 1. Emissions Limitations for Coatings used Prior to January 1, 2020

Coating Category	lbs VOC/ gal coating minus water and exempt compounds	lbs VOC/lb solids
clear topcoats containing HOC	4.6	1.2

clear topcoats not containing HOC	5.7	2.5
fillers	4.2	1.0
high-solids stains	5.8	2.7
low-solids stains, toners and washcoats containing HOC	4.0	0.9
low-solids stains, toners and washcoats not containing HOC	6.7	7.5
inks	4.2	1.0
multi-colored coatings	5.7	2.5
pigmented coatings	5.0	1.6
sealers containing HOC	4.6	1.2
sealers not containing HOC	5.7	2.5

2. In addition to complying with the limitations in § 35.7.1(B)(1) of this Part, on and after March 7, 1998, the owner or operator of a facility subject to this regulation which has the potential to emit greater than or equal to twenty-five (25) tons per year of VOC shall:
- a. Use topcoats containing no more than 1.8 lbs VOC/lb solids, as applied, and sealers containing no more than 1.9 lbs VOC/lb solids, as applied; or
  - b. Use waterborne topcoats with a VOC content no greater than 0.8 lb VOC/lb solids, as applied; or
  - c. Use a control system that achieves equivalent reductions in VOC emissions from topcoats and sealers.
- C. Effective January 1, 2020, the owner or operator of a wood products coating facility subject to this regulation shall comply with the emissions limitations in § 35.7.1(C)(1) of this Part using one or more of the methods in § 35.7.1(A)(1) through (4) of this Part.



1. Emissions Limitations for Coatings used after January 1, 2020

Coating operations	lbs VOC/lb of solid as applied
Finishing Operations	
Topcoat	0.8
Finishing system of topcoat and sealer	
Topcoats	1.8
Sealers	1.9
Acid-cured alkyd amino vinyl sealers and acid-cured alkyd amino conversion varnish topcoat system, exclusively	
sealer	2.3
topcoat	2.0
Non-acid-cured alkyd amino vinyl sealers and acid-cured alkyd amino conversion varnish topcoat system, exclusively	
sealers	1.9
topcoat	2.0
Acid-cured alkyd amino vinyl sealers and non-acid-cured alkyd amino conversion varnish topcoat system, exclusively	
sealer	2.3
topcoat	1.8

**35.7.2 VHAP Emission Limitations for Finishing Operations at Existing Facilities**

- A. The owner or operator of a facility subject to this regulation which is a major source of HAP from wood products manufacturing operations and which began operations before December 6, 1994, shall limit VHAP emissions from wood products finishing operations by:
1. Using stains, washcoats, sealers, topcoats, basecoats, and enamels with VHAP contents no higher than 1.0 lb VHAP/lb solids, as applied; thinners for stains, sealers, and topcoats that contain no more than ten percent (10%) VHAP by weight; thinners for washcoats, basecoats and enamels that contain no more than three percent (3%) VHAP by weight; or
  2. Using finishing materials with a weighted average VHAP content of no greater than 1.0 lb VHAP/lb solids, as applied, calculated using the procedures in § 35.10.2(C) of this Part, and thinners with VHAP contents as specified in § 35.7.2(A)(1) of this Part; or
  3. Using a control system that achieves a reduction in emissions equivalent to that which would be achieved by complying with the requirements of §§ 35.7.2(A)(1) or (2) of this Part, calculated according to the procedures in § 35.10.3(C) of this Part; or
  4. Using a combination of the methods presented §§ 35.7.2(A)(1) and (3) of this Part which is approved by the Department.
- B. The formaldehyde content of a finishing material shall be calculated as the amount of free formaldehyde present in the finishing material when it is applied.
1. Total formaldehyde use in coatings and adhesives shall be no more than four hundred (400) pounds per rolling twelve (12) month period; or
  2. Only low-formaldehyde (less than one percent (1%) formaldehyde by weight) coatings and adhesives shall be used in any wood product manufacturing operations.
- C. The styrene content of a finishing material shall be based on an estimate of unreacted styrene, which shall be calculated by multiplying the amount of styrene monomer in the finishing material when it is applied by a factor of 0.16.

### **35.7.3 VHAP Emission Limitations for Finishing Operations at New Facilities**

- A. The owner or operator of a facility subject to this regulation which is a major source of HAP from wood products manufacturing operations and began operation on or after December 6, 1994, shall limit VHAP emissions from wood products finishing operations by:
1. Using stains with VHAP contents no greater than 1.0 lb VHAP/lb solids, as applied; washcoats, sealers, topcoats, basecoats, and enamels with VHAP contents no greater than 0.8 lb VHAP/lb solids, as applied; thinners

for stains, sealers, and topcoats that contain no more than ten percent (10%) VHAP by weight; and thinners for washcoats, basecoats and enamels that contain no more than three percent (3%) VHAP by weight; or

2. Using finishing materials with a weighted average VHAP content of no greater than 0.8 lb VHAP/lb solids, as applied, calculated using the procedures in § 35.10.2(C) of this Part, and thinners with VHAP contents as specified in § 35.7.3(A)(1) of this Part; or
  3. Using a control system that achieves a reduction in emissions equivalent to that which would be achieved by complying with the requirements of §§ 35.7.3(A)(1) or (2) of this Part, calculated according to the procedures in provisions in § 35.10.3(C) of this Part; or
  4. Using a combination of the methods presented §§ 35.7.3(A)(1) and (3) of this Part which is approved by the Department.
- B. The formaldehyde content of a finishing material shall be calculated as the amount of free formaldehyde present in the finishing material when it is applied.
1. Total formaldehyde use in coatings and adhesives shall be no more than four hundred (400) pounds per rolling twelve (12) month period; or
  2. Only low-formaldehyde (less than one percent (1%) formaldehyde by weight) coatings and adhesives shall be used in any wood product manufacturing operations.
- C. The styrene content of a finishing material shall be based on an estimate of unreacted styrene, which shall be calculated by multiplying the amount of styrene monomer in the finishing material when it is applied by a factor of 0.16.

## **35.8 Emission Limitations for Cleaning and Gluing Operations**

- A. VOC Emission Limitations for Cleaning Operations
1. Any strippable booth coating used at a facility subject to this regulation must contain no more than 0.8 lb VOC/lb solids, as applied.
- B. VHAP Emission Limitations for Existing Gluing Operations
1. The owner or operator of a facility subject to this regulation which is a major source of HAP from wood products manufacturing operations and which began operation before December 6, 1994, shall limit VHAP emissions from contact adhesives used in gluing operations as follows:
    - a. For foam adhesives used in products that meet the upholstered seating flammability requirements of California Technical Bulletin 116, 117, or 133, the Business and Institutional Furniture

Manufacturers Association's (BIFMA's) X5.7, UFAC flammability testing, or any similar requirements from local, State, or Federal fire regulatory agencies, the VHAP content of the adhesive shall not exceed 1.8 lb VHAP/lb solids, as applied;

- b. For all other contact adhesives, including foam adhesives used in products that do not meet the standards presented in § 35.8(B)(1)(a) of this Part, the VHAP content of the adhesive shall not exceed 1.0 lb VHAP/lb solids, as applied; or
- c. By using a control system that will achieve a reduction in VHAP emissions equivalent to that which would be achieved by complying with the requirements of § 35.8(B)(1)(b) of this Part, as calculated using the procedures in § 35.10.3(D) of this Part.

C. VHAP Emission Limitations for New Gluing Operations

- 1. The owner or operator of a facility subject to this regulation which is a major source of HAP from wood products manufacturing operations and which began operation on or after December 6, 1994, shall not use contact adhesives which have VHAP contents higher than 0.2 lb VHAP/lb solids, as applied or shall use a control system that achieves an equivalent reduction in emissions of VHAP, as calculated using the procedures in § 35.10.3(D) of this Part.

## **35.9 Work Practice Standards**

### **35.9.1 Work Practice Implementation Plan**

- A. The owner or operator of a facility subject to this regulation shall prepare and maintain a written work practice implementation plan that defines work practices for each wood products manufacturing operation and addresses each of the topics specified in §§ 35.9.2 through 35.9.6 of this Part.
- B. The owner or operator of the facility shall comply with each provision of the work practice implementation plan.
- C. The work practice implementation plan shall be available for inspection by the EPA or the Department upon request and shall be modified by the facility if found to be inadequate.

### **35.9.2 Operator Training Course**

- A. Each owner or operator of a facility subject to this regulation shall train all new and existing personnel, including contract personnel, who are involved in finishing, gluing, cleaning, or washoff operations, use of manufacturing equipment, or implementation of the requirements of this Part.

- B. All personnel shall be trained upon hiring. All personnel shall be given refresher training annually.
- C. Initial and refresher trainings shall include, at a minimum, the following topics:
  - 1. Appropriate application techniques;
  - 2. Appropriate cleaning and washoff procedures;
  - 3. Appropriate equipment setup and adjustment to minimize finishing material usage and overspray; and
  - 4. Appropriate management of cleanup wastes.
- D. The facility shall maintain records of the training program. Records shall include, at a minimum, the following:
  - 1. A list of all current personnel by name and job description who are required to be trained and a record of the date that each employee was trained;
  - 2. An outline of the subjects covered in the initial and refresher training for each position, or group of personnel;
  - 3. Lesson plans for courses to be given at the initial and the annual refresher training that include, at a minimum, the topics specified in § 35.9.2(C) of this Part; and
  - 4. A description of the methods to be used to demonstrate successful completion of initial and refresher training.

### **35.9.3 Equipment Operation, Maintenance, Inspection and Repair**

- A. Equipment Leak Inspection and Repair
  - 1. All equipment used to transfer or apply finishing materials, adhesives, or organic solvents shall be visually inspected for leaks at least once per month.
  - 2. A first attempt at repair shall be made no later than three (3) calendar days after a leak is detected and final repairs shall be made within ten (10) calendar days, unless the leaking equipment is to be replaced by a new purchase, in which case repairs shall be completed within three (3) months.
  - 3. The owner or operator of a source subject to this regulation shall prepare and maintain a written leak inspection and maintenance plan that includes:

- a. A schedule for conducting visual inspections required in § 35.9.3(A) of this Part; and
- b. A log documenting the date and results of each inspection and any repairs that are made.

B. Operation and Maintenance Requirements

1. At all times, including periods of startup, shutdown, and malfunction, owners or operators shall operate and maintain any equipment associated with wood products manufacturing operations, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.
2. Malfunctions shall be corrected as soon as practicable after their occurrence in accordance with the startup, shutdown, and malfunction plan required in § 35.9.3(B)(4) of this Part.
3. The Department will determine whether acceptable operation and maintenance procedures are being used, based on information which may include, but is not limited to, monitoring results, review of operation and maintenance procedures (including the startup, shutdown, and malfunction plan required in § 35.9.3(B)(4) of this Part), review of operation and maintenance records, and inspection of the facility.
4. The owner or operator of a facility subject to this regulation shall develop and implement a written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining equipment associated with wood products manufacturing operations during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with this regulation. The facility's standard operating procedures (SOP) manual, an Occupational Safety and Health Administration (OSHA) or another plan can be used to fulfill this requirement, provided the plan meets all the requirements of this paragraph. Startup, shutdown, and malfunction plans shall be maintained at the facility and made available to the Department or the EPA for review upon request and shall be revised if determined to be unacceptable.
5. During periods of startup, shutdown, and malfunction, the owner or operator of a facility subject to this regulation shall operate and maintain equipment associated with wood products manufacturing operations (including associated air pollution control equipment) in accordance with the procedures specified in the startup, shutdown, and malfunction plan developed according to the provisions of § 35.9.3(B)(4) of this Part.
6. The owner or operator of a facility subject to this regulation shall keep records of action taken during startups, shutdowns, and malfunctions,

including actions taken to correct malfunctions and shall certify, in the semi-annual reports required in § 35.11(G) of this Part, that all such actions were consistent with the procedures specified in the facility's startup, shutdown and malfunction plan developed under § 35.9.3(B)(4) of this Part.

7. If actions taken by the owner or operator during a startup, shutdown, or malfunction (including an action taken to correct a malfunction) are not consistent with the procedures specified in the facility's startup, shutdown, and malfunction plan, the owner or operator shall record the actions taken and report such actions to the Office of Air Resources within two (2) working days after beginning actions inconsistent with the plan, followed by a letter within seven (7) working days after the end of the event.
8. If a malfunction occurs that was not adequately addressed in the startup, shutdown, and malfunction plan, the owner or operator shall revise the plan within forty-five (45) days after the event to include detailed procedures for operating and maintaining the source during similar malfunction events and a program of corrective action for similar malfunctions of process or air pollution control equipment.

#### **35.9.4 Cleaning and Washoff Solvent Requirements**

- A. The owner or operator of a facility subject to this regulation shall account for organic solvent use in cleaning and washoff operations by recording the following information:
  1. The quantity and types of organic solvent used in washoff and cleaning operations each month;
  2. The number of pieces washed off, and the reason for the washoff; and
  3. The quantity of spent organic solvent generated from each washoff and cleaning activity each month, and whether it is recycled onsite or disposed offsite.
- B. Facilities subject to this regulation shall not use cleaning or washoff solvents that contain any of the pollutants listed in § 35.14 of this Part in concentrations greater than 0.1%.
- C. Spray Booth Cleaning
  1. Facilities subject to this regulation shall not use compounds containing more than eight percent (8%) by weight of VOC for cleaning spray booth components other than conveyors, continuous coaters and their enclosures, or metal filters, unless the spray booth is being refurbished. If the spray booth is being refurbished, that is, the spray booth coating or

other material used to cover the booth is being replaced, the facility shall use no more than one (1) gallon of organic solvent per booth to prepare the booth prior to applying the booth coating.

D. Storage Requirements

1. All finishing, gluing, cleaning, and washoff materials shall be stored in containers that are closed at all times except when material is being added or removed.

**35.9.5 Application Equipment Requirements**

A. The owner or operator of any wood products facility which has the potential to emit twenty-five (25) tons per year or more of volatile organic compounds (VOC) from wood products manufacturing operations, and is not a major source of HAP from wood product manufacturing operations shall not use conventional air spray guns to apply finishing materials, except in the following situations:

1. When applying finishing materials that have a VOC content no greater than 1.0 lb VOC/lb solids, as applied;
2. Touch-up or repair that occurs after the completion of a finishing operation;
3. Touch-up or repair that occurs after the stain and before any other type of finishing material is applied, provided that the touch-up finishing materials are applied from a container that has a volume of no more than two (2) gallons;
4. If the spray gun is aimed and triggered automatically, not manually;
5. If emissions from the finishing application station are directed to a control device;
6. For application of a finishing material if the total usage of that finishing material is no more than five percent (5%) of the total gallons of all finishing materials used at that facility during that semi-annual reporting period, as specified in § 35.11(G)(1)(a) of this Part; or
7. The application of stain on a part for which it is technically or economically infeasible to use any other spray application technology. The facility must demonstrate technical or economic infeasibility by submitting documentation to the Department that the following criteria, either independently or in combination, are met:
  - a. The production speed is too high or the part shape is too complex for one operator to coat the part and the application station is not large enough to accommodate an additional operator; or



- b. The excessively large vertical spray area of the part makes it difficult to avoid sagging or runs in the stain.
- 8. Line Cleaning
  - a. All organic solvent used for line cleaning shall be pumped or drained into a container that is closed at all times except when material is being added or removed.
- 9. Gun Cleaning
  - a. All organic solvent used to clean spray guns shall be collected in a container that is closed at all times except when material is being added or removed.
- B. Beginning January 1, 2020, the owner or operator of a facility which is a major source of hazardous air pollutants from wood products manufacturing operations shall not use conventional air spray guns except when all emissions from the finishing application station are routed to a functioning control device.

#### **35.9.6 Washoff Operations**

- A. Emissions from washoff operations shall be controlled by:
  - 1. Using tanks for washoff that are closed at all times except when material is being added or removed; and
  - 2. Minimizing dripping by tilting or rotating the part to drain as much organic solvent as possible.

#### **35.9.7 Formulation Assessment Plan**

- A. Each owner or operator of a facility that is subject to this regulation and that is a major source of hazardous air pollutants from wood products manufacturing operations shall prepare and maintain a formulation assessment plan that:
  - 1. Lists all VHAP from § 37.13 of this Part that are being used in finishing operations at the facility.
  - 2. Establishes a baseline level of usage by the facility for each VHAP as follows:
    - a. The baseline usage level shall be the annual usage from the most recent calendar year for each VHAP;
    - b. For formaldehyde, the baseline level of usage shall be based on the amount of free formaldehyde present in the finishing material when it is applied;

- c. For styrene, the baseline level of usage shall be an estimate of unreacted styrene, which shall be calculated by multiplying the amount of styrene monomer in the finishing material when it is applied by a factor of 0.16; and
  - d. Facilities using a control device to reduce emissions may adjust their baseline usage based on the overall control efficiency of the control system, calculated using Equation 5 in § 35.10.3(C)(1) of this Part.
  - e. The baseline levels for a VHAP that was not used in the most recent calendar year shall be established as twenty percent (20%) of the Minimum Quantity for that substance specified in [Part 22](#) of this of this Subchapter (Air Toxics).
3. Tracks the annual usage of each VHAP used by the facility.
  4. If the usage of a VHAP in any year exceeds its baseline level, then the owner or operator of the facility shall provide a written notification to the Division by January 31 of the following year that specifies the amount of the increase and explains the reasons for the increase. The Department will determine whether the increase would cause an exceedance of the Acceptable Ambient Levels specified in [Part 22](#) of this Subchapter (Air Toxics). If those limits are exceeded, the Department will develop a timetable for the facility to achieve compliance and a schedule for submitting notification of progress.

## **35.10 Compliance Procedures and Monitoring Requirements**

### **35.10.1 Compliance Using Compliant Coatings**

- A. Compliance with the emissions limitations in §§ 35.7 and 35.8 of this Part through the use of compliant coatings shall be demonstrated by the following methods:
  1. Maintaining Certified Product Data Sheets (CPDS) documenting that the VOC and/or VHAP content of each topcoat, filler, stain, toner, ink, multi-colored coating, pigmented coating, sealer, washcoat, enamel, basecoat, thinner, adhesive and strippable booth coating meets the applicable emissions limitations in §§ 35.7 and 35.8 of this Part; and
  2. Maintaining formulation data and related calculations showing that the VOC and VHAP content of each topcoat, filler, stain, toner, ink, multi-colored coating, sealer, washcoat, enamel, basecoat, adhesive and strippable booth coating diluted onsite, as applied, meets the applicable emissions limitations in §§ 35.7 and 35.8 of this Part; and

3. For facilities with continuous coaters, using one of the following procedures:
  - a. Calculating the VOC and VHAP content, as applicable, of the finishing material in the reservoir from information on the CPDS and records of materials added to the reservoir; or
  - b. Monitoring the viscosity of the finishing material in the reservoir with a viscosity meter or testing the viscosity of the initial finishing material and retesting the material in the reservoir each time solvent is added. If this option is chosen, the facility shall maintain data that demonstrates the correlation between the viscosity of the finishing material and the VOC and VHAP content, as applicable, of the finishing material; and
4. The Department or EPA will determine compliance either by reviewing the records specified in §§ 35.10.1(A)(1) through (3) of this Part or by conducting a performance test according to the specifications in §§ 35.12.1 and 35.12.2 of this Part. If the VOC or VHAP content of a coating determined by a performance test using the procedures specified in §§ 35.12.1 and 35.12.2 of this Part is greater than that indicated on a CPDS or by the facility's formulation or viscosity data, the performance test results shall govern.

#### **35.10.2 Compliance Using Averaging**

- A. To demonstrate compliance with the VOC emission limitations for a particular coating category listed in §§ 35.7.1(B)(1) of this Part for coatings used prior to January 1, 2020, through the use of averaging, the owner or operator of a facility shall, each week:
  1. Calculate the average VOC content for all coatings in that category used at the facility using Equation 1.1:

Equation 1.1

$$E_{voc} = \frac{\sum_{i=1}^n V_i C_i}{\sum_{i=1}^n V_i}$$

Where:

$E_{voc}$  = the weighted average VOC content of coatings in a particular coating category, in lb VOC/gal coating, as applied, excluding water and exempt compounds;

$C$  = the VOC content of a coating in the particular coating category, in lb VOC/gal coating excluding water and exempt compounds, as applied;

$i$  = subscript denoting an individual coating;

$V$  = the volume of coating, in gallons, as applied, of a particular coating in the coating category used during the weekly averaging period, excluding water and exempt compounds.;

2. Demonstrate that the value calculated for  $E_{voc}$  is no greater than 0.9 times the emission limitation, in lbs VOC/gallon coating minus water and exempt compounds, as applied, for that coating category, as listed in § 35.7.1(B)(1) of this Part.
- B. To demonstrate compliance with the VOC emission limitations for a particular coating category listed in § 35.7.1(C)(1) of this Part for coatings used after January 1, 2020, through the use of averaging, the owner or operator of a facility shall, each week:
1. Calculate the average VOC content for all coatings in that category used at the facility using Equation 1.2:

Equation 1.2

$$E_{\text{voc}} = \frac{\sum_{i=1}^n M_i C_i}{\sum_{i=1}^n M_i}$$

Where:

E<sub>VOC</sub> = the weighted average VOC content of coatings in a particular coating category, in lb VOC/lb solids, as applied;

C = the VOC content of a coating in the particular coating category, in lb VOC/lb solids, as applied;

j = subscript denoting an individual coating;

M = the mass of solids. In pounds, in a particular coating in the coating category used during the weekly averaging periods.

2. Demonstrate that the value calculated for E<sub>VOC</sub> is no greater than 0.9 times the emission limitation, in lbs VOC/lb solids, as applied, for that coating category, as listed in § 35.7.1(C)(1) of this Part.
- C. To demonstrate compliance with the VHAP emission limitations in §§ 35.7.2 and 35.7.3 of this Part through the use of averaging, the owner or operator of a facility shall, each month:
1. Calculate the average VHAP content for all finishing materials used at the facility using Equation 2:

Equation 2

$$E_{\text{VHAP}} = \frac{\sum_{i=1}^n M_i C_i + \sum_{i=1}^n S_i W_i}{\sum_{i=1}^n M_i}$$

Where:

$E_{\text{VHAP}}$  = the weighted average VHAP content of finishing materials, in lb VHAP/lb solids;

$C$  = the VHAP content of a finishing material, in lb VHAP/lb solids, as supplied;

$i$  = subscript denoting an individual coating;

$M$  = the mass of solids, in pounds, in a particular finishing material used during the monthly averaging period;

$S$  = the VHAP content of a solvent, expressed as a weight fraction, added to finishing materials; and

$W$  = the amount of solvent, in pounds, added to finishing materials during the monthly averaging period.

2. Demonstrate that the value calculated for  $E_{\text{VHAP}}$  is no greater than one (1) if the facility is complying with § 35.7.2 of this Part and is no greater than 0.8 if the facility is complying with § 35.7.3 of this Part.

### **35.10.3 Initial Compliance Using Control Equipment**

- A. The owner or operator of a facility which uses control equipment to comply with the VOC emission limitations in § 35.7.1(B)(1) of this Part for coatings used prior to January 1, 2020, or § 35.7.1(C)(1) of this Part for coatings used after January 1, 2020, or the VHAP limitations in §§ 35.7.2 and/or 35.7.3 of this Part shall conduct an initial performance test to measure the capture and control efficiency of the control system using the procedures specified in § 35.12.3 of this Part within ninety (90) days of start-up.
- B. Initial compliance with VOC emission limitations for finishing materials through the use of a control system shall be determined as follows:

1. Calculate the overall control efficiency needed ( $R_n$ ) for each finishing material which will be controlled by the control equipment using the following equation:

Equation 3

$$R_n = \left[ \frac{C - EL}{C} \right] (100)$$

Where:

$R_n$  = the overall efficiency of the control system needed, expressed as a percentage.

$C$  = the VOC content of a coating, in lbs VOC/lb solids, as applied;

$EL$  = the emission limitation required for the coating, from § 35.7.1(B)(1) of this Part for coatings used prior to January 1, 2020 or § 35.7.1(C)(1) of this Part for coatings used after January 1, 2020 in lbs VOC/lb solids.

2. Document that the value of  $C$  used in Equation 3 in § 35.10.3(B)(1) of this Part was calculated from the VOC and solids content of the as-applied finishing material.
3. Demonstrate, for all applicable coatings, that the value of  $R_n$  calculated using Equation 3 in § 35.10.3(B)(1) of this Part is less than or equal to the actual overall control efficiency ( $R_a$ ) calculated by substituting the capture efficiency ( $N$ ) and control efficiency ( $F$ ) of the control system measured in the initial performance test into Equation 4 in § 35.10.3(D)(3) of this Part.

Equation 4

$$R_a = (F \times N)(100)$$

- C. Initial compliance with VHAP emission limitations for finishing materials through the use of a control system shall be determined as follows:
  1. Calculate the overall control efficiency needed,  $R_n$ , so that the value of  $E_{ac}$  in Equation 5 is no greater than 1.0 if complying with § 35.7.2 of this Part and so that the value of  $E_{ac}$  in Equation 5 in § 35.10.3(C)(1) of this Part is no greater than 0.8 if complying with § 35.7.3 of this Part;

Equation 5

$$R_n = (100)(E_{bc} - E_{ac})/E_{bc}$$

Where:

$R_n$  = the overall efficiency of the control system needed, expressed as a percentage;

$E_{ac}$  = emissions from an emission point or a set of emission points after control equipment is in operation, in lb VHAP/lb solids; and

$E_{bc}$  = emissions from an emission point or set of emission points before controls, calculated as EVHAP in Equation 2 in § 35.10.2(C)(1) of this Part.

2. Demonstrate that the value of  $R_n$  calculated using Equation 5 in § 35.10.3(C)(1) of this Part is less than or equal to the actual overall control efficiency ( $R_a$ ) calculated using the capture efficiency ( $N$ ) and control efficiency ( $F$ ) of the control system measured in the initial performance test and Equation 4 in § 35.10.3(B)(3) of this Part.
- D. Initial compliance with VHAP emission limitations for gluing materials through the use of a control system shall be determined as follows:
1. Calculate the overall control efficiency of the control system needed ( $R_n$ ) so that the value of  $G_{ac}$  in Equation 6 in § 35.10.3(D)(1) of this Part is no greater than 1.0 if complying with § 35.8(B) of this Part and 0.2 if complying with § 35.8(C) of this Part;



Equation 6

$$R_n = (100)(G_{bc} - G_{ac})/G_{bc}$$

Where:

$R_n$  = the overall efficiency of the control system needed, expressed as a percentage;

$G_{ac}$  = emissions from the gluing operation after control equipment, in lb VHAP/lb solids; and

$G_{bc}$  = emissions from the gluing operation before controls, in lb VHAP/lb solids.

2. Demonstrate that the value of  $R_n$  calculated using Equation 6 in § 35.10.3(D)(1) of this Part is less than or equal to the actual overall control efficiency ( $R_a$ ) calculated using the capture efficiency ( $N$ ) and control efficiency ( $F$ ) of the control system measured in the initial performance test and Equation 4 in § 35.10.3(B)(3) of this Part.

#### **35.10.4 Continuous Compliance Using Control Equipment**

- A. The owners or operator of a facility that is complying with the emission limitations in this regulation through the use of a control system shall demonstrate continuous compliance by installing, calibrating, maintaining, and operating appropriate monitoring equipment according to manufacturers' specifications.
- B. The monitoring equipment installed pursuant to § 35.10.4(A) of this Part shall measure operating parameters which indicate ongoing compliance with the control efficiency requirements in this regulation.
- C. Where a thermal incinerator is used, the operating parameter to be monitored shall be minimum combustion temperature, and a temperature monitoring device equipped with a continuous recorder shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs.
- D. Where a catalytic incinerator equipped with a fixed catalyst bed is used, the operating parameter to be monitored shall be the minimum gas temperature upstream and downstream of the catalyst bed and temperature monitoring devices equipped with continuous recorders shall be installed in the gas stream immediately before and after the catalyst bed.

- E. Where a catalytic incinerator equipped with a fluidized catalyst bed is used, the operating parameters to be monitored shall be the minimum gas temperature upstream of the catalyst bed and the pressure drop across the catalyst bed, and temperature monitoring devices equipped with continuous recorders shall be installed in the gas stream immediately before the bed. In addition, a pressure monitoring device shall be installed to determine the pressure drop across the catalyst bed. A constant pressure drop, as measured monthly at a constant flow rate, shall be maintained.
- F. Where a carbon adsorber is used, the operating parameters to be monitored shall be either the total regeneration mass stream flow for each regeneration cycle and the carbon bed temperature after each regeneration, or the concentration level of organic compounds exiting the adsorber, unless the owner or operator requests and receives approval from the Department and the EPA to establish other operating parameters. One of the following devices is required to monitor these parameters:
1. An integrating regeneration stream flow monitoring device having an accuracy of  $\pm$  ten percent (10%), capable of recording the total regeneration stream mass flow for each regeneration cycle; and a carbon bed temperature monitoring device having an accuracy of one percent (+1%) of the temperature being monitored expressed in degrees Celsius or  $\pm$  0.5°C, whichever is greater, capable of recording the carbon bed temperature after each regeneration and within fifteen (15) minutes of completing any cooling cycle;
  2. An organic monitoring device, equipped with a continuous recorder, to indicate the concentration level of organic compounds exiting the carbon adsorber; or
  3. Another monitoring device that has been approved by the Department and the EPA.
- G. A facility using a control device not listed in this section to comply with this regulation shall submit to the Office of Air Resources a description of the device, test data verifying the performance of the device, and appropriate operating parameter values that will be monitored to demonstrate continuous compliance with the standard. Compliance using this device is subject to the approval of the Department and the EPA.
- H. Operating parameter values indicating compliance shall be calculated as the arithmetic average of the maximum or minimum value of those parameters, as appropriate, measured during the three (3) test runs of the initial performance test, provided that the initial performance test demonstrated compliance.
- I. The capture or control device shall be operated so that the average of all values for a monitored parameter recorded during each operating day is in compliance

with the operating parameter value calculated according to the procedures in § 35.10.4(H) of this Part.

### **35.11 Recordkeeping and Reporting**

- A. The owner or operator of a facility subject to this regulation shall maintain the following records for a period of five (5) years:
1. A certified product data sheet (CPDS) for each finishing material, thinner, adhesive, and strippable booth coating subject to the emission limitations in this regulation;
  2. As applicable, the VOC content in lb VOC/gallon of coating, as applied, or lb VOC/lb solids, and the VHAP content, in lb VHAP/lb of solids, as applied, of each coating subject to the emission limitations in this regulation, and copies of calculations documenting how the as-applied values were determined. The VOC content of strippable booth coatings shall be expressed in units of lb VOC/lb solids, as applied.
  3. The amount and type of each coating and thinner used at the facility each month.
  4. If viscosity measurements are used to track VOC and/or VHAP concentrations:
    - a. Records of dates and amounts of solvent and finishing material added to the continuous coater reservoir;
    - b. Records of dates and results of viscosity measurements; and
    - c. Data demonstrating that viscosity is an appropriate parameter for demonstrating compliance.
- B. The owner or operator of a facility using weekly averaging to comply with the VOC emissions limitations in §§ 35.7.1(B)(1) or 35.7.1(C)(1) of this Part, or monthly averaging to comply with the VHAP emissions limitations in §§ 35.7.2 or 35.7.3 of this Part shall maintain the calculations of  $E_{VOC}$  and  $E_{VHAP}$  required in § 35.10.2 of this Part for a period of five (5) years.
- C. The owner or operator of a source using control equipment to comply with the emissions limitations in this regulation shall maintain the following records for a period of five (5) years:
1. Copies of calculations of  $E_{VHAP}$  from Equation 2 in § 35.10.2(C)(1) of this Part and  $R_n$  from Equation 3 in § 35.10.3(B)(1) of this Part, Equation 5 in § 35.10.3(C)(1) of this Part and Equation 6 in § 35.10.3(D)(1) of this Part, as applicable;

2. Records of the daily average value of each continuously monitored operating parameter for each operating day. If all recorded values for a monitored parameter during an operating day are within the range established during the initial performance test, the owner or operator may record that all values were within the range rather than calculating and recording an average for that day; and
  3. Records of the pressure drop across the catalyst bed for facilities complying with the emission limitations using a catalytic incinerator with a fluidized catalyst bed.
- D. The owner or operator of a facility subject to this regulation shall maintain onsite the work practice implementation plan and for five (5) years shall maintain onsite all records associated with fulfilling the requirements of that plan, as specified in § 35.9 of this Part, including, but not limited to:
1. Records demonstrating that the operator training program is in place;
  2. Records maintained in accordance with the equipment leak inspection and maintenance plan and startup, shutdown, and malfunction plan;
  3. Records associated with the cleaning solvent accounting system;
  4. Records associated with the limitation on the use of conventional air spray guns showing total finishing material usage and the percentage of finishing materials applied with conventional air spray guns for each reporting period;
  5. Records associated with the formulation assessment plan;
  6. Records showing the VOC content of compounds used for cleaning booth components, except for solvent used to clean conveyors, continuous coaters and their enclosures, and/or metal filters;
  7. A copy of logs and other documentation developed to demonstrate that the provisions of the work practice implementation plan are followed; and
  8. A copy of the compliance certifications, and periodic reports submitted in accordance with the requirements of this regulation.
- E. Initial Notifications
1. The owner or operator of a facility subject to this regulation which was constructed before December 7, 1995, and which is a major source of HAP from wood products manufacturing operations shall submit an Initial Notification to the Office of Air Resources within thirty (30) days of becoming a major source of HAP from wood products manufacturing

operations. Initial Notifications for facilities constructed before December 7, 1995, shall include the following information:

- a. The name and address of the owner or operator;
  - b. The address (i.e., physical location) of the facility;
  - c. An identification of the relevant standard, or other requirement, that is the basis of the notification and the facility's compliance date;
  - d. A brief description of the nature, size, design, and method of operation of the facility, including its operating design capacity and an identification of each point of emission for each HAP, or, if a definitive identification is not yet possible, a preliminary identification of each point of emission for each HAP;
  - e. An estimate of the amount of each HAP used and emitted annually from the facility; and
  - f. The number of hours per day and days per week that the facility operates.
2. The owner or operator of a facility subject to this regulation which was constructed or reconstructed on or after December 7, 1995, and which is a major source of HAP from wood products manufacturing operations shall submit an Initial Notification in conjunction with its construction permit application. A facility constructed or reconstructed on or after December 7, 1995, which subsequently becomes a major source of HAP shall submit an Initial Notification within thirty (30) days of becoming a major source of HAP. Initial Notifications for facilities constructed on or after December 7, 1995, shall include the following information:
- a. The date when construction or reconstruction began or is scheduled to begin;
  - b. The anticipated date of startup of the source; and
  - c. The information listed in §§ 35.11(E)(1)(a) through (f) of this Part.
3. A facility subject to this regulation which was constructed or reconstructed after December 7, 1995, shall notify the Division of the actual date of startup of the facility within fifteen (15) calendar days after the startup date.

F. Initial Compliance Certification

1. The owner or operator of a facility subject to the VHAP emission limitations in this regulation shall submit an Initial Compliance Certification

for VHAP to the Division. Initial Compliance Certifications for VHAP shall be submitted within sixty (60) days of beginning operation. The owner or operator of a facility that, due to an increase in emissions, becomes a major source of HAP from wood products manufacturing operations after the effective date of the regulation, shall submit an Initial Compliance Certification to the Division no more than sixty (60) days after becoming a major source of HAP.

2. Initial Compliance Certifications shall include the following information:
  - a. For a facility that is complying with emission limitations through the use of compliant materials, Initial Compliance Certifications shall state that each topcoat, filler, stain, toner, ink, multi-colored coating, pigmented coating, sealer, washcoat, enamel, basecoat, thinner, adhesive and strippable booth coating is in compliance with applicable emissions limitations in this regulation and identify the method used to determine compliance.
  - b. For a facility monitoring viscosity to demonstrate compliance with emission limitations, the initial compliance report shall state that viscosity is an appropriate parameter for demonstrating compliance, that viscosity is being measured in accordance with the specifications in § 35.10.1(A)(3)(b) of this Part and that viscosity measurements demonstrate that the VHAP and VOC content of the material in the coaters is in compliance with applicable emission limitations.
  - c. For a facility using weekly averaging to comply with the VOC emission limitations in §§ 35.7.1(B)(1) or 35.7.1(C)(1) of this Part, or monthly averaging to comply with the VHAP emission limitations in §§ 35.7.2 or 35.7.3 of this Part, the Initial Compliance Certification shall state that EVOC and EVHAP, as calculated for coatings used prior to January 1, 2020 using Equation 1.1 in § 35.10.2(A)(1) of this Part and for coatings used after January 1, 2020, Equation 1.2, in § 35.10.2(B)(1) of this Part and Equation 2 in § 35.10.2(C)(1) of this Part, respectively, are no greater than the applicable emission limitations specified in § 35.10.2 of this Part.
  - d. For a facility using a control system to comply with the emission limitations in this regulation, the Initial Compliance Certification shall identify each control device installed, including the identification number, permit number, installation date and equipment controlled. In addition, the following information must be submitted no more than sixty (60) days after completing the initial performance test of the control system:

- (1) The results of the initial performance test of the control system;
  - (2) The overall control efficiency needed ( $R_n$ ), calculated using Equation 3 in § 35.10.3(B)(1) of this Part for VOC emissions from finishing operations, Equation 5 in § 35.10.3(C)(1) of this Part for VHAP emissions from finishing operations, and Equation 6 in § 35.10.3(D)(1) of this Part for VHAP emissions from gluing operations, as applicable;
  - (3) The actual overall control efficiency ( $R_a$ ) calculated using the results of the initial performance test and Equation 4 in § 35.10.3(B)(3) of this Part; and
  - (4) A plan for monitoring operating parameters which identifies the operating parameter values which indicate ongoing compliance, calculated as specified in § 35.10.4(H) of this Part, discusses why those parameters are appropriate indicators of compliance, and specifies the frequency that those parameters will be monitored.
- e. Initial Compliance Certifications shall state that a work practice implementation plan has been developed and procedures have been established for implementing the provisions of that plan.
  - f. Initial Compliance Certifications shall be signed by a responsible official of the company that owns or operates the facility.

#### G. Periodic Reports

1. The owner or operator of a facility subject to this regulation shall submit periodic reports to the Office of Air Resources according to the following specifications:
  - a. Periodic reports shall be submitted semi-annually by February 1 of each year for the reporting period of July 1 through December 31 of the previous year and by September 1 for the reporting period of January 1 through June 30, which include the following:
    - (1) The amount and type of VOC and VHAP in each coating used at the facility during the reporting period,
    - (2) A compliance certification, as specified §§ 35.11(G)(1)(b) through (g) of this Part, and
    - (3) Documentation of progress made during the reporting period toward reducing the VOC and VHAP content of coatings used at the facility.

- b. If the facility is using compliant coatings to comply with the emission limitations in §§ 35.7 and 35.8 of this Part, periodic reports shall state that the VOC and VHAP content of each topcoat, filler, stain, toner, ink, multi-colored coating, pigmented coating, sealer, washcoat, enamel, basecoat, thinner, adhesive and strippable booth coating used each day at the facility was in compliance with applicable limitations in those sections throughout the reporting period, or should identify periods of noncompliance and the reasons for noncompliance.
- c. If the facility uses viscosity to monitor compliance, the periodic report shall state that the viscosity of the finishing material in the reservoir was monitored according to the specifications in § 35.10.1(A)(3)(b) of this Part and that those measurements demonstrated compliance with applicable emission limitations throughout the reporting period, or should identify the days of noncompliance and the reasons for noncompliance.
- d. If the facility is complying with the VOC emissions limitations in § 35.7 of this Part using averaging, the periodic report shall include the results of the VOC averaging calculation using Equation 1.1 in § 35.10.2(A)(1) of this Part, for coatings used prior to January 1, 2020, or Equation 1.2 in § 35.10.2(B)(1), for coatings used after January 1, 2020, for each week in the reporting period and shall certify that the facility was in compliance with the applicable emission limitations in all weeks during that period, or identify the weeks that these limitations were exceeded and give reasons for those exceedances.
- e. If the facility is complying with the VHAP emissions limitations in § 35.7 of this Part using averaging, the periodic report shall include the results of the VHAP averaging calculation using Equation 2 in § 35.10.2(C)(1) of this Part for each month in the reporting period and shall certify that the facility was in compliance with the applicable emission limitations in all months during that period, or identify the months that these limitations were exceeded and give reasons for those exceedances.
- f. If the facility is complying with the emission limitations in this regulation using a control system, the periodic report shall state that the daily average value of each continuously monitored operating parameter was within the acceptable range on each operating day, or identify the days of noncompliance and the reasons for the noncompliance.
- g. Periodic reports shall include a statement certifying that the work practice implementation plan and startup, shutdown, and



malfunction plan were followed throughout the reporting period, or otherwise identify the periods of noncompliance with the work practice standards.

- h. The periodic report shall be signed by a responsible official of the company that owns or operates the facility.
- i. If an exceedance occurs, periodic reports must be submitted quarterly until a request to reduce the reporting frequency has been approved. Submittal frequencies may be reduced to semi-annual provided that the following conditions have been satisfied:
  - (1) The facility has demonstrated a full year of compliance without an exceedance; and
  - (2) The owner or operator of the facility continues to comply with the recordkeeping and monitoring requirements specified in this regulation.

## **35.12 Performance Test Methods**

### **35.12.1 VOC and Solids Content**

- A. VOC and solids content, by weight, of coatings shall be demonstrated with 40 C.F.R. § 60 Appendix A-7 Method 24, incorporated in § 35.4(A) of this Part, or an alternative procedure approved by EPA and the Department. Sampling procedures shall follow the guidelines presented in "Standard Procedures for Collection of Coating and Ink Samples for VOC Content Analysis by Reference Method 24 and Reference Method 24A," EPA-340/1-91-010, incorporated in § 35.4(B) of this Part.
- B. The owner or operator of a facility that uses a finishing material that does not release VOC reaction byproducts during the cure; for example, if all VOC is solvent; may request permission to use batch formulation information to demonstrate compliance. If the VOC content of a coating determined by 40 C.F.R. § 60 Appendix A-7 Method 24, incorporated in § 35.4(A) of this Part, test is greater than that indicated by the facility's formulation data, the 40 C.F.R. § 60 Appendix A-7 Method 24 test shall govern.

### **35.12.2 VHAP and Solids Content**

- A. 40 C.F.R. § 63 Appendix A Method 311 incorporated in § 35.4(A) of this Part, or an alternative method, if approved by EPA and the Department, shall be used in conjunction with formulation data to determine the VHAP content of the liquid coating. Formulation data shall be used to identify VHAP present in the coating, and Method 311 or an approved alternative method shall be used to quantify the VHAP identified through the formulation data. 40 C.F.R. § 63 Appendix A Method

311 shall not be used to quantify VHAP such as styrene and formaldehyde that are emitted during the cure.

- B. 40 C.F.R. § 60 Appendix A-7 Method 24, incorporated in § 35.4(A) of this Part, shall be used to determine the solids content by weight and the density of coatings for the purpose of showing compliance with VHAP emission limitations.
- C. The owner or operator of a facility that uses a finishing material that does not release VOC or VHAP byproducts during the cure; for example, if all VOC and VHAP present in the coating is solvent; may request permission to use batch formulation information to demonstrate compliance.
- D. If the VOC content of a coating as determined by 40 C.F.R. § 60 Appendix A-7 Method 24 or 40 C.F.R. § 63 Appendix A Method 311, incorporated in § 35.4(A) of this Part test is higher than that indicated by a facility's formulation data, the 40 C.F.R. § 60 Appendix A-7 Method 24 or 40 C.F.R. § 63 Appendix A311 test shall govern, unless the facility can demonstrate to the satisfaction of the Department that formulation data are correct.
- E. Sampling procedures shall follow the guidelines presented in "Standard Procedures for Collection of Coating and Ink Samples for VOC Content Analysis by Reference Method 24 and Reference Method 24A," EPA-340/1-91-010, incorporated in § 35.4(B) of this Part.

### **35.12.3 Control Equipment Efficiency**

- A. 40 C.F.R. § 60 Appendix A Methods 18, 25, or 25A, incorporated in § 35.4(A) of this Part, shall be used to determine the VOC concentration of gaseous air streams. EPA Method 18 shall be used to determine the VHAP concentration of gaseous air streams. The test shall consist of three (3) separate runs, each lasting a minimum of thirty (30) minutes.
- B. 40 C.F.R. § 60 Appendix A-1 Method 1 or 1A, incorporated in § 35.4(A) of this Part, shall be used for sample and velocity traverses.
- C. 40 C.F.R. § 60 Appendix A-1 Method 2, 2A, 2C, or 2D, incorporated in § 35.4(A) of this Part, shall be used to measure velocity and volumetric flow rates.
- D. 40 C.F.R. § 60 Appendix A-2 Method 3, incorporated in § 35.4(A) of this Part, shall be used to analyze exhaust gases.
- E. 40 C.F.R. § 60 Appendix A-3 Method 4, incorporated in § 35.4(A) of this Part, shall be used to measure the moisture content of stack gas when required.
- F. 40 C.F.R. § 60 Appendix A Methods 2, 2A, 2C, 2D, 3, and 4, incorporated in § 35.4(A) of this Part shall be performed, as applicable, at least twice during each test run.

- G. VOC and VHAP control systems must be constructed so that volumetric flow rates and VOC and/or total VHAP concentrations, as applicable, can be determined by the test methods specified in §§ 35.12.3(A) through (F) of this Part, as applicable.
- H. Capture efficiency shall be measured using measures approved by the EPA.
- I. Testing shall be performed while all affected emission points are connected and operating at maximum production rate.
- J. The efficiency § 35.12.3(F) of this Part of the control device shall be determined using Equation 7 in § 35.12.3(J) of this Part:

Equation 7

$$F = \frac{\sum_{i=1}^n Q_{bi} C_{bi} - \sum_{j=1}^p Q_{aj} C_{aj}}{\sum_{i=1}^n Q_{bi} C_{bi}}$$

Where:

F = control device efficiency, expressed as a fraction.

$C_{bi}$  = the concentration of VOC or VHAP, as applicable, in gas stream (i) entering the emission control device, in parts per million by volume.

$C_{aj}$  = the concentration of VOC or VHAP, as applicable, in gas stream (j) exiting the emission control device, in parts per million by volume.

$Q_{aj}$  = the volumetric flow rate of gas stream (j) exiting the emission control device, in dry standard cubic meters per hour.

$Q_{bi}$  = the volumetric flow rate of gas stream (i) entering the emission control device, in dry standard cubic meters per hour.

- K. Determine the efficiency (N) of the capture system using Equation 8 in § 35.12.3(K) of this Part:

Equation 8

$$N = \frac{\sum_{i=1}^n Q_{di} C_{di}}{\sum_{i=1}^n Q_{di} C_{di} + \sum_{k=1}^p Q_{fk} C_{fk}}$$

Where:

N = the capture system efficiency, expressed as a fraction.

$C_{di}$  = the concentration of VOC or VHAP, as applicable, in gas stream (i) entering the emission control device from the affected emission point(s), in parts per million by volume.

$C_{fk}$  = the concentration of VOC or VHAP, as applicable, in each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected emission point(s), in parts per million by volume.

$Q_{di}$  = the volumetric flow rate of gas stream (i) entering the emission control device from the affected emission point(s), in dry standard cubic meters per hour.

$Q_{fk}$  = the volumetric flow rate of each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected emission point(s), in dry standard cubic meters per hour.

- L. If all effected emissions points are surrounded by a permanent enclosure that is demonstrated to be total by procedures acceptable to the Department and the EPA, the control device capture efficiency, N, is equal to 1.

### 35.13 List of Volatile Hazardous Air Pollutants (VHAPs)

Chemical name	CAS No.
Acetaldehyde	75070
Acetamide	60355
Acetonitrile	75058
Acetophenone	98862

2-Acetylaminofluorine	53963
Acrolein	107028
Acrylamide	79061
Acrylic acid	79107
Acrylonitrile	107131
Allyl chloride	107051
4-Aminobiphenyl	92671
Aniline	62533
o-Anisidine	90040
Benzene	71432
Benzidine	92875
Benzotrichloride	98077
Benzyl chloride	100447
Biphenyl	92524
Bis(2-ethylhexyl)phthalate (DEHP)	117817
Bis(chloromethyl)ether	542881
Bromoform	75252
1,3-Butadiene	106990
Caprolactam	105602
Carbon disulfide	75150

Carbon tetrachloride	56235
Carbonyl sulfide	463581
Catechol	120809
Chloroacetic acid	79118
2-Chloroacetophenone	532274
Chlorobenzene	108907
Chloroform	67663
Chloromethyl methyl ether	107302
Chloroprene	126998
Cresols (isomers and mixture)	1319773
o-Cresol	95487
m-Cresol	108394
p-Cresol	106445
Cumene	98828
2,4-D (2,4-Dichlorophenoxyacetic acid, including salts and esters)	94757
DDE (1,1-Dichloro-2,2-bis(p-chlorophenyl)ethylene)	72559
Diazomethane	334883
Dibenzofuran	132649
1,2-Dibromo-3-chloropropane	96128
Dibutylphthalate	84742

1,4-Dichlorobenzene	106467
3,3'-Dichlorobenzidine	91941
Dichloroethyl ether (Bis(2-chloroethyl)ether)	111444
1,3-Dichloropropene	542756
Diethanolamine	111422
N,N-Dimethylaniline	121697
Diethyl sulfate	64675
3,3'-Dimethoxybenzidine	119904
4-Dimethylaminoazobenzene	60117
3,3'-Dimethylbenzidine	119937
Dimethylcarbamoyl chloride	79447
N,N-Dimethylformamide	68122
1,1-Dimethylhydrazine	57147
Dimethyl phthalate	131113
Dimethyl sulfate	77781
4,6-Dinitro-o-cresol, and salts	
2,4-Dinitrophenol	51285
2,4-Dinitrotoluene	121142
1,4-Dioxane (1,4-Diethyleneoxide)	123911
1,2-Diphenylhydrazine	122667

Epichlorohydrin (1-Chloro-2,3-epoxypropane)	106898
1,2-Epoxybutane	106887
Ethyl acrylate	140885
Ethylbenzene	100414
Ethyl carbamate (Urethane)	51796
Ethyl chloride (Chloroethane)	75003
Ethylene dibromide (Dibromoethane)	106934
Ethylene dichloride (1,2-Dichloroethane)	107062
Ethylene glycol	107211
Ethylene oxide	75218
Ethylenethiourea	96457
Ethylidene dichloride (1,1-Dichloroethane)	75343
Formaldehyde	50000
Glycol ethers	0
Hexachlorobenzene	118741
Hexachloro-1,3-butadiene	87683
Hexachloroethane	67721
Hexamethylene-1,6-diisocyanate	822060
Hexamethylphosphoramide	680319
Hexane	110543



Hydrazine	302012
Hydroquinone	123319
Isophorone	78591
Maleic anhydride	108316
Methanol	67561
Methyl bromide (Bromomethane)	74839
Methyl chloride (Chloromethane)	74873
Methyl chloroform (1,1,1-Trichloroethane)	71556
Methyl ethyl ketone (2-Butanone)	78933
Methylhydrazine	60344
Methyl iodide (Iodomethane)	74884
Methyl isobutyl ketone (Hexone)	108101
Methyl isocyanate	624839
Methyl methacrylate	80626
Methyl tert-butyl ether	1634044
4,4'-Methylenebis(2-chloroaniline)	101144
Methylene chloride (Dichloromethane)	75092
4,4'-Methylenediphenyl diisocyanate (MDI)	101688
4,4'-Methylenedianiline	101779
Naphthalene	91203

Nitrobenzene	98953
4-Nitrobiphenyl	92933
4-Nitrophenol	100027
2-Nitropropane	79469
N-Nitroso-N-methylurea	684935
N-Nitrosodimethylamine	62759
N-Nitrosomorpholine	59892
Phenol	108952
p-Phenylenediamine	106503
Phosgene	75445
Phthalic anhydride	85449
Polychlorinated biphenyls (Aroclors)	1336363
Polycyclic Organic Matter <sup>b</sup>	0
1,3-Propane sultone	1120714
beta-Propiolactone	57578
Propionaldehyde	123386
Propoxur (Baygon)	114261
Propylene dichloride (1,2-Dichloropropane)	78875
Propylene oxide	75569
1,2-Propylenimine (2-Methyl aziridine)	75558

Quinone	106514
Styrene	100425
Styrene oxide	96093
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016
1,1,2,2-Tetrachloroethane	79345
Tetrachloroethylene (Perchloroethylene)	127184
Toluene	108883
2,4,-Toluenediamine	95807
Toluene-2,4-diisocyanate	584849
o-Toluidine	95534
1,2,4-Trichlorobenzene	120821
1,1,2-Trichloroethane	79005
Trichloroethylene	79016
2,4,5-Trichlorophenol	95954
2,4,6-Trichlorophenol	88062
Triethylamine	121448
Trifluralin	1582098
2,2,4-Trimethylpentane	540841
Vinyl acetate	108054
Vinyl bromide	593602

Vinyl chloride	75014
Vinylidene chloride (1,1,-Dichloroethylene)	75354
Xylenes (isomers and mixture)	1330207
o-Xylene	95476
m-Xylene	108383
p-Xylene	106523
<p><sup>a</sup> Includes mono- and di-ethers of ethylene glycol, diethylene glycols and triethylene glycol; R-(OCH<sub>2</sub>CH<sub>2</sub>)RR-OR where:</p> <p>n = 1,2, or 3,</p> <p>R = alkyl or aryl groups</p> <p>R' = R, H, or groups which, when removed, yield glycol ethers with the structure: R-(OCH<sub>2</sub>CH<sub>2</sub>)<sub>n</sub> – OH. Polymers are excluded from the glycol category.</p>	
<p><sup>b</sup> Includes organic compounds with more than one benzene ring, and which have a boiling point greater than or equal to 100°C.</p>	

## **35.14 Pollutants Excluded from use in Cleaning and Washoff Solvents**

Chemical Name	CAS No.
4-Aminobiphenyl	92671
Styrene oxide	96093
Diethyl sulfate	64675
N-Nitrosomorpholine	59892
Dimethyl formamide	68122
Hexamethylphosphoramide	680319
Acetamide	60355
4,4'-Methylenedianiline	101779
o-Anisidine	90040
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016
Beryllium salts	-
Benzidine	92875
N-Nitroso-N-methylurea	684935
Bis(chloromethyl)ether	542881
Dimethyl carbamoyl chloride	79447
Chromium compounds (hexavalent)	-
1,2-Propylenimine (2-Methyl aziridine)	75558
Arsenic and inorganic arsenic compounds	9999990 4

Hydrazine	302012
1,1-Dimethyl hydrazine	57147
Beryllium compounds	7440417
1,2-Dibromo-3-chloropropane	96128
N-Nitrosodimethylamine	62759
Cadmium compounds	-
Benzo (a) pyrene	50328
Polychlorinated biphenyls (Aroclors)	1336363
Heptachlor	76448
3,3'-Dimethyl benzidine	119937
Nickel subsulfide	1203572 2
Acrylamide	79061
Hexachlorobenzene	118741
Chlordane	57749
1,3-Propane sultone	1120714
1,3-Butadiene	106990
Nickel refinery dust	-
2-Acetylaminoflourine	53963
3,3'-Dichlorobenzidine	53963

Lindane (hexachlorcyclohexane, gamma)	58899
2,4-Toluene diamine	95807
Dichloroethyl ether (Bis(2-chloroethyl)ether)	111444
1,2 - Diphenylhydrazine	122667
Toxaphene (chlorinated camphene)	8001352
2,4-Dinitrotoluene	121142
3,3'-Dimethoxybenzidine	119904
Formaldehyde	50000
4,4'-Methylene bis(2-chloroaniline)	101144
Acrylonitrile	107131
Ethylene dibromide(1,2-Dibromoethane)	106934
DDE (1,1-p-chlorophenyl 1-2 dichloroethylene)	72559
Chlorobenzilate	510156
Dichlorvos	62737
Vinyl chloride	75014
Coke Oven Emissions	9999990 8
Ethylene oxide	75218
Ethylene thiourea	96457
Vinyl bromide (bromoethene)	593602



Selenium sulfide (mono and di)	7488564
Chloroform	67663
Pentachlorophenol	87865
Ethyl carbamate (Urethane)	51796
Ethylene dichloride (1,2-Dichloroethane)	107062
Propylene dichloride (1,2-Dichloropropane)	78875
Carbon tetrachloride	56235
Benzene	71432
Methyl hydrazine	60344
Ethyl acrylate	140885
Propylene oxide	75569
Aniline	62533
1,4-Dichlorobenzene(p)	106467
2,4,6-Trichlorophenol	88062
Bis(2-ethylhexyl)phthalate (DEHP)	117817
o-Toluidine	95534
Propoxur	114261
Trichloroethylene	79016
1,4-Dioxane (1,4-Diethyleneoxide)	123911
Acetaldehyde	75070

Bromoform	75252
Captan	133062
Epichlorohydrin	106898
Methylene chloride (Dichloromethane)	75092
Tetrachloroethylene (Perchloroethylene)	127184
Dibenz (ah) anthracene	53703
Chrysene	218019
Dimethyl aminoazobenzene	60117
Benzo (a) anthracene	56553
Benzo (b) fluoranthene	205992
Antimony trioxide	1309644
2-Nitropropane	79469
1,3-Dichloropropene	542756
7, 12-Dimethylbenz(a)anthracene	57976
Benz(c)acridine	225514
Indeno(1,2,3-cd)pyrene	193395
1,2:7,8-Dibenzopyrene	189559
Solvents containing these pollutants in concentrations less than or equal to 0.1% may be used.	

**250-RICR-120-05-36**

## **TITLE 250 – DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

### **CHAPTER 120 – AIR RESOURCES**

#### **SUBCHAPTER 05 – AIR POLLUTION CONTROL**

PART 36 – Control of Emissions from Organic Solvent Cleaning

### **36.1 Purpose and Authority**

#### **36.1.1 Purpose**

The purpose of this regulation is to limit emissions from organic solvent cleaning machines and industrial solvent cleaning operations.

#### **36.1.2 Authority**

These regulations are authorized pursuant to R.I. Gen. Laws § 42-17.1-2(19) and R.I. Gen. Laws Chapter 23-23, and have been promulgated pursuant to the procedures set forth in the Rhode Island Administrative Procedures Act, R.I. Gen. Laws Chapter 42-35.

### **36.2 Application**

The terms and provisions of this regulation shall be liberally construed to permit the Department to effectuate the purposes of state laws, goals and policies.

### **36.3 Severability**

If any provision of this regulation or the application thereof to any person or circumstance, is held invalid by a court of competent jurisdiction, the validity of the remainder of the regulation shall not be affected thereby.

### **36.4 Incorporated Materials**

These regulations hereby adopt and incorporate 40 C.F.R. §§ 63.471; 63.460; 40 C.F.R. § 60 Appendix A-7 Methods 25 and 25d, and 40 C.F.R. § 63, Appendix A, Subpart T, (2018), by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.

### **36.5 Definitions**

- A. Unless otherwise expressly defined in this section, the terms used in this regulation shall be defined by reference to [Part 0](#) of this Subchapter (General

Definitions). As used in this regulation, the following terms shall, where the context permits, be construed as follows:

1. "Air blanket" means the layer of air inside a solvent cleaning machine above the solvent/air interface. The centroid of the air blanket is equidistant from the sides of the machine.
2. "As-applied VOC content" means the VOC content of a cleaning solvent at the time of use, including any solvent, catalyst or other substance added to the as-supplied cleaning solvent. "As-applied VOC content" is determined using an EPA reference method, a California Air Resources Board reference method or other method approved by the Director and EPA.
3. "Automated parts handling system" means a mechanical device that carries all parts and parts baskets through the cleaning cycle at a controlled speed from the initial loading of contaminated or wet parts cold cleaning through the removal of the cleaned or dried parts. Automated parts handling systems include, but are not limited to, hoists and conveyors.
4. "Batch cleaning" means the process in which individual parts or a set of parts move through an entire cleaning cycle before new parts are introduced into the solvent cleaning machine.
5. "Capture efficiency" means the ratio of VOC emissions delivered to the control device to the total VOC emissions resulting from industrial solvent cleaning, expressed as a percentage;
6. "Carbon adsorber" means a bed of activated carbon which adsorbs solvent from an air-solvent gas-vapor stream.
7. "Clean liquid solvent" means fresh unused solvent, recycled solvent, or used solvent that has been cleaned of contaminants (e.g., skimmed of oils or sludge and strained of metal chips).
8. "Cleaning activity" means the use of solvents to remove contaminants including, but not limited to, adhesives, inks, paint, dirt, soil, oil, and grease from parts, products, tools, machinery, equipment, vessels, and work production related areas for a variety of reasons, including safety, operability, and to avoid product contamination; this includes activities such as wiping, flushing, or spraying. Examples of such activities may include, but are not limited to, the cleaning of spray booths, spray guns, and printing presses.
9. "Cleaning capacity" means, for a cleaning machine without a solvent/air interface, the maximum volume of parts that can be cleaned at one time.

In most cases, the cleaning capacity is equal to the volume (length x width x height) of the cleaning chamber.

10. "Cleaning solvent" means any VOC-containing liquid, including a liquid impregnated wipe or towelette, used in cleaning;
11. "Cold cleaning" means an organic solvent cleaning process which cleans and removes contaminants or water from surfaces by spraying, brushing, flushing, immersing, or drying parts. Cleaning machines that use heated, nonboiling solvent to clean the parts are classified as cold solvent cleaning machines. Wipe cleaning is not included in this definition.
12. "Control device efficiency" means the ratio of VOC emissions recovered or destroyed by the control device to the total VOC emissions that are introduced into the device, expressed as a percentage;
13. "Dwell" means the technique of holding parts within the freeboard zone but above the vapor zone of the solvent cleaning machine. Dwell is used after cleaning to allow solvent to drain from parts or parts baskets back into the solvent cleaning machine.
14. "Dwell time" means the amount of time that a part dwells in the freeboard zone of the solvent cleaning machine.
15. "Emission" means the release or discharge, directly or indirectly, of one or more air pollutants into the air.
16. "Freeboard height" means; for a batch cleaning machine, the distance from the solvent/air interface, measured during the idling mode, to the top of the cleaning machine; for an in-line cleaning machine, it is the distance from the solvent/air interface to the bottom of the entrance or exit opening, whichever is lower, as measured during the idling mode.
17. "Freeboard ratio" means the freeboard height divided by the width of the smaller interior dimension of the organic solvent cleaning machine.
18. "Freeboard zone" means; for a batch cleaning machine, the zone within the solvent cleaning machine that extends from the solvent/air interface to the top of the solvent cleaning machine; for an in-line cleaning machine, it is the zone within the solvent cleaning machine that extends from the solvent/air interface to the bottom of the entrance or exit opening, whichever is lower.
19. "Hazardous air pollutant" means any pollutant which has been listed pursuant to 42 U.S.C. §§ 7412(b) (CAA § 112(b)) or which is listed in [Part 22](#) of this Subchapter (Air Toxics).

20. "Idling mode" means the time period when a solvent cleaning machine is not actively cleaning parts and the sump heating coils, if present, are turned on.
21. "In-line cleaning" means an organic solvent cleaning machine that uses an automated parts handling system, typically a conveyor, to automatically provide a continuous supply of parts to be cleaned. These units are fully enclosed except for the conveyor inlet and exit openings. In-line cleaning machines can be either cold or vapor cleaning machines.
22. "Industrial solvent cleaning" means the use of cleaning solvent to remove uncured adhesives, uncured inks, uncured coatings or contaminants such as dirt, soil or grease from parts, products, tools, machinery, equipment or work areas, where such parts, products, tools, machinery, equipment and work areas are incorporated into or used exclusively in manufacturing a product.
  - a. Industrial solvent cleaning includes spray gun cleaning, spray booth cleaning, cleaning of manufactured components, parts cleaning, cleaning of production equipment for maintenance or to prohibit cross-contamination, and cleaning of tanks, mixing pots, process vessels and lines.
  - b. Industrial solvent cleaning does not include the cleaning of personal protection equipment, such as respirators.
  - c. Industrial solvent cleaning does not include solvent cleaning machines as defined in § 36.5(A)(35) of this Part.
23. "Janitorial cleaning" means general and maintenance cleaning of building or facility components including, but not limited to, floors, ceilings, walls, windows, doors, stairs, restrooms, furnishings, kitchens and exterior surfaces of office equipment. "Janitorial cleaning" includes graffiti removal. "Janitorial cleaning" does not include the cleaning of parts, products or equipment, where such parts, products or equipment are incorporated into or used exclusively in manufacturing a product. "Janitorial cleaning" excludes the cleaning of work areas, such as laboratory benches, where manufacturing or repair activity is performed;
24. "Leakproof coupling" means a threaded or other type of coupling that prevents solvents from leaking while filling or draining solvent to and from the solvent cleaning machine.
25. "Lip exhaust" means a device installed at the top of the opening of a solvent cleaning machine that draws air and solvent vapor from the freeboard zone and removes the air and vapor from the solvent cleaning area.

26. "Medical device" means an instrument, apparatus, implement, machine, gadget, appliance, implant, in vitro reagent or other similar or related article, including any component, part or accessory, which meets one of the following conditions:
  - a. Recognized in the official National Formulary or the United States Pharmacopeia or any supplement thereto,
  - b. Intended for use in the diagnosis of disease or other conditions or in the cure, mitigation, treatment or prevention of disease, in persons or animals, or
  - c. Intended to affect the structure or function of the body of a person or animal, and which does not achieve its primary intended purposes through chemical action within or on such body and which is not dependent upon being metabolized for the achievement of its primary intended purposes;
27. "Open top area" means the solvent/air interface area which is open to the atmosphere during operations.
28. "Organic solvent cleaning" means the process of cleaning contaminants or water from surfaces by cold cleaning or vapor cleaning using Volatile Organic Compounds (VOC) or volatile Hazardous Air Pollutants.
29. "Overall control efficiency" means the product of the capture efficiency and the control device efficiency;
30. "Primary condenser" means a series of cooling coils on a vapor cleaning machine through which a chilled substance is circulated to provide continuous condensation of rising solvent vapors and, thereby, create a concentrated solvent vapor zone.
31. "Refrigerated freeboard chiller" means a control device mounted above the primary condenser coils consisting of secondary coils which carry a refrigerant to provide a chilled air blanket above the solvent vapor to reduce emissions from the solvent cleaning machine.
32. "Remote-reservoir cold cleaning" means cold cleaning using equipment which pumps liquid solvent to a sink-like work area and then drains the solvent back into an enclosed container while parts are being cleaned, allowing no solvent to pool in the work area.
33. "Screen printing" means a method of creating an image by pressing ink through a screen or fabric to which a stencil has been applied and where the stencil openings determine the form and dimensions of the image.

34. "Solvent/air interface" means, for a vapor cleaning machine, the location of contact between the concentrated solvent vapor layer and the air. If this location cannot be determined, it is assumed to be at the mid-line height of the primary condenser coils. For a cold solvent cleaning machine, it is the location of contact between the liquid solvent and the air.
35. "Solvent cleaning machine" means any device or piece of equipment that uses solvent liquid or vapor to remove contaminants from the surfaces of materials. Types of solvent cleaning machines include, but are not limited to, batch vapor, in-line vapor, in-line cold, and batch cold solvent cleaning machines.
36. "Solvent vapor zone" means; for a vapor cleaning machine, the zone that extends from the liquid solvent surface to the level that solvent vapor is condensed. This condensation level is defined as the midline height of the primary condenser coils.
37. "Special and extreme solvent metal cleaning" means the use of a cold solvent cleaning machine to clean metal parts where such metal parts are used in any of the following applications:
  - a. Research, development, manufacture and rework of electronic parts, assemblies, boxes, wiring harnesses, sensors and connectors used in aerospace service; or
  - b. Research, development, manufacture and rework of high precision products for which contamination must be minimized in accordance with a customer or other specification.
38. "Sump" means the part of a solvent cleaning machine where the liquid solvent is located.
39. "Superheated vapor system" means a system that heats solvent vapor to a temperature above the solvent's boiling point. Parts are held (dwell) in the superheated vapor to evaporate the liquid solvent on them before exiting the machine. Hot vapor recycle is an example of a superheated vapor system.
40. "Vapor cleaning" means an organic solvent cleaning process in which contaminants or water are cleaned and removed from surfaces by condensing hot solvent vapor on the colder pieces. This definition includes vapor degreasing and drying.
41. "Volatile Organic Compound" or "VOC" means "Volatile Organic Compounds and Halogenated Organic Compounds" or "VOC" and "HOC".
42. "Working mode" means the time period when the solvent cleaning machine is actively cleaning parts.



## 36.6 Applicability

- A. The owner or operator of a solvent cleaning machine as defined in § 36.5(A)(35) of this Part, shall comply with the requirements of §§ 36.7 through 36.16 of this Part, as applicable.
- B. The requirements in § 36.9 of this Part shall not apply to any cold solvent cleaning machine that uses a solvent which contains no more than five percent (5%) VOC or volatile HAP by weight.
- C. The requirements of this regulation, with the exception of §§ 36.14(E) and (F) of this Part, shall not apply to any cold solvent cleaning machine that has an internal volume of one (1) liter or less.
- D. The owner or operator of a facility at which cleaning solvents are used for industrial solvent cleaning as defined in § 36.5(A)(22) of this Part, which has actual VOC emissions, before controls, greater than 2.7 tons during any consecutive 12-month period from industrial solvent cleaning activities, shall comply with the requirements of § 36.17 of this Part unless exempt as specified in §§ 36.6(D)(1) through (16) of this Part.
  - 1. The use of industrial cleaning solvents for the following activities shall be exempt from § 36.17.1 of this Part; however, the recordkeeping requirements in § 36.17.2 of this Part shall apply:
    - a. Any cleaning activity associated with a category listed below:
      - (1) Coating operations subject to [Part 19](#) of this Subchapter (Control of Volatile Organic Compounds from Surface Coating Operations);
      - (2) Wood product coating operations subject to [Part 35](#) of this Subchapter (Control of Volatile Organic Compounds and Volatile Hazardous Air Pollutants from Wood Products Manufacturing Operations);
      - (3) Printing operations subject to [Part 21](#) of this Subchapter (Control of Volatile Organic Compound Emissions from Printing Operations); or (4) Adhesives, sealants, adhesive primers, and sealant primers subject to [Part 44](#) of this Subchapter (Control of Volatile Organic Compounds from Adhesives and Sealants).
  - 2. Solvent cleaning activities subject to §§ 36.7 through 36.16 of this Part;
  - 3. Quality control or laboratory testing;
  - 4. Research and development;

5. Medical device manufacturing;
6. Pharmaceutical or biological product manufacturing;
7. Any industrial solvent cleaning activity that uses 55 gallons or less of an industrial cleaning solvent in any 12-month rolling period calendar year;
8. Janitorial cleaning activities;
9. Cleaning of screen printing equipment, if the cleaning solvent used has an as-applied VOC content that does not exceed 500 grams VOC per liter, equivalent to 4.2 lb/gal;
10. A cleaning activity, including surface preparation prior to coating, necessary to meet a standard or specification issued or approved by the United States Department of Defense, Federal Aviation Administration, or other federal government entity;
11. Cleaning of electrical and electronic components;
12. Cleaning of high-precision optics;
13. Cleaning of equipment which comes into contact, in both their manufacturing and their end uses, with resins, coatings, inks, and adhesives, such as mixing, molding, and application equipment;
14. Stripping of cured coatings, ink, or adhesives;
15. Cleaning operations in printing pre-press areas, including the cleaning of film processors, film cleaning, and plate cleaning; or
16. Cleaning of plastic-based or vinyl-based substrates for use in the screen printing process when using ultraviolet (UV) curable ink and coatings systems.

### **36.7 Compliance Schedule**

- A. Unless otherwise specified compliance with the provisions of this regulation shall be achieved by the following dates:
  1. Solvent cleaning machines that commenced construction or reconstruction before November 29, 1993, shall achieve compliance with this regulation by January 1, 1997.
  2. Solvent cleaning machines that commenced construction or reconstruction on or after November 29, 1993, shall achieve compliance with this regulation immediately upon startup or by April 8, 1996, whichever is later.

3. Any batch vapor cleaning machine with a solvent/air interface that uses trans 1,2-dichloroethene or n-propyl bromide shall achieve compliance with §§ 36.10(C), 36.10(F), and 36.10(G) of this Part immediately upon first use of that solvent or by April 9, 2009, whichever is later.
- B. Facilities complying with the facility wide emissions limits for hazardous air pollutants in § 36.8(Q) of this Part, shall achieve compliance by the following dates:
1. Solvent cleaning machines that commenced construction or reconstruction on or before August 17, 2006, shall achieve compliance with the facility wide emissions standards for hazardous air pollutants in § 36.8(Q) of this Part, by May 3, 2010.
  2. Solvent cleaning machines that commenced construction or reconstruction on or after August 17, 2006, shall achieve compliance with the facility wide emissions standards for hazardous air pollutants in § 36.8(Q) of this Part, by May 3, 2007 or immediately upon startup, whichever is later.

### **36.8 General Requirements for Solvent Cleaning Machines**

- A. Equipment covers and dipping or rotating baskets must be constructed of nonporous or nonabsorbent material. Covers must form a tight seal with the sides of the solvent cleaning machine and have no gaps or holes.
- B. When the solvent cleaning machine cover is open, drafts at the same elevation as the tank lip must not be greater than forty (40) m/min. (130 ft/min.) when measured 1 to 2 meters (3 to 7 feet) upwind.
- C. Leaks must be repaired immediately or the solvent cleaning unit shut down.
- D. Equipment used in solvent cleaning must display a conspicuous summary of proper operating procedures consistent with minimizing emissions of organic solvents.
- E. Any solvent spray must be a solid, fluid stream, which is delivered at a pressure no greater than ten (10) pounds per square inch (psi) and which does not cause excessive splashing. For purposes of this regulation, no solvent spray shall be an atomized or shower spray.
- F. Spills shall be wiped up immediately. The wipe rags shall be stored in covered containers meeting the specifications in § 36.8(L) of this Part.
- G. No porous or absorbent materials, such as sponges, fabrics, wood, or paper products, shall be placed in an organic cleaning machine.

- H. Parts baskets or parts shall be drained under the cover and shall not be removed from the cleaning machine for at least fifteen (15) seconds or until dripping ceases and the pieces are visually dry, whichever is longer.
- I. Parts having cavities or blind holes shall be tipped or rotated while draining before being removed from the vapor zone and shall be oriented for best drainage.
- J. All parts shall be oriented for best drainage.
- K. When solvent is added to or drained from a solvent cleaning machine, the solvent shall be transferred using threaded or other leakproof couplings and the end of the pipe in the solvent sump shall be located beneath the liquid solvent surface.
- L. Solvent, waste solvent, still bottoms, and sump bottoms must be stored in covered containers and waste solvent transferal or disposal must allow less than 20 percent (20%) of the waste solvent (by weight) to evaporate into the atmosphere. The closed containers may contain a device that allows for pressure relief, providing that the device does not allow liquid solvent to drain from the containers.
- M. Each solvent cleaning machine and related air pollution control equipment shall be maintained as recommended by the manufacturer of the equipment.
- N. Operators must receive training in proper solvent cleaning procedures and, if requested by representatives of the Department or the EPA during an inspection, must complete and pass the applicable sections of the test on those procedures in 40 C.F.R. § 63, Appendix A, Subpart T incorporated in § 36.4 of this Part.
- O. No work area fans shall be located and positioned so that they blow across the opening of a solvent cleaning machine.
- P. No degreaser units shall be located and positioned so that ventilation from an open window blows across the opening of the solvent cleaning machine.
- Q. Facility wide emissions of Hazardous Air Pollutants (HAPs) from organic solvent cleaning operations shall not exceed 1,500 pounds of any one (1) HAP or 4,000 pounds of any combination of HAPs per calendar month, based upon a 12-month rolling average unless a greater quantity of HAP emissions is allowed by an operating permit issued pursuant to [Part 29](#) of this Subchapter (Operating Permits). In no case shall emissions exceed the facility wide emission limits specified in 40 C.F.R. § 63.471, incorporated in § 36.4 of this Part.

### **36.9 Requirements for Batch Cold Cleaning Machine Operations**

- A. Cleaning machines shall be equipped with an attached cover that can be operated easily with one hand. Covers must be closed at all times except during

parts entry and removal. If the cold solvent cleaning machine is equipped with a lip exhaust, the cover shall be located below the lip exhaust.

- B. The solvent sump of a remote-reservoir batch cold solvent cleaning machine must be equipped with a tight-fitting cover that is kept closed at all times except during the cleaning of parts.
- C. One of the following techniques shall be used to control solvent emissions from batch cold cleaning operations:
  - 1. A freeboard ratio greater than or equal to 0.75; or
  - 2. Another system of equivalent control that is approved by the Director and the EPA. Requests for equivalency determinations for control of cleaning machines must be submitted and approved prior to startup of the cleaning machine. Requests shall include the following information:
    - a. A complete description of process and control equipment;
    - b. Testing procedures that will be used to demonstrate equivalency; and
    - c. The date, time and location of the equivalency test.
- D. If a flexible hose or flushing device is used, flushing shall be performed only within the freeboard zone of the cold solvent cleaning machine.
- E. When an air- or pump-agitated solvent bath is used, the agitator shall be operated so that a rolling motion of the solvent is produced and splashing against the tank or parts being cleaned does not occur.
- F. The height of solvent in a batch cold cleaner shall not exceed the manufacturer's fill-line for that machine.
- G. No cold cleaning operation shall use a solvent with a vapor pressure equal to or greater than 1.0 millimeters of mercury (mm Hg), measured at 20°C (68°F). The following are exempt from this requirement:
  - 1. A cold solvent cleaning machine with an internal volume of one (1) liter or less;
  - 2. A cold solvent cleaning machine used for special and extreme solvent cleaning, as defined in § 36.5(A)(37) of this Part, with the Director's approval;
  - 3. A cold solvent cleaning machine which cannot be operated safely using a solvent that complies with the vapor pressure limit in § 36.9(G) of this Part, with the Director's approval.

4. A cold solvent cleaning machine equipped with an air pollution control system with an overall VOC capture and control efficiency of ninety percent (90%) or greater, with the Director's approval.

### **36.10 Requirements for Batch Vapor Cleaning Machine Operations with Solvent/Air Interfaces**

- A. Vapor cleaning machines shall be equipped with a cover that can be easily operated without disturbing the vapor zone and that is attached to the vapor cleaning machine. Covers must be closed at all times except during parts entry and removal. Covers must be free of cracks, holes and other defects. If the batch vapor cleaning machine is equipped with a lip exhaust, the cover must be located below the lip exhaust.
- B. Each vapor cleaning machine shall be equipped with a primary condenser.
- C. Each vapor cleaning machine, except those exempted as specified in § 36.16 of this Part, which uses a solvent containing trichloroethylene, perchloroethylene, 1,1,1-trichloroethane, methylene chloride, chloroform, trans 1,2-dichloroethene, n-propyl bromide, or carbon tetrachloride shall be equipped with an automated parts handling system, such as, but not limited to, a hoist or conveyor, that maintains a vertical conveyor speed of less than two (2) inches per second (10 feet per minute).
- D. Each vapor cleaning machine must be equipped with the following safety switches:
  1. A condenser flow switch and thermostat to shut off the heat to the solvent if the condenser coolant is not circulating; and
  2. A vapor level control thermostat to shut off the heat when the vapor level rises above the height of the primary cooling coils; and
  3. If the cleaning machine is equipped with a spray apparatus, a spray safety switch to shut off the spray pump if the vapor level drops more than four (4) inches (10 cm) from the bottom of the primary condenser coil and to prevent spraying outside the vapor level; and
  4. A low solvent level safety switch to shut off the heating element if it should become exposed.
- E. Each vapor cleaning machine shall have a freeboard ratio of at least 0.75.
- F. Any vapor cleaning machine that has a solvent/air interface of thirteen (13) square feet (1.21 square meters) or less and uses a solvent containing trichloroethylene, perchloroethylene, 1,1,1-trichloroethane, methylene chloride, chloroform, trans 1,2-dichloroethene, n-propyl bromide, or carbon tetrachloride must be equipped with one of the following control combinations:

1. Refrigerated freeboard chiller and superheated vapor system; or
  2. Refrigerated freeboard chiller and freeboard ratio of at least 1.0; or
  3. Refrigerated freeboard chiller and carbon adsorber; or
  4. Refrigerated freeboard chiller and dwell; or
  5. Another system of equivalent control that is approved by the Director and the EPA. Requests for equivalency determinations, must be submitted and approved prior to startup of the cleaning machine. Requests shall include the following information:
    - a. A complete description of process and control equipment;
    - b. Testing procedures that will be used to demonstrate equivalency; and
    - c. The date, time and location of the equivalency test.
- G. Any vapor cleaning machine that has a solvent/air interface of greater than thirteen (13) square feet (1.21 square meters) and uses a solvent containing trichloroethylene, perchloroethylene, 1,1,1-trichloroethane, methylene chloride, chloroform, trans 1,2-dichloroethene, n-propyl bromide, or carbon tetrachloride must be equipped with one of the following control combinations:
1. Refrigerated freeboard chiller, freeboard ratio of at least 1.0, and superheated vapor system; or
  2. Refrigerated freeboard chiller, superheated vapor system, and carbon adsorber; or
  3. Another system of equivalent control that is approved by the Director and the EPA. Requests for equivalency must be submitted and approved prior to startup of the cleaning machine. Requests shall include the following information:
    - a. A complete description of process and control equipment;
    - b. Testing procedures that will be used to demonstrate equivalency; and
    - c. The date, time and location of the equivalency test.
- H. Pieces shall be held in the vapor zone for at least thirty (30) seconds or until condensation ceases, whichever is longer.
- I. The workload shall not occupy more than half of the cleaning machine's open top area.

- J. The vapor level shall not rise or drop more than four (4) inches (10 cm) when the workload enters or is removed from the vapor zone.
- K. Sprays shall be used only within the vapor zone.
- L. Cleaning machines shall be operated so that water cannot be visually detected in the solvent exiting the water separator.
- M. Each cleaning machine that uses a lip exhaust shall be designed and operated to route all collected solvent vapors through a properly operated and maintained carbon adsorber that meets the requirements of § 36.13(A)(5) of this Part.
- N. The exhaust ventilation rate shall not exceed twenty (20) m<sup>3</sup>/min per m<sup>2</sup> (65 cfm per ft<sup>2</sup>) of solvent/air interface, unless necessary to meet OSHA requirements. If a carbon adsorber is used to meet the requirements of §§ 36.10(F) or (G) of this Part, the exhaust ventilation rate shall be at least fifteen (15) m<sup>3</sup>/min per m<sup>2</sup> (50 cfm per ft<sup>2</sup>) of solvent/air interface.
- O. During startup of each vapor cleaning machine, the primary condenser shall be turned on before the sump heater.
- P. During shutdown of each vapor cleaning machine, the sump heater shall be turned off and the solvent vapor layer allowed to collapse before the primary condenser is turned off.
- Q. To minimize solvent carry-out, pieces shall be removed from the vapor cleaning machine at a rate less than two (2) inches per second (10 feet per minute).

### **36.11 Requirements for In-Line Cleaning Machine Operations**

- A. Cleaning machines must be equipped with covers that completely cover machine openings. Covers must be in place at all times when the conveyors and exhausts are not being operated. If the cleaning machine is equipped with a lip exhaust, the cover must be located below the lip exhaust.
- B. Each in-line vapor cleaning machine shall have a primary condenser.
- C. The automated parts handling system shall move parts at a speed of no more than two (2) inches per second (10 feet per minute).
- D. The following safety switches must be installed and operated:
  - 1. A condenser flow switch to shut off the heat if the condenser coolant is not circulating; and
  - 2. A vapor level control thermostat to shut off the heat when the vapor level rises above the height of the primary cooling coils; and



3. If the cleaning machine is equipped with a spray apparatus, a spray safety switch to shut off the spray pump or conveyor if the vapor level drops more than four (4) inches (10 cm) from the bottom of the primary condenser coil and to prevent spraying outside the vapor level; and
  4. A low solvent level safety switch to shut off the heating element if it should become exposed.
- E. Each in-line cleaning machine shall have a freeboard ratio of at least 0.75.
- F. Each in-line cleaning machine must be equipped with a drying tunnel, a rotating (tumbling) basket, or another device that prevents cleaned pieces from carrying solvent liquid or vapor out of the unit.
- G. Any in-line cleaning machine installed before November 29, 1993, must be equipped with one of the following control combinations:
1. Refrigerated freeboard chiller and freeboard ratio of at least 1.0; or
  2. Refrigerated freeboard chiller and dwell; or
  3. Carbon adsorber and dwell; or
  4. Another system of equivalent control system that is approved by the Director and the EPA. Requests shall include the following information:
    - a. A complete description of process and control equipment;
    - b. Testing procedures that will be used to demonstrate equivalency; and
    - c. The date, time and location of the equivalency test.
- H. Any in-line cleaning machine installed on or after November 29, 1993, must be equipped with and operate one of the following control combinations:
1. Refrigerated freeboard chiller and a superheated vapor system; or
  2. Refrigerated freeboard chiller and carbon adsorber; or
  3. Another system of equivalent control that is approved by the Director and the EPA. Requests for equivalency determinations for control of cleaning machines installed on or after November 29, 1993 must be submitted and approved prior to startup of the cleaning machine. Requests shall include the following information:
    - a. A complete description of process and control equipment;

- b. Testing procedures that will be used to demonstrate equivalency; and
  - c. The date, time and location of the equivalency test.
- I. The size of entrance and exit openings shall be minimized so that there is a clearance of no more than four (4) inches on each side between the largest piece cleaned and the edges of the opening of the cleaning machine.
- J. Each in-line cleaning machine that uses a lip exhaust shall be designed and operated to route all collected solvent vapors through a properly operated and maintained carbon adsorber that meets the requirements of § 36.13(A)(5) of this Part.
- K. The exhaust ventilation rate shall not exceed twenty (20) m<sup>3</sup>/min per m<sup>2</sup> (65 cfm per ft<sup>2</sup>) of solvent/air interface, unless necessary to meet OSHA requirements. If a carbon adsorber is used to meet the requirements of §§ 36.11(G) or (H) of this Part, the exhaust ventilation rate shall be at least fifteen (15) m<sup>3</sup>/min per m<sup>2</sup> (50 cfm per ft<sup>2</sup>) of solvent/air interface.
- L. The cleaning machine shall be operated so that water cannot be visually detected in the solvent exiting the water separator.
- M. During startup of each vapor in-line cleaning machine, the primary condenser shall be turned on before the sump heater.
- N. During shutdown of each vapor in-line cleaning machine, the sump heater shall be turned off and the solvent vapor layer allowed to collapse before the primary condenser is turned off.
- O. Any spraying operations shall be done only within the vapor zone or within a section of the in-line cleaning machine that is not directly exposed to the room air.

### **36.12 Requirements for Batch Vapor Cleaning Machine Operations without Solvent/Air Interfaces**

- A. The owner or operator of a batch vapor cleaning machine which does not have a solvent/air interface must comply with the requirements specified below.
  - 1. A log of solvent additions and deletions shall be maintained for each cleaning machine.
  - 2. Solvent emissions from each cleaning machine which does not have a solvent/air interface shall not exceed the amount calculated using Equation 1 in § 36.12(A)(2) of this Part:

Equation 1

$$EL = 85.5 * (Vol)^{0.6}$$

Where:

EL = the average monthly emission limit for any three-month period(pounds/month)

Vol = the cleaning capacity (volume) of the cleaning machine (cubic feet)

3. The owner or operator of a batch vapor cleaning machine that does not have a solvent/air interface shall demonstrate compliance with the emission limit calculated with Equation 1 in § 36.12(A)(2) of this Part on the 15th day of every month using the following procedure:
  - a. A fill-line must be marked on the first month the measurements are taken. Solvent shall be added to bring the level to the same fill-line on the first operating day of each month thereafter; and
  - b. Confirm that only clean liquid solvent is in the vapor cleaning machine; and
  - c. Using the records of solvent additions and deletions for the previous month required in § 36.12(A)(1) of this Part and Equation 2 in § 36.12(A)(3)(c) of this Part, determine monthly solvent emissions:

Equation 2

$$E = SA - LSR - SSR$$

Where:

E = the total solvent emissions for the previous month (pounds)

SA = the total amount of solvent added to the cleaning machine during the previous month (pounds)

LSR = the total amount of liquid solvent removed from the cleaning machine during the previous month (pounds)

SSR = the total amount of solid waste removed from the cleaning machine during the previous month (pounds)

- d. The SSR shall be determined using either engineering calculations or 40 C.F.R. § 60, Appendix A-7, Method 25d, incorporated in § 36.4 of this Part.
- e. The average monthly emissions for the previous three-month period shall be calculated according to Equation 3 in § 36.12(A)(3)(e) of this Part:

Equation 3

$$E_{3\text{-month}} = \frac{E_1 + E_2 + E_3}{3}$$

3

Where:

$E_{3\text{-month}}$  = average monthly solvent emissions during the previous three-month period

$E_1, E_2, E_3$  = solvent emissions for each of the three (3) most recent months, calculated using Equation 2 in § 36.12(A)(3)(c) of this Part.

- f. The cleaning machine is in compliance with the average monthly emission limit if  $E_{3\text{-month}}$ , calculated using Equation 3 in § 36.12(A)(3)(e) of this Part, is less than or equal to EL, calculated according to Equation 1 in § 36.12(A)(2) of this Part.

### **36.13 Compliance Specifications and Monitoring Requirements for Solvent Cleaning Machines**

- A. The owner or operator of a solvent cleaning machine shall monitor the following parameters and record the results:
  - 1. The cover of each batch vapor or in-line cleaning machine shall be visually inspected monthly to confirm that it is opening and closing properly, that it completely covers the cleaning machine's openings when closed, and that it is free of cracks, holes, and other defects.

2. The speed of automated parts handling systems shall be monitored according to the following specifications:
  - a. Determine the speed by measuring the time it takes for the conveyor to travel a measured distance. The speed is the distance in inches divided by the time in seconds, or the distance in feet divided by the time in minutes; and
  - b. Monitoring shall be performed on a monthly basis. If no exceedances of the speed requirements specified in §§ 36.10(C) and 36.11(C) of this Part occur in a year, then future hoist speed monitoring may be conducted on a quarterly basis; and
  - c. If a speed greater than that specified in §§ 36.10(C) and 36.11(C) of this Part is measured, the automated parts handling system must be adjusted so that this specification is met; and
  - d. If a speed greater than that specified in §§ 36.10(C) and 36.11(C) of this Part is measured while monitoring is being conducted on a quarterly basis, then monthly monitoring must be resumed until another year passes without any exceedances.
3. If a refrigerated freeboard chiller is used, the temperature at the coldest point of the centroid of the chilled air blanket shall be no greater than thirty percent (30%) of the solvent's boiling point, measured in °F, and shall be monitored weekly according to the following specifications:
  - a. The temperature shall be monitored while the batch vapor or in-line cleaning machine is operating in the idling mode; and
  - b. A thermometer or thermocouple shall be used to measure the temperature at the centroid of the air blanket; and
  - c. If the temperature at the coldest point of the centroid of the air blanket exceeds thirty percent (30%) of the solvent's boiling point, measured in °F, the chiller shall be adjusted so that this specification is met.
4. If a superheated vapor system is used, the temperature of the solvent vapor at the centroid of the superheated vapor zone shall be maintained at least ten degrees Fahrenheit (10°F) above the solvent's boiling point and shall be monitored weekly according to the following specifications:
  - a. The temperature shall be monitored while the batch vapor or in-line cleaning machine is operating in the idling mode; and

- b. A thermometer or thermocouple shall be used to measure the temperature at the centroid of the superheated solvent vapor zone; and
  - c. If the temperature at the centroid of the air blanket is less than ten degrees Fahrenheit (10°F) above the solvent's boiling point, the system shall be adjusted so that this specification is met.
5. If a carbon adsorber is used, the concentration of solvent in the exhaust shall not exceed twenty-five (25) ppm. Compliance with this requirement shall be determined using the following methods:
- a. Within sixty (60) days of initial startup of the carbon adsorber, the solvent concentration in the carbon adsorber exhaust shall be tested using 40 C.F.R § 60, Appendix A-7 Method 25, incorporated in § 36.4 of this Part. Each test shall consist of three (3) separate one-hour samples, and the arithmetic mean shall be used to determine initial compliance. The results shall be reported to the Office of Air Resources within sixty (60) days of the test.
  - b. Continuing compliance shall be determined weekly using the following procedure:
    - (1) The concentration of solvent in the exhaust shall be measured while the cleaning machine is in the working mode and is exhausting to the carbon adsorber; and
    - (2) An easily accessible sampling port shall be provided that is located on the exhaust outlet at least eight (8) stack or duct diameters downstream and two (2) stack or duct diameters upstream of any flow disturbance such as a bend, expansion, contraction, or outlet. The sampling port must not be downstream of any other inlet; and
    - (3) Solvent concentration shall be measured at the sampling port using a colorimetric detector tube capable of detecting twenty-five (25) ppm with an accuracy of  $\pm$  twenty-five percent (25%) or better; and
    - (4) Colorimetric detector tubes must be used according to the manufacturer's instructions; and
    - (5) If the carbon adsorber's exhaust exceeds twenty-five (25) ppm then the desorption cycle shall be adjusted or the carbon canister replaced in order to bring the exhaust concentration below twenty-five (25) ppm; and

- (6) If desorption of the carbon adsorber is required, the carbon adsorber shall not be bypassed during the desorption cycle.
6. If dwell or a superheated vapor system is used, the actual dwell time shall equal or exceed the minimum dwell time. Minimum and actual dwell time shall be determined using the following procedures:
  - a. For units without a superheated vapor system, the minimum dwell time shall be determined for each part type or parts basket or for the most complex part type or parts basket using the following procedure:
    - (1) Determine the amount of time necessary for the part or parts basket to cease dripping once placed in the vapor zone. The part or parts basket used for this determination must be at room temperature when placed in the vapor zone; and
    - (2) The minimum dwell time required for parts to remain in the freeboard zone above the vapor zone is calculated as thirty-five percent (35%) of the time determined in § 36.13(A)(6)(a)((1)) of this Part.
  - b. The minimum dwell time for a cleaning machine equipped with a superheated vapor system shall be determined according to the specifications of the manufacturer of the control equipment; and
  - c. On a monthly basis, the actual dwell time that parts are held in the freeboard zone above the vapor zone shall be measured; and
  - d. If the actual dwell time is less than the minimum dwell time determined using the applicable procedure in §§ 36.13(A)(6)(a) or (b) of this Part for a particular part or parts basket, the automatic parts handling system must be adjusted so that this specification is met.
7. Safety switches must be tested semiannually.
8. Alternative monitoring procedures may be used if approved by the Director and the EPA.

### **36.14 Recordkeeping for Solvent Cleaning Machines**

- A. The owner or operator of a batch vapor or in-line organic cleaning machine shall maintain the following records for the lifetime of the cleaning unit:
  1. Owner's manuals or written maintenance and operating procedures for the cleaning machine and air pollution control equipment; and

2. Date of installation of the cleaning machine and its control devices; and
  3. Records of the content of each solvent used in the cleaning machine; and
  4. If dwell or superheated vapor is used, the minimum dwell times determined using the procedures specified in §§ 36.13(A)(6)(a) or (b) of this Part; and
  5. Records of training provided to solvent cleaning machine operators.
- B. The owner or operator of a batch vapor or in-line organic cleaning machine shall maintain the following records for a period of five (5) years:
1. Amount and type of solvent used in each cleaning machine each year; and
  2. Amount of trichloroethylene, perchloroethylene and methylene chloride used in each cleaning machine each month; and
  3. Results of monitoring required under § 36.13 of this Part; and
  4. Information on the actions taken to comply with §§ 36.13(A)(2)(c), 36.13(A)(3)(c), 36.13(A)(4)(c), 36.13(A)(5)(b)((5)), and 36.13(A)(6)(d) of this Part. This includes records of written or verbal orders for replacement parts, a description of the repairs made, and the additional monitoring conducted to demonstrate that monitored parameters have returned to acceptable levels; and
  5. The dates that carbon adsorber beds are desorbed; and
  6. The dates that the carbon adsorber bed is changed; and
  7. The date and type of each equipment malfunction (or leak) and the date it is repaired; and
  8. The date and time of each incidence where a cover was not in place, as specified in §§ 36.10(A) and 36.11(A) of this Part; and
  9. If any safety switches are activated, the date and the reason why the switch was triggered;
  10. The results of semiannual safety switch tests; and
  11. For batch vapor machines which have been exempted from the automated parts handling system requirements of § 36.10(C) of this Part, a log of additions and deletions of solvent from the exempted vapor cleaning machine, as required in § 36.16(C) of this Part.



- C. The owner or operator of a batch vapor cleaning machine without a solvent/air interface complying with the emission limits in § 36.12 of this Part must maintain the following records for five (5) years:
1. A log of solvent additions and deletions, as required in § 36.12(A)(1) of this Part; and
  2. Monthly emissions, average monthly emissions for each three-month period, and the calculations of those values according to the procedure specified in § 36.12(A)(3) of this Part; and
  3. The amount of solvent in the solid waste removed from the cleaning machine, calculated using the procedure specified in § 36.12(A)(3)(d) of this Part; and
  4. The method used to determine the cleaning capacity of the cleaning machine.
- D. The owner or operator of a batch cold solvent cleaning machine shall maintain records of training provided to cleaning machine operators for the lifetime of the unit and shall maintain the following records for a period of five (5) years:
1. Amount and type of solvent used in each cleaning machine each year and;
  2. The date and type of each equipment malfunction (or leak) and the date it is repaired and;
  3. The date and time of each incidence where a cover was not in place, as specified in § 36.9(A) of this Part and;
  4. The amount of trichloroethylene, perchloroethylene and methylene chloride used in each cleaning machine each month.
- E. The owner or operator of a cold solvent cleaning machine shall maintain, for a period of not less than two (2) years, written records of each purchase of solvents containing volatile organic compounds for cold cleaning, including the following information:
1. The name and address of the solvent supplier.
  2. The type of solvent, including the product or vendor identification number.
  3. The vapor pressure of the solvent measured in mm Hg at twenty degrees Celsius (20°C) (sixty-eighty degrees Fahrenheit (68°F))

4. An invoice, bill of sale, certificate that corresponds to a number of sales, Material Safety Data Sheet (MSDS), or other documentation acceptable to the Department may be used to comply with this Part.
- F. All records specified in §§ 36.14(A) through (E) of this Part shall be made available to the Department or the EPA for inspection upon request.

## **36.15 Reporting Requirements for Solvent Cleaning Machines**

### **36.15.1 Initial Notification Report**

- A. The owner or operator of an organic solvent cleaning machine that uses a solvent containing trichloroethylene, perchloroethylene, 1,1,1-trichloroethane, methylene chloride, chloroform, or carbon tetrachloride must submit an Initial Notification Report to the Office of Air Resources one hundred twenty (120) days before startup of the cleaning machine. This report must include the following information:
1. The name and address of owner or operator; and
  2. The address of the solvent cleaning machine(s); and
  3. The type of solvent cleaning machine (cold, batch vapor, or in-line), the solvent/air interface area, and the type of existing controls; and
  4. The facility's anticipated compliance approach for each solvent cleaning machine; and
  5. The expected commencement date of the construction or reconstruction; and
  6. The expected completion date of the construction or reconstruction; and
  7. The anticipated date of startup of the solvent cleaning machine; and
  8. An estimate of the amount of solvent which will be used annually in each solvent cleaning machine.
- B. The owner or operator of an organic solvent cleaning machine that uses a solvent containing trans 1,2-dichloroethene or n-propyl bromide must submit an Initial Notification Report to the Office of Air Resources one hundred and twenty (120) days before startup of the cleaning machine using that. This report must include the following information:
1. The name and address of the owner or operator; and
  2. The address of the solvent cleaning machine(s); and

3. The type of solvent cleaning machine used (cold, batch vapor, or in-line), the solvent/air interface area, and the type of controls used; and
4. The facility's anticipated compliance approach and the anticipated date of compliance for each solvent cleaning machine; and
5. An estimate of the amount of solvent to be used annually in each solvent cleaning machine.

### **36.15.2 Compliance Notification Report**

- A. The owner or operator of an organic solvent cleaning machine must submit a Compliance Notification Report to the Office of Air Resources within sixty (60) days after startup of the cleaning machine.
- B. The owner or operator of an organic solvent cleaning machine that uses a solvent containing trans 1,2-dichloroethene or n-propyl bromide must submit a Compliance Notification Report to the Office of Air Resources within thirty (30) days after startup of the cleaning machine using that solvent.
- C. Compliance Notification Reports shall contain the following information:
  1. The name and address of the owner or operator; and
  2. The address of the solvent cleaning machine; and
  3. A statement, signed by the owner or operator, stating that each cleaning machine is in compliance with this regulation; and
  4. The control equipment used to achieve compliance for each cleaning machine; and
  5. If a refrigerated freeboard chiller or superheated vapor is used, the dates and results of weekly temperature monitoring for the first month after the compliance date; and
  6. If a carbon adsorber is used, the date and results of weekly measurements of the solvent concentration in the exhaust for the first month after the compliance date; and
  7. If dwell is used, the minimum dwell times and the actual dwell times measured for the first month; and
  8. For vapor cleaning machines without solvent/air interfaces, a description of the method used to determine the cleaning capacity of the machine and the results of the monthly solvent emissions calculation for the month beginning with the compliance date.

### **36.15.3 Exceedances and Exceedance Reports**

- A. The following occurrences are considered exceedances and must be reported on the facility's Exceedance Report:
1. An exceedance has occurred if the requirement in § 36.13(A)(5)(b)((6)) of this Part has not been met; or
  2. An exceedance has occurred if the requirements in §§ 36.13(A)(1) through (6) of this Part are not met. Once adjustments or repairs have been made, parameters must be remeasured to demonstrate that the parameter is within the acceptable limits; or
  3. If a vapor cleaning machine does not have a solvent/air interface, an exceedance has occurred if the three-month average monthly emission limit is not met in any month;
  4. If a vapor cleaning machine has been exempted from the automated parts handling system requirements, an exceedance has occurred if the three-month emission limit, S, as calculated using Equation 4 in § 36.16(A) of this Part, is not met in any month.
  5. An exceedance has occurred if emissions exceed the facility wide emission limits specified in 40 C.F.R. § 63.471, incorporated in § 36.4 of this Part.
- B. The owner or operator of a batch vapor or in-line cleaning machine shall initially submit Exceedance Reports semiannually, except when the Department determines on a case-by-case basis that more frequent reporting is necessary.
- C. If an exceedance occurs, Exceedance Reports must be submitted quarterly until a request to reduce the reporting frequency as specified in § 36.15.3(F) of this Part has been approved.
- D. The Exceedance Report shall be received by the thirtieth (30<sup>th</sup>) day following the end of each exceedance reporting period. Initial reporting periods are January 1 - June 30 and July 1 - December 31.
- E. Exceedance Reports shall include the following information for actions taken to comply with §§ 36.13(A)(1) through (6) of this Part:
1. Records of written or verbal orders for replacement parts, a description of the repairs made, additional monitoring to demonstrate that monitored parameters have returned to acceptable levels; and
  2. If an exceedance has occurred, the reason for the exceedance and a description of the actions taken to correct the exceedance; and

3. If an exceedance has occurred, the dates the cleaning machine or control equipment was repaired, retested, and returned to service; and
  4. If an exceedance has not occurred or the cleaning and control equipment has not been inoperative, repaired, or adjusted, this information must be stated in the report.
- F. If a facility is required to submit Exceedance Reports on a quarterly (or more frequent) basis, the submittal frequency may be reduced to semiannual with the Director's approval, if the following requirements are achieved:
1. The facility has demonstrated a full year of compliance without an exceedance; and
  2. The owner or operator continues to comply with the recordkeeping and monitoring requirements specified in this regulation.

#### **36.15.4 Annual Compliance Reports**

- A. The owner or operator of a batch vapor or in-line solvent cleaning machine shall submit an annual report to the Office of Air Resources by February 1 of each year for the previous calendar year. This report shall include the following:
1. A signed statement from the facility owner or their designee stating that, "All operators of solvent cleaning machines have received training on the proper operation of solvent cleaning machines and their control devices sufficient to pass the test required in 40 C.F.R. § 63, Appendix A, Subpart T" incorporated in § 36.4 of this Part.
  2. An estimate of solvent consumption for each solvent cleaning machine during the reporting period.
  3. For each machine complying with § 36.12 of this Part, the average monthly solvent consumption and the average monthly emissions for each consecutive three-month period, calculated using Equation 3 in § 36.12(A)(3)(e) of this Part.
  4. For each batch vapor cleaning machine that has received an exemption from the automated parts handling system requirements, as specified in § 36.16 of this Part, the solvent emissions during each three-month period, calculated using Equation 5 in § 36.16(D)(3) of this Part.
- B. The owner or operator of a facility which uses a solvent containing trichloroethylene, perchloroethylene or methylene chloride in a solvent cleaning machine shall report its annual emissions of those solvents in writing to the Office of Air Resources on or before April 15 of the following calendar year. The report shall be signed by the owner or operator of the facility and can be fulfilled by submitting the reports required in [Part 14](#) of this Subchapter (Record Keeping

and Reporting). If annual emissions of those solvents from solvent cleaning operations at a facility exceed fifty percent (50%) of the facility wide limits established in 40 C.F.R. § 63.471, incorporated in § 36.4 of this Part, in any year, the facility must thereafter fulfill all applicable recordkeeping and reporting requirements in 40 C.F.R. § 63.460 and 40 C.F.R. § 63.471, incorporated in § 36.4 of this Part.

### **36.16 Exemption from Automated Parts Handling System Requirement for Solvent Cleaning Machines**

- A. The owner or operator of a batch vapor cleaning machine may apply for an exemption from the automated parts handling system requirement in § 36.10(C) of this Part. Exemptions shall limit solvent emissions from the cleaning machine during any three-month period after the compliance date to the amount calculated using Equation 4 in § 36.16(A) of this Part:

Equation 4

$$S = 92 * A$$

Where:

S = The amount of solvent, in pounds, that can be emitted from that cleaning machine during any three-month period after start-up.

A = The area of the solvent/air interface for that machine, in square feet.

- B. Exemption requests shall be submitted to the Office of Air Resources thirty (30) days prior to startup and shall include the following information:
1. The name and address of the facility; and
  2. An identification of the vapor cleaning machine for which the exemption is being requested; and
  3. The area of the solvent/vapor interface, in square feet, of the vapor cleaning machine; and
  4. The three-month emission limit, S, calculated using Equation 4 in § 36.16(A) of this Part; and
  5. A statement, signed by the owner or operator of the facility, that emissions of solvent from the vapor cleaning machine will not exceed the three-month emission limit, S, during any three-month period after start-up.

- C. The owner or operator of a facility which is granted an exemption to the requirements of § 36.10(C) of this Part shall maintain a log of additions and deletions of solvent from the exempted vapor cleaning machine.
- D. The owner or operator of a facility which is granted an exemption to the requirements of § 36.10(C) of this Part shall demonstrate compliance with the three-month emission limit, S, calculated using Equation 4 in § 36.15(A) of this Part on the first operating day of every month using the following procedure:
1. A fill-line must be marked on the machine on the first month the measurements are taken; and
  2. On the first day of each month thereafter, the machine shall be filled to the fill-line with clean liquid solvent; and
  3. On the first day of each month, using the log of solvent additions and deletions required in § 36.16(C) of this Part, calculate solvent emissions for the most recent three-month period with Equation 5 in § 36.16(D)(3) of this Part:

Equation 5

$$EA = SA - SR$$

Where:

EA = solvent emissions during the three-month period (pounds)

SA = the total amount of solvent added to the cleaning machine during the three-month period (pounds)

SR = the total amount of solvent removed from the cleaning machine during the three-month period (pounds)

4. The cleaning machine is in compliance with the three-month emission limit if solvent emissions in the three-month period, EA, calculated using Equation 5 in § 36.16(D)(3) or this Part, are less than or equal to S, calculated according to Equation 4 in § 36.16(A) of this Part.
- E. If the three-month emission limit, S, is exceeded two (2) times, an automated parts handling system must be installed within sixty (60) days of the end of the three-month period in which the second exceedance occurred.

## **36.17 Requirements for Industrial Cleaning Solvents**

### **36.17.1 Compliance Standards**

- A. The owner or operator of a source subject to § 36.17 of this Part shall limit VOC emissions from the use, handling, storage, and disposal of industrial cleaning solvents and shop towels by implementing the following work practices:
1. Store all VOC-containing industrial cleaning solvents, used shop towels and related waste materials in closed containers;
  2. Ensure that mixing and storage containers used for VOC-containing industrial cleaning solvents are kept closed at all times except when depositing or removing these materials;
  3. Minimize spills of VOC-containing industrial cleaning solvents and waste materials and clean up spills immediately;
  4. Convey VOC-containing industrial cleaning solvents and related waste materials from one location to another in closed containers or pipes;
  5. Minimize VOC emissions from cleaning of storage, mixing and conveying equipment; and
  6. Minimize air circulation around industrial solvent cleaning operations.
- B. All spray guns must be cleaned using one of the following methods:
1. A fully enclosed cleaning system that is kept closed when not in use; or
  2. Flushing the spray gun without atomizing the solvent and paint residue and discharging the solvent and paint residue into a container that is kept closed when not in use; or
  3. Hand cleaning of the parts of a disassembled spray gun in a container of solvent that is kept closed when not in use.
- C. All spent solvent, shop towels and paint residue must be kept in an enclosed container and disposed of in accordance with applicable hazardous waste regulations.
- D. The owner or operator of a source subject to § 36.17 of this Part shall limit VOC emissions by utilizing one or more of the following methods for each applicable cleaning activity:
1. Using industrial cleaning solvents with a maximum VOC content limit of fifty (50) grams VOC per liter, equivalent to 0.42 lb/gal;
  2. Using industrial cleaning solvents with a composite vapor pressure of eight (8.0) millimeters or less of mercury (mm Hg), measured at 20 °C (68 °F); or



3. Using an emission control system with an overall control efficiency of at least eighty-five percent (85%).

### **36.17.2 Recordkeeping**

- A. An owner or operator conducting industrial cleaning activities shall maintain monthly purchase or use records of all industrial cleaning solvents, including the following information:
  1. Name and description of each industrial cleaning solvent;
  2. VOC content and/or vapor pressure of each industrial cleaning solvent either as supplied or as applied;
  3. Amount of each industrial cleaning solvent purchased or used;
  4. Safety data sheets for each industrial cleaning solvent;
  5. If applicable, documentation of control device efficiency and capture efficiency, using an applicable EPA reference method as approved by the Office of Air Resources and EPA; and
  6. If applicable, date and type of maintenance performed on air pollution control equipment.
- B. Any owner or operator conducting industrial solvent cleaning activities whose actual emissions before controls are less than or equal to 2.7 tons of VOC for any consecutive 12-month period calendar year shall maintain materials purchase or use records sufficient to verify this.
- C. An owner or operator conducting industrial solvent cleaning exempted by § 36.6(D) of this Part shall maintain records sufficient to verify the exemption.
- D. All records required by § 36.17 of this Part shall be maintained for a minimum of five (5) years and shall be provided to the Office of Air Resources and or EPA upon request.

**250-RICR-120-05-44**

## **TITLE 250 – DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

### **CHAPTER 120 – AIR RESOURCES**

#### **SUBCHAPTER 05 – AIR POLLUTION CONTROL**

PART 44 – Control of Volatile Organic Compounds from Adhesives and Sealants

### **44.1 Purpose and Authority**

#### **44.1.1 Purpose**

The purpose of this regulation is to limit the emissions of volatile organic compounds from adhesives and sealants.

#### **44.1.2 Authority**

These regulations are authorized pursuant to R.I. Gen. Laws § 42-17.1-2(19) and R.I. Gen. Laws Chapter 23-23, and have been promulgated pursuant to the procedures set forth in the Rhode Island Administrative Procedures Act, R.I. Gen. Laws Chapter 42-35.

### **44.2 Application**

The terms and provisions of this regulation shall be liberally construed to permit the Department to effectuate the purposes of state law, goals and policies.

### **44.3 Severability**

If any provision of this regulation or the application thereof to any person or circumstance, is held invalid by a court of competent jurisdiction, the validity of the remainder of the regulation shall not be affected thereby.

### **44.4 Incorporated Materials**

- A. These regulations hereby adopt and incorporate 40 C.F.R. § 60 Appendix A-7 Methods 24, 25, 25A, and 25B (2018) by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.
- B. These regulations hereby adopt and incorporate the American Society for Testing and Materials (ASTM) "D4457-85" (1996), "E260-96" (2011), "D3792-16" (2016), and "D2879-10" (2010) by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.

- C. These regulations hereby adopt and incorporate the California Air Resources Board (CARB) Method 100 (1997) by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.
- D. These regulations hereby adopt and incorporate the South Coast Air Quality Management District's "Method 304" (1996), "Method 316A" (1996), and "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems" (1989) by reference, not including any future editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.
- E. These regulations hereby adopt and incorporate the EPA Technical Document "Guidelines for Determining Capture Efficiency (1995)" by reference, not including any future editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.

#### **44.5 Definitions**

- A. Unless otherwise expressly defined in this section, the terms used in this regulation shall be defined by reference to [Part 0](#) of this Subchapter (General Definitions). As used in this regulation, the following terms shall, where the context permits, be construed as follows:
  - 1. "Acrylonitrile-butadiene-styrene welding adhesive" or "ABS welding adhesive" means any adhesive intended by the manufacturer to weld acrylonitrile-butadiene-styrene pipe, which is made by reacting monomers of acrylonitrile, butadiene and styrene.
  - 2. "Adhesive" means any chemical substance that is applied for the purpose of bonding two surfaces together other than by mechanical means.
  - 3. "Adhesive primer" means any product intended by the manufacturer for application to a substrate, prior to the application of an adhesive, to provide a bonding surface.
  - 4. "Aerosol adhesive" means an adhesive packaged as an aerosol product in which the spray mechanism is permanently housed in a non-refillable can designed for handheld application without the need for ancillary hoses or spray equipment.
  - 5. "Aerospace component" means the fabricated part, assembly of parts or completed unit of any aircraft, helicopter, missile, or space vehicle, including passenger safety equipment.
  - 6. "Architectural sealant" or "Primer" means any sealant or sealant primer intended by the manufacturer to be applied to stationary structures, including mobile homes, and their appurtenances. Appurtenances to an

architectural structure include, but are not limited to: hand railings, cabinets, bathroom and kitchen fixtures, fences, rain gutters and downspouts, and windows.

7. "Automotive glass adhesive primer" means an adhesive primer labeled by the manufacturer to be applied to automotive glass prior to installation of the glass using an adhesive/sealant. This primer improves the adhesion to pinch weld and blocks ultraviolet light.
8. "CARB" means the California Air Resources Board.
9. "Ceramic tile installation adhesive" means any adhesive intended by the manufacturer for use in the installation of ceramic tiles.
10. "Chlorinated polyvinyl chloride welding adhesive" or "CPVC welding adhesive" means an adhesive labeled for welding of chlorinated polyvinyl chloride plastic.
11. "Cleanup solvent" means a VOC-containing solvent used to remove a loosely held uncured adhesive or sealant from a substrate or to clean equipment used in applying an adhesive, a sealant or a primer.
12. "Computer diskette jacket manufacturing adhesive" means any adhesive intended by the manufacturer to glue the fold-over flaps to the body of a vinyl computer diskette jacket.
13. "Contact bond adhesive" means an adhesive that:
  - a. is designed for application to both surfaces to be bonded together, and
  - b. is allowed to dry before the two surfaces are placed in contact with each other, and
  - c. forms an immediate bond that is impossible, or difficult, to reposition after both adhesive-coated surfaces are placed in contact with each other, and
  - d. does not need sustained pressure or clamping of surfaces after the adhesive-coated surfaces have been brought together using sufficient momentary pressure to establish full contact between both surfaces. "Contact bond adhesive" does not include rubber cements that are primarily intended for use on paper substrates. "Contact bond adhesive" also does not include vulcanizing fluids that are designed and labeled for tire repair only.
14. "Cove base" means a flooring trim unit, generally made of vinyl or rubber, having a concave radius on one edge and a convex radius on the opposite

edge that is used in forming a junction between the bottom wall course and the floor or to form an inside corner.

15. “Cove base installation adhesive” means any adhesive intended by the manufacturer to be used for the installation of cove base or wall base on a wall or vertical surface at floor level.
16. “Cyanoacrylate adhesive” means any single-component reactive diluent adhesive that contains at least 85% by weight methyl, ethyl, methoxymethyl or other functional groupings of cyanoacrylate.
17. “Exempt compound” means any carbon-containing compound listed as an exemption to the definition of volatile organic compound (VOC) in [Part 0](#) of this Subchapter (General Definitions).
18. “Flexible vinyl” means non-rigid polyvinyl chloride plastic with at five percent by weight plasticizer content.
19. “Fiberglass” means a material consisting of extremely fine glass fibers.
20. “Indoor floor covering installation adhesive” means any adhesive intended by the manufacturer for use in the installation of wood flooring, carpet, resilient tile, vinyl tile, vinyl backed carpet, resilient sheet and roll or artificial grass. Adhesives used to install ceramic tile and perimeter bonded sheet flooring with vinyl backing onto a non-porous substrate, such as flexible vinyl, are excluded from this category.
21. “Laminate” means a product made by bonding two or more sheets or layers.
22. “Low-solids adhesive, sealant or primer” means any product that contains 120 grams or less of solids per liter of material.
23. “Marine deck sealant” or “marine deck sealant primer” means any sealant or sealant primer labeled for application to wooden marine decks.
24. “Medical equipment manufacturing” means the manufacture of medical devices, such as, but not limited to, catheters, heart valves, blood cardioplegia machines, tracheostomy tubes, blood oxygenators, and cardiatory reservoirs.
25. “Metal to urethane/rubber molding” or “Casting adhesive” means any adhesive intended by the manufacturer to bond metal to high density or elastomeric urethane or molded rubber materials, in heater molding or casting processes, to fabricate products such as rollers for computer printers or other paper handling equipment.

26. "Multipurpose construction adhesive" means any adhesive intended by the manufacturer for use in the installation or repair of various construction materials, including but not limited to drywall, subfloor, panel, fiberglass reinforced plastic (FRP), ceiling tile and acoustical tile.
27. "Nonmembrane roof installation/repair adhesive" means any adhesive intended by the manufacturer for use in the installation or repair of nonmembrane roofs and that is not intended for the installation of prefabricated single-ply flexible roofing membrane, including, but not limited to, plastic or asphalt roof cement, asphalt roof coating and cold application cement.
28. "Outdoor floor covering installation adhesive" means any adhesive intended by the manufacturer for use in the installation of floor covering that is not in an enclosure and that is exposed to ambient weather conditions during normal use.
29. "Panel installation" means the installation of plywood, pre-decorated hardboard (or tileboard), fiberglass reinforced plastic, and similar pre-decorated or non-decorated panels to studs or solid surfaces using an adhesive formulated for that purpose.
30. "Perimeter bonded sheet flooring installation" means the installation of sheet flooring with vinyl backing onto a nonporous substrate using an adhesive designed to be applied only to a strip of up to four inches wide around the perimeter of the sheet flooring.
31. "Plastic cement welding adhesive" means any adhesive intended by the manufacturer for use to dissolve the surface of plastic to form a bond between mating surfaces.
32. "Plastic cement welding adhesive primer" means any primer intended by the manufacturer for use to prepare plastic substrates prior to bonding or welding.
33. "Plasticizer" means a material, such as a high boiling point organic solvent, that is added to a hard plastic to increase its flexibility or pliability.
34. "Polyvinyl chloride welding adhesive" or "PVC welding adhesive" means any adhesive intended by the manufacturer for use in the welding of PVC plastic pipe.
35. "Porous material" means a substance that has tiny openings, often microscopic, in which fluids may be absorbed or discharged, including, but not limited to, wood, paper and corrugated paperboard.
36. "Propellant" means a fluid under pressure that expels the contents of a container when a valve is opened.

37. "Reactive diluent" means a liquid that is a reactive organic compound during application and one in that, through chemical and/or physical reactions, such as polymerization, twenty (20) percent or more of the reactive organic compound becomes an integral part of a finished material.
38. "Roadway sealant" means any sealant intended by the manufacturer for application to public streets, highways and other surfaces, including but not limited to curbs, berms, driveways and parking lots.
39. "Rubber" means any natural or manmade rubber substrate, including but not limited to, styrene-butadiene rubber, polychloroprene (neoprene), butyl rubber, nitrile rubber, chlorosulfonated polyethylene and ethylene propylene diene terpolymer.
40. "SCAQMD" means the South Coast Air Quality Management District, a part of the California Air Resources Board.
41. "Sealant primer" means any product intended by the manufacturer for application to a substrate, prior to the application of a sealant, to enhance the bonding surface.
42. "Sealant" means any material with adhesive properties that is formulated primarily to fill, seal, waterproof or weatherproof gaps or joints between two surfaces. Sealants include sealant primers and caulks. Sealers and other materials that are applied to a single substrate to protect or decorate are not "sealants."
43. "Sheet-applied rubber installation" means the process of applying sheet rubber liners by hand to metal or plastic substrates to protect the underlying substrate from corrosion or abrasion. These operations also include laminating sheet rubber to fabric by hand.
44. "Single-ply roof membrane" means a prefabricated single sheet of compounded synthetic material, such as ethylene-propylenediene monomer, polyvinyl chloride, thermal polyolefin or ketone ethylene ester that is applied in a single layer to a building roof.
45. "Single-ply roof membrane installation and repair adhesive" means any adhesive labeled for use in the installation or repair of single-ply roof membrane. Installation includes, as a minimum, attaching the edge of the membrane to the edge of the roof and applying flashings to vents, pipes and ducts that protrude through the membrane. Repair includes gluing the edges of torn membrane together, attaching a patch over a hole and reapplying flashings to vents, pipes or ducts installed through the membrane.

46. "Single-ply roof membrane adhesive primer" means any primer labeled for use to clean and promote adhesion of the single-ply roof membrane seams or splices prior to bonding.
47. "Single-ply roof membrane sealant" means any sealant labeled for application to single-ply roof membrane.
48. "Solicit" means to require for use or to specify, by written or oral contract.
49. "Solvent" means organic compounds that are used as diluents, thinners, dissolvers, viscosity reducers, cleaning agents or other related uses.
50. "Structural glazing adhesive" means any adhesive intended by the manufacturer to apply glass, ceramic, metal, stone or composite panels to exterior building frames.
51. "Subfloor installation" means the installation of subflooring material over floor joists, including the construction of any load bearing joists. Subflooring is covered by a finish surface material.
52. "Surface preparation solvent" means a solvent used to remove dirt, oil and other contaminants from a substrate prior to the application of a primer, adhesive or sealant.
53. "Thin metal laminating adhesive" means any adhesive intended by the manufacturer for use in bonding multiple layers of metal to metal or metal to plastic in the production of electronic or magnetic components in which the thickness of the bond line(s) is less than 0.25 mils.
54. "Tire repair" means a process that includes expanding a hole, tear, fissure or blemish in a tire casing by grinding or gouging, applying adhesive and filling the hole or crevice with rubber.
55. "Tire retread adhesive" means any adhesive intended by the manufacturer for application to the back of pre-cure tread rubber and to the casing and cushion rubber. Tire tread adhesive may also be used to seal buffed tire casings to prevent oxidation while the tire is being prepared for a new tread.
56. "Traffic marking tape" means preformed reflective film intended by the manufacturer for application to public streets, highways and other surfaces, including but not limited to curbs, berms, driveways and parking lots.
57. "Traffic marking tape adhesive primer" means any primer intended by the manufacturer for application to surfaces prior to installation of traffic marking tape.



58. “Undersea-based weapons systems components” means the fabrication of parts, assembly of parts or completed units of any portion of a missile launching system used on undersea ships.
59. “Waterproof resorcinol glue” means a two-part resorcinol-resin-based adhesive designed for applications where the bond line must be resistant to conditions of continuous immersion in fresh or salt water.

#### **44.6 Applicability and Exemptions**

- A. Except as provided in §§ 44.6(B) and (C) of this Part, the provisions of this regulation apply to any person who sells, offers for sale, supplies or manufactures any adhesive, sealant, adhesive primer or sealant primer for use within the State of Rhode Island, as well as any person who uses or solicits the use of any adhesive, sealant, adhesive primer or sealant primer within the State of Rhode Island.
- B. The provisions of this regulation do not apply to the following:
  1. Testing or evaluation of adhesives, sealants, adhesive primers or sealant primers in a research and development, quality assurance or analytical laboratory, provided that records are maintained as specified in § 44.9(C) of this Part;
  2. Adhesives, sealants, adhesive primers and sealant primers that are subject to [Part 31](#) of this Subchapter (Control of Volatile Organic Compounds from Consumer Products), or [Part 33](#) of this Subchapter (Control of Volatile Organic Compounds from Architectural Coatings and Industrial Maintenance Coatings);
  3. Adhesives and sealants that contain less than twenty (20) grams of VOC per liter of product, less water, as applied;
  4. Cyanoacrylate adhesives;
  5. Aerosol adhesives;
  6. Adhesives, sealants, adhesive primers or sealant primers, except plastic cement welding adhesives and contact bond adhesives, that are sold or supplied by the manufacturer or supplier in containers with a net volume of sixteen (16) fluid ounces or less or a net weight of one (1) pound or less;
  7. Contact bond adhesives that are sold or supplied by the manufacturer or supplier in containers with a net volume of one (1) gallon or less.
  8. The use of adhesives, sealants, adhesive primers, sealant primers, surface preparation and cleanup solvents in the following operations:

- a. Tire repair, provided that the product label states "For tire repair only;"
  - b. Assembly, repair and manufacture of aerospace or undersea-based weapon systems;
  - c. Manufacture of medical equipment; and
  - d. Metal cleaning operations regulated by and performed in accordance with [Part 36](#) of this Subchapter (Control of Emissions from Organic Solvent Cleaning);
9. The use of adhesives, sealants, adhesive primers and sealant primers at a facility, if the total VOC emissions from all adhesives, sealants, adhesive primers and sealant primers used at the facility are less than two hundred (200) pounds in any consecutive twelve-month period. Any person claiming an exemption pursuant to this paragraph shall record and maintain monthly operational records sufficient to document rolling twelve-month VOC emissions in accordance with the specifications in § 44.9 of this Part.
  10. Adhesives, sealants, adhesive primers and sealant primers that are sold, offered for sale or manufactured in Rhode Island for shipment and use outside of Rhode Island.
  11. The use of any adhesive, sealant, adhesive primer, sealant primer, cleanup solvent or surface preparation solvent at a private residence for non-commercial purposes.
  12. The use of adhesives, cleanup solvents and surface preparation solvents in the repair and manufacture of submarines, when the use of noncomplying material is necessary to meet military performance specifications, provided that records of the use of such noncompliant materials are maintained in accordance with the specifications in § 44.9 of this Part.
- C. The VOC content limits in §§ 44.7.1 and 44.7.2 of this Part shall not apply if the total volume of adhesives, sealants, primers, cleanup and surface preparation solvents which have VOC contents in excess of those specified in §§ 44.7.1 and 44.7.2 of this Part applied at a facility does not exceed fifty-five (55) gallons in any consecutive twelve-month period. Any person claiming exemption pursuant to § 44.6(B) of this Part shall record and maintain monthly operational records sufficient to demonstrate compliance with this exemption in accordance with the specifications in § 44.9 of this Part.

## 44.7 Emissions Limitations

- A. Except as provided in §§ 44.6(B), 44.6(C), and 44.7(E) of this Part, no person shall manufacture, use, solicit the use of, sell, supply or offer for sale in Rhode Island any adhesive, sealant, adhesive primer or sealant primer that has a VOC content in excess of the applicable limit specified in §§ 44.7.1 and 44.7.2 of this Part.
- B. For adhesives, the VOC content limits in §§ 44.7.1 and 44.7.2 of this Part shall apply as follows:
1. For adhesives listed in § 44.7.1 of this Part, the VOC content limits in § 44.7.1 of this Part, not the limits in § 44.7.2 of this Part, shall apply.
  2. For adhesives not listed in § 44.7.1 of this Part, the applicable VOC content limit in § 44.7.2 of this Part, which are based on substrate category, shall apply. If an adhesive is used to bond two (2) different substrates, the applicable substrate category in § 44.7.2 of this Part with the higher VOC content shall apply.
- C. For surface preparation solvents:
1. Except as provided in § 44.7(C)(2) of this Part, the VOC content of surface preparation solvents shall be less than seventy (70) grams per liter;
  2. If a surface preparation solvent is used in applying single-ply roofing, the composite vapor pressure, excluding water and exempt compounds, of the surface preparation solvent shall not exceed forty-five (45) mm Hg at twenty degrees Celsius (20°C);
- D. For cleanup solvents:
1. Except as provided in § 44.7(D)(2) of this Part, the composite vapor pressure, excluding water, of a cleanup solvent shall not exceed forty-five (45) mm Hg at twenty degrees Celsius (20°C);
  2. Removal of an adhesive, sealant, adhesive primer or sealant primer from the parts of spray application equipment shall be performed:
    - a. In an enclosed cleaning system or equivalent cleaning system, as determined by the test method identified in § 44.10(H) of this Part, or
    - b. Using a solvent with a VOC content less than or equal to seventy (70) grams of VOC per liter of material. Parts containing dried adhesive may be soaked in a solvent if the composite vapor pressure of the solvent, excluding water and exempt compounds, is less than or equal to 9.5 mm Hg at twenty degrees Celsius (20°C)

and the parts and solvent are in a closed container that remains closed except when adding parts to or removing parts from the container.

- E. A person using an adhesive, sealant, adhesive primer or sealant primer subject to this rule may comply with the VOC content limits in §§ 44.7.1 and 44.7.2 of this Part using air pollution control equipment, provided that such equipment meets the following requirements:
1. The air pollution control equipment reduces VOC emissions from all adhesives, sealants, adhesive primers or sealant primers used at the facility that are subject to this regulation by an overall capture and control efficiency of at least eighty-five percent (85%), by weight;
  2. For thermal incinerators, the combustion temperature shall be monitored continuously;
  3. For catalytic incinerators, inlet and exhaust gas temperatures shall be monitored continuously;
  4. For control devices other than thermal or catalytic incinerators, including carbon absorbers, the control device efficiency shall be monitored continuously;
  5. Records sufficient to demonstrate compliance with the requirements §§ 44.7(E)(1) through (4) of this Part shall be maintained as specified in § 44.9(B) of this Part.
  6. A minor source permit or major source permit, issued pursuant to Part 9 of this Subchapter (Air Pollution Control Permits), has been issued for the air pollution control equipment. If the air pollution control equipment is exempt from the requirements to obtain a permit in [Part 9](#) of this Subchapter (Air Pollution Control Permits), a registration form must be on file with the Office of Air Resources.
- F. Any person using adhesives, sealants, adhesive primers, sealant primers, surface preparation or clean-up solvents subject to this regulation shall store or dispose of all absorbent materials, such as cloth or paper, which are moistened with adhesives, sealants, primers or solvents subject to this regulation in non-absorbent containers that shall be closed except when placing materials in or removing materials from the container.
- G. No person who applies or solicits the application of any adhesive, sealant, adhesive primer or sealant primer subject to this regulation shall add solvent to such adhesive, sealant or primer in an amount in excess of the manufacturer's recommendation for application, if such addition causes the adhesive, sealant or primer to exceed the applicable VOC content limit in §§ 44.7.1 and 44.7.2 of this Part.

**44.7.1 Table I: VOC Content Limits for Adhesives, Sealants, Adhesive Primers, Sealant Primers and Adhesives**

<b>Adhesive, sealant, adhesive primer or sealant primer category</b>	<b>VOC content limit (as applied) (grams VOC per liter*)</b>
<b>Adhesives</b>	
ABS welding	400
Ceramic tile installation	130
Computer diskette jacket manufacturing	850
Contact bond	250
Cove base installation	150
CPVC welding	490
Indoor floor covering installation	150
Metal to urethane/rubber molding or casting	850
Multipurpose construction	200
Nonmembrane roof installation/repair	300
Other plastic cement welding	510
Outdoor floor covering installation	250
PVC welding	510
Single-ply roof membrane installation/repair	250
Structural glazing	100

Thin metal laminating	780
Tire retread	100
Perimeter bonded sheet vinyl flooring installation	660
Waterproof resorcinol glue	170
Sheet-applied rubber installation	850
<b>Sealants</b>	
Architectural	250
Marine deck	760
Nonmembrane roof installation/repair	300
Roadway	250
Single-ply roof membrane	450
Other	420
<b>Adhesive Primers</b>	
Automotive glass	700
Plastic cement welding	650
Single-ply roof membrane	250
Traffic marking tape	150
Other	250

<b>Sealant Primers</b>	
Non-porous architectural	250
Porous architectural	775
Marine deck	760
Other	750

**44.7.2 Table II: VOC Content Limits for Adhesives Applied to Listed Substrates**

<b>Substrate</b>	<b>VOC content limit (as applied) (grams VOC per liter*)</b>
Flexible vinyl	250
Fiberglass	200
Metal	30
Porous material	120
Rubber	250
*The VOC content is determined as the weight of volatile organic compounds, less water, determined as specified in § 44.10 of this Part.	

## **44.8 Labeling Requirements**

- A. Each manufacturer of an adhesive, sealant, adhesive primer or sealant primer subject to this regulation shall display the following information on the product container or label:
1. A statement of the manufacturer's recommendation regarding thinning, reducing, or mixing of the product, provided that:

- a. This requirement does not apply to the thinning of a product with water; and
  - b. If thinning of the product prior to use is not necessary, the statement must specify that the product is to be applied without thinning;
2. The maximum or the actual VOC content of the product, as supplied, in grams of VOC per liter of product, calculated as specified in § 44.10 of this Part;
  3. The maximum VOC content of the product, as applied, in grams of VOC per liter of product, after thinning according to the manufacturer's maximum thinning recommendation.

#### **44.9 Recordkeeping and Reporting**

- A. Except as provided in § 44.9(B) of this Part, each person subject to this regulation shall maintain records sufficient to demonstrate compliance with the applicable limitations in § 44.7 of this Part. Such records shall include, as applicable, but not be limited to, the following information for each adhesive, sealant, adhesive primer, sealant primer, cleanup solvent and surface preparation solvent in use or in storage:
  1. The product name, manufacturer and applicable category or substrate, as listed in §§ 44.7.1 and 44.7.2 of this Part;
  2. The VOC content of the product, as supplied, in grams of VOC per liter of product, calculated as specified in § 44.10 of this Part;
  3. The name and VOC content of any catalysts, reducers, thinners or other components with which the product is mixed prior to the use and the mix ratio used;
  4. The final VOC content of the product, as applied, after mixing, in grams of VOC per liter of product; and
  5. The monthly volume of product used.
- B. Any person who complies with § 44.7 of this Part through the use of air pollution control equipment, as specified in § 44.7(E) of this Part, shall record the following information:
  1. The volume used per day of each adhesive, sealant, adhesive primer, sealant primer or solvent with a VOC content that exceeds the applicable VOC content limit in §§ 44.7.1 and 44.7.2 of this Part;
  2. Daily hours of operation of the control equipment;



3. Date and type of maintenance operations performed on the control equipment,
  4. For thermal incinerators, the combustion temperature, recorded daily;
  5. For catalytic incinerator; the inlet and exhaust gas temperatures, recorded daily;
  6. For control devices other than thermal and catalytic incinerators, the VOC concentrations of the inlet and exhaust gas; and
  7. Any other records necessary to document that the control equipment is in compliance with the control and capture efficiency requirement in § 44.7(E)(1) of this Part.
- C. For adhesives, sealants, adhesive primers and sealant primers subject to the laboratory testing exemption pursuant to § 44.6(B)(1) of this Part, the person conducting the testing shall make and maintain records of all such materials used, including, but not limited to, the product name, the manufacturer and the product category of the material or type of application.
- D. Information recorded pursuant to requirements of §§ 44.9(A) through (C) of this Part shall be maintained at the facility for five years and shall be made available to the Director within ninety (90) days of request.

#### **44.10 Compliance Provisions and Test Methods**

- A. Except as provided in §§ 44.10(B) through (E) of this Part, the VOC and solids content of all non-aerosol adhesives, adhesive primers and cleanup solvents shall be determined using 40 C.F.R. § 60, Appendix A-7, Method 24 incorporated in § 44.4(A) of this Part, or South Coast Air Quality Management District (SCAQMD) Method 304, incorporated in § 44.4(D) of this Part.
- B. The organic content of exempt organic compounds shall be determined using ASTM D4457-85, as applicable, incorporated in § 44.4(B) of this Part.
- C. The VOC content of any plastic cement welding adhesive or primer shall be determined using SCAQMD Method 316A, incorporated in § 44.4(D) of this Part.
- D. To determine if a diluent is a reactive diluent, the percent of the reactive organic compound that becomes an integral part of the finished materials shall be determined using SCAQMD Method 316A, incorporated in § 44.4(D) of this Part.
- E. The composite vapor pressure of organic compounds in cleaning materials shall be determined by quantifying the amount of each compound in the blend using gas chromatographic analysis (ASTM E 260-96) for organics and ASTM D3792-16 for water content, as applicable and incorporated in § 44.4(B) of this Part, and the following equation:

$$Pp_c = \frac{\sum_{i=1}^n (W_i)(VP_i)/Mw_i}{W_w/Mw_w + \sum_{i=1}^n W_e/Mw_e + \sum_{i=1}^n W_i/Mw_i}$$

Where:

$P_{pc}$  = VOC composite partial pressure at 20°C, in mm Hg

$W_i$  = Weight of the "i"th VOC compound, in grams, as determined by ASTM E 260-96

$W_w$  = Weight of water, in grams as determined by ASTM D 3792-16

$W_e$  = Weight of the "i"th exempt compound, in grams, as determined by ASTM E 260-96

$Mw_i$  = Molecular weight of the "i"th VOC compound, in grams per g-mole, as given in chemical reference literature

$Mw_w$  = Molecular weight of water, 18 grams per g-mole

$Mw_e$  = Molecular weight of the "i"th exempt compound, in grams per g-mole, as given in chemical reference literature

$Vp_i$  = Vapor pressure of the "i"th VOC compound at 20°C, in mm Hg, as determined by § 44.10(F) of this Part

- F. The vapor pressure of each single component compound may be determined from ASTM D2879-10, incorporated in § 44.4(B) of this Part or may be obtained from any of the following sources:
1. The Vapor Pressure of Pure Substances, Boublik, Fried, and Hala; Elsevier Scientific Publishing Company, New York;
  2. Perry's Chemical Engineer's Handbook, McGraw-Hill Book Company;
  3. CRC Handbook of Chemistry and Physics, CRC Press, Taylor & Francis Group;
  4. Lange's Handbook of Chemistry, John Dean, editor, McGraw-Hill Book Company; or
  5. Additional sources approved by the Department.
- G. If air pollution control equipment is used to meet the requirements of this rule, the owner or operator shall make the following determinations:

1. The measurement of capture efficiency shall be conducted and reported in accordance with the EPA Technical Document "Guidelines for Determining Capture Efficiency," incorporated in § 44.4(E) of this Part; and
  2. The control efficiency shall be determined in accordance with 40 C.F.R. Appendix A-7 Methods 25, 25A, 25B, incorporated in § 44.4(A) of this Part or Method 100, incorporated in § 44.4(C) of this Part.
- H. The active and passive solvent losses from spray gun cleaning systems shall be determined using SCAQMD's "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems," incorporated in § 44.4(D) of this Part. The test solvent for this determination shall be any lacquer thinner with a minimum vapor pressure of 105 mm of Hg at twenty degrees Celsius (20°C), and the minimum test temperature shall be fifteen degrees Celsius (15°C).
- I. For adhesives that do not contain reactive diluents, grams of VOC per liter of adhesive, less water, shall be calculated according to the following equation:

$$\text{Grams of VOC per liter of adhesive} = \frac{Ws - Ww - We}{Vm - Vw - Ve}$$

Where:

Ws = weight of volatile compounds, in grams

Ww = weight of water, in grams

We = weight of exempt compounds, in grams

Vm = volume of material, in liters

Vw = volume of water, in liters

Ve = volume of exempt compounds, in liters

- J. For adhesives that contain reactive diluents, the VOC content of the adhesive is determined after curing. The grams of VOC per liter of adhesive, less water, shall be calculated according to the following equation:

$$\text{Grams of VOC per liter of adhesive} = \frac{Wrs - Wrw - Wre}{Vrm - Vrw - Vre}$$

Where:

Wrs = weight of volatile compounds not consumed during curing, in grams

Wrw = weight of water not consumed during curing, in grams

Wre = weight of exempt compounds not consumed during curing, in grams

Vrm = volume of material not consumed during curing, in liters

Vrw = volume of water not consumed during curing, in liters

Vre = volume of exempt compounds not consumed during curing, in liters

- K. Grams of VOC per liter of material shall be calculated according to the following equation:

$$\text{Grams of VOC per liter of materials} = \frac{Ws - Ww - We}{Vm}$$

Where:

Ws = weight of volatile compounds, in grams

Ww = weight of water, in grams

We = weight of exempt compounds, in grams

Vm = volume of material, in liters

- L. Percent VOC by weight shall be calculated according to the following equation:

$$\% \text{ VOC by weight} = [(Wv/W)] \times 100$$

Where:

Wv = weight of VOCs in grams

W = weight of material in grams

**250-RICR-120-05-51**

## **TITLE 250 – DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

### **CHAPTER 120 – AIR RESOURCES**

#### **SUBCHAPTER 05 – AIR POLLUTION CONTROL**

PART 51 – Control of Volatile Organic Compound Emissions from Fiberglass Boat Manufacturing

### **51.1 Purpose and Authority**

#### **51.1.1 Purpose**

The purpose of this regulation is to limit volatile organic compound emissions from fiberglass boat manufacturing.

#### **51.1.2 Authority**

These regulations are authorized pursuant to R.I. Gen. Laws § 42-17.1-2(19) and R.I. Gen. Laws Chapter 23-23, and have been promulgated pursuant to the procedures set forth in the Rhode Island Administrative Procedures Act, R.I. Gen. Laws Chapter 42-35.

### **51.2 Application**

The terms and provisions of this regulation shall be liberally construed to permit the Department to effectuate the purposes of state laws, goals and policies.

### **51.3 Severability**

If any provision of this regulation or the application thereof to any person or circumstance, is held invalid by a court of competent jurisdiction, the validity of the remainder of the regulation shall not be affected thereby.

### **51.4 Incorporated Materials**

These regulations hereby adopt and incorporate South Coast Air Quality Management District Method (SCAQMD) 312-91(1996), by reference, not including any further editions or amendments thereof and only to the extent that the provisions therein are not inconsistent with these regulations.

### **51.5 Definitions**

- A. Unless otherwise expressly defined in this section, the terms used in this regulation shall be defined by reference to Part [0](#) of this Subchapter (General

Definitions). As used in this regulation, the following terms shall, where the context permits, be construed as follows:

1. “Application equipment cleaning” means the process of flushing or removing resins and gel coats from the interior or exterior of equipment that is used to apply resin or gel coat in the manufacture of fiberglass parts.
2. “Assembly adhesives” means any chemical substance that is applied for the purpose of bonding two surfaces together other than by mechanical means.
3. “Atomized application method” means a resin application technology in which the resin leaves the application equipment and breaks into droplets or an aerosol as it travels from the application equipment to the surface of the part. Atomized application methods include, but are not limited to, resin spray guns and resin chopper spray guns.
4. “Boat” means any type of vessel, other than a seaplane, that can be used for transportation on the water.
5. “Clear gel coat” means gel coats that are clear or translucent so that underlying colors are visible. Clear gel coats are used to manufacture parts for sale.
  - a. Clear gel coats do not include tooling gel coats used to build or repair molds.
6. “Closed molding” means any molding process in which pressure is used to distribute the resin through the reinforcing fabric placed between two mold surfaces to either saturate the fabric or fill the mold cavity. The pressure may be clamping pressure, fluid pressure, atmospheric pressure, or vacuum pressure used either alone or in combination. The mold surfaces may be rigid or flexible. Closed molding includes, but is not limited to, compression molding with sheet molding compound, infusion molding, resin injection molding (RIM), vacuum-assisted resin transfer molding (VARTM), resin transfer molding (RTM), and vacuum-assisted compression molding.
  - a. Processes in which a closed mold is used only to compact saturated fabric or remove air or excess resin from the fabric (such as in vacuum bagging), are not considered closed molding.
  - b. Open molding steps, such as application of a gel coat or skin coat layer by conventional open molding prior to a closed molding process, are not closed molding.

7. "Cured resin" or "cured gel coat" means resin or gel coat that has changed irreversibly from a liquid to a solid.
8. "Fiberglass boat" means a vessel in which either the hull or deck is built from a composite material consisting of a thermosetting resin matrix reinforced with fibers of glass, carbon, aramid, or other material.
9. "Filled resin" or "filled production resin" means a resin to which an inert material has been added to change viscosity, density, shrinkage, or other physical properties.
10. "Flowcoater" means a non-atomizing application method of applying resins and gel coats to an open mold with a fluid nozzle in a fan pattern with no air supplied to the nozzle.
11. "Gel coat" means a polyester resin surface coating, either pigmented or clear, that provides a cosmetic enhancement and improves resistance to degradation from exposure to the elements.
12. "Mixing" means any operation in which resin or gel coat, including the mixing of putties or polyester resin putties, is combined with additives that include, but are not limited to, fillers, promoters, or catalysts.
13. "Mold" means the cavity or surface into or on which gel coat, resin, and fibers are placed and from which finished fiberglass parts take their form.
14. "Monomer" means a VOC that partially combines with itself, or other similar compounds, by a cross-linking reaction to become a part of the cured resin. Monomers include, but are not limited to, styrene and methyl methacrylate.
15. "Monomer VOC content" means the weight of the monomer, divided by the weight of the polymer.
16. "Non-atomized application method" means any application technology in which the resin is not broken into droplets or an aerosol as it travels from the application equipment to the surface of the part. Non-atomized application methods include, but are not limited to, flowcoaters, chopper flowcoaters, pressure-fed resin rollers, resin impregnators, and hand application (for example, paint brush or paint roller).
17. "Open molding resin and gel coat operation" means any process in which the reinforcing fibers and resin are placed in the mold and are open to the surrounding air while the reinforcing fibers are saturated with resin. For the purposes of this regulation, open molding includes operations in which a vacuum bag or similar cover is used to compress an uncured laminate to remove air bubbles or excess resin, or to achieve a bond between a core material and a laminate.

18. "Pigmented gel coat" means opaque gel coats used to manufacture parts for sale.
  - a. Pigmented gel coats do not include tooling gel coats used to build or repair molds.
19. "Polyester resin materials" means unsaturated polyester resins, such as isophthalic, orthophthalic, halogenated, bisphenol A, vinyl ester, or furan resins; cross-linking agents; catalysts; gel coats; inhibitors; accelerators; promoters; and any other material containing VOC used in polyester resin operations.
20. "Polyester resin operations" means fabricate, rework, repair, or touchup products for commercial, military, or industrial use by mixing, pouring, hand laying-up, impregnating, injecting, forming, winding, spraying, and/or curing by using unsaturated polyester resin materials.
21. "Production resin" means any resin used to manufacture parts for sale.
  - a. Production resins do not include tooling resins used to build or repair molds, or assembly adhesives as defined in § 51.5(A)(2) of this Part.
22. "Repair" means that portion of the fabrication process that requires the addition of polyester resin materials to portions of a previously fabricated product in order to mend damage.
23. "Resin" means any thermosetting resin with or without pigment containing styrene or methyl methacrylate and used to encapsulate and bind together reinforcement fibers in the construction of fiberglass parts.
24. "Resin impregnator" means a mechanical non-atomizing composite materials application method in which fiber reinforcement is saturated with resins in a controlled ratio for each specific composite product.
25. "Roll-out" means the process of using rollers, squeegees, or similar tools to compact reinforcing materials saturated with resin to remove trapped air or excess resin.
26. "Skin coat" means a layer of resin and fibers applied over the gel coat to protect the gel coat from being deformed by the next laminate layers.
27. "Tooling gel coat" means the gel coat used to build or repair molds (also known as tools) or prototypes (also known as plugs) from which molds will be made.



28. "Tooling resin" means the resin used to build or repair molds (also known as tools) or prototypes (also known as plugs) from which molds will be made.
29. "Touch-up" means that portion of the process that is necessary to cover minor imperfections.
30. "Vacuum bagging" means any molding technique in which the reinforcing fabric is saturated with resin and then covered with a flexible sheet that is sealed to the edge of the mold and where a vacuum is applied under the sheet to compress the laminate, remove excess resin, or remove trapped air from the laminate during curing.
  - a. Vacuum bagging does not include processes that meet the definition of closed molding.
31. "Vinylester resin" means a thermosetting resin containing esters of acrylic or methacrylic acids and having double-bond and ester linkage sites only at the ends of the resin molecules.

## 51.6 Applicability

- A. The provisions of this regulation apply to the owner or operator of any facility that manufactures fiberglass boat hulls or decks or related parts, builds molds to make fiberglass boat hulls or decks or related parts, or makes polyester resin putties for assembling fiberglass boats, whose total actual VOC emissions, before controls, are greater than or equal to 2.7 tons per rolling 12-month period from:
  1. Open molding resin and gel coat operations, including pigmented gel coat, clear gel coat, production resin, tooling gel coat and tooling resin;
  2. Resin and gel coat mixing operations; and
  3. Resin and gel coat application cleaning operations.
- B. This regulation shall not apply to:
  1. Any facility that solely manufactures parts of boats, such as hatches, seats, or lockers, or boat trailers, and does not manufacture hulls or decks of boats from fiberglass or build molds to make fiberglass boat hulls or decks;
  2. Non-gel coat or resin surface coatings applied to fiberglass and/or metal recreational boats(pleasure crafts);

3. Industrial adhesives used in the assembly of fiberglass boats, with the exception of polyester resin putties used to assemble fiberglass parts, which are not considered adhesives for the purpose of this regulation.
- C. The monomer and non-monomer VOC content limits in § 51.7(B)(2) of the Part shall not apply to:
1. Production resins, including skin coat resins, that meet the specification for use in military vessels or are approved by the U.S. Coast Guard for use in the construction of lifeboats, rescue boats, and other life-saving appliances approved under 46 C.F.R. Chapter I Subpart Q, or the construction of small passenger vessels regulated by 46 C.F.R. Chapter I Subpart T, including but not limited to vessels of less than one hundred (100) tons carrying more than six (6) and less than one hundred fifty (150) passengers for hire. Production resins that meet these criteria must be applied with non-atomizing resin application equipment in order to qualify for exemption;
  2. Production and tooling resins, and pigmented, clear, and tooling gel coat used for part or mold repair and touch-up. The total resin and gel coat materials included in this exemption must not exceed one percent (1%) by weight of all resin and gel coat used at a facility on a 12-month rolling average basis;
  3. Pure, one hundred percent (100%) vinylester resin used for skin coats that are applied with non-atomizing resin application equipment and with the total amount of the resin materials not exceeding five percent (5%) by weight of all resin used at a facility on a 12-month rolling average basis; and
  4. Closed molding operations.

## **51.7 Emissions Limitations**

- A. Except as provided in § 51.6(C) of this Part, the owner or operator of a fiberglass boat manufacturing facility subject to this regulation shall limit VOC emissions from molding operations, by use of one or more of the control options in §§ 51.7(B) through (E) of this Part;
- B. Low monomer VOC content option
1. The total monomer VOC content limits used for any open molding resin and gel coat operations subject to this regulation, shall not exceed the monomer VOC limits established in § 51.7(B)(2) of this Part.
  2. Table 1 Total Monomer VOC Limits for Open Molding Resin and Gel Coat Operations

Material	Application Method	Monomer VOC Content Limits (weight percent)
Production resin	Atomized (spray)	28
Production resin	Non-atomized	35
Pigmented gel coat	Any Method	33
Clear gel coat	Any method	48
Tooling resin	Atomized	30
Tooling resin	Non-atomized	39
Tooling gel coat	Any method	40

3. Alternatively, the weighted average monomer VOC contents for a specific application method may be used to meet the monomer VOC content limits in § 51.7(B)(2) of this Part, on a 12-month rolling average basis, as calculated using Equation 1:

Equation 1

$$E_{\text{voc}} = \frac{\sum_{i=1}^n (M_i \text{VOC}_i)}{\sum_{i=1}^n (M_i)}$$

Where:

$E_{\text{voc}}$  = the weighted average monomer VOC content

$M_i$  = mass of each open molding resin or gel coat used in the past twelve (12) months in an operation, in megagrams.

$\text{VOC}_i$  = total monomer VOC content, by weight percent, of each open molding resin or gel coat used in the past twelve (12) months in an operation.

$n$  = number of different open molding resins or gel coats used in the past twelve (12) months in an operation.

4. In addition to complying with the monomer VOC limits in § 51.7(B)(2) of this Part, the non-monomer VOC content of each resin and gel coat shall not contain more than five percent (5%) by weight of the resin or gel coat. If the non-monomer VOC content of a resin or gel coat exceeds five percent (5%), then the excess non-monomer VOC over five percent (5%) must be added to the monomer VOC content for that resin or gel coat to calculate the weighted average monomer VOC content in § 51.7(B)(3) of this Part.

C. Emissions averaging option

1. In lieu of complying with the monomer VOC content limits established in § 51.7(B)(2) of this Part, the owner or operator of a facility subject to this regulation may comply by using Equation 2 to establish a facility-specific monomer VOC mass emission limit on a 12-month rolling average basis:

Equation 2

$$\text{Monomer VOC Limit} = 46(\text{MR}) + 159(\text{MPG}) + 291(\text{MCG}) + 54(\text{MTR}) + 214(\text{MTG})$$

Where:

Monomer VOC Limit = total allowable monomer VOC that can be emitted from the open molding operations included in the average, in kilograms per 12-month period.

MR = mass of production resin used in the past twelve (12) months, excluding any materials that are exempt, in megagrams.

MPG = mass of pigmented gel coat used in the past twelve (12) months, excluding any materials that are exempt, in megagrams.

MCG = mass of clear gel coat used in the past twelve (12) months, excluding any materials that are exempt, in megagrams.

MTR = mass of tooling resin used in the past twelve (12) months, excluding any materials that are exempt, in megagrams.

MTG = mass of tooling gel coat used in the past twelve (12) months, excluding any materials that are exempt, in megagrams.

Note: The numerical coefficients associated with each term on the right side of Equation 2 are the allowable monomer VOC emission rates for that materials in units of kilograms of monomer VOC per megagram of material used.

2. Equation 3 shall be used to demonstrate that that the monomer VOC mass emissions from the operations included in the average do not exceed the emission limit calculated using Equation 2 in § 51.7(C)(1) of this Part for the same period. This demonstration shall be conducted at the end of the first 12-month averaging period and at the end of every subsequent month for only those operations and materials included in the average.

Equation 3

$$\text{Monomer VOC emissions} = (PV_R)(M_R) + (PV_{PG})(M_{PG}) + (PV_{CG})(M_{CG}) + (PV_{TR})(M_{TR}) + (PV_{TG})(M_{TG})$$

Where:

Monomer VOC emissions = monomer VOC emissions from open molding operations included in the average, in kilograms per 12-month period.

$PV_R$  = weighted-average monomer VOC emission rate for production resin used in the past twelve (12) months, in kilograms per megagram.

$M_R$  = mass of production resin used in the past twelve (12) months, excluding any materials that are exempt, in megagrams.

$PV_{PG}$  = weighted-average monomer VOC emission rate for pigmented gel coat used in the past twelve (12) months, in kilograms per megagram.

$M_{PG}$  = mass of pigmented gel coat used in the past twelve (12) months, excluding any material that are exempt, in megagrams.

$PV_{CG}$  = weighted-average monomer VOC emission rate for clear gel coat used in the past twelve (12) months, in kilograms per megagram.

$M_{CG}$  = mass of clear gel coat used in the past twelve (12) months, excluding any materials that are exempt, in megagrams.

$PV_{TR}$  = weighted-average monomer VOC emission rate for tooling resin used in the past twelve (12) months, in kilograms per megagram.

$M_{TR}$  = mass of tooling resin used in the past twelve (12) months, excluding any materials that are exempt, in megagrams.

$PV_{TG}$  = weighted-average monomer VOC emission rate for tooling gel coat used in the past twelve (12) months, in kilograms per megagram.

MTG = mass of tooling gel coat used in the past twelve (12) months, excluding any materials that are exempt, in megagrams.

3. Equation 4 shall be used to compute the weighted-average monomer VOC emission rate for the previous twelve (12) months for each open molding resin and gel coat operation included in the average for use in Equation 3 in § 51.7(C)(2) of this Part:

Equation 4

$$PV_{op} = \frac{\sum_{i=1}^n (M_i PV_i)}{\sum_{i=1}^n (M_i)}$$

Where:

PV<sub>OP</sub> = weighted-average monomer VOC emission rate for each open molding operation (PV<sub>R</sub>, PV<sub>PG</sub>, PV<sub>CG</sub>, PV<sub>TR</sub>, and PV<sub>TG</sub>) included in the average, in kilograms of monomer VOC per megagram of material applied.

M<sub>i</sub> = mass of resin or gel coat used within an operation in the past twelve (12) months, in megagrams.

PV<sub>i</sub> = the monomer VOC emission rate for resin or gel coat used within an operation in the past twelve (12) months, in kilograms of monomer VOC per megagram of material applied. The equations in § 51.7(C)(4) of this Part shall be used to compute PV<sub>i</sub>

4. Table 2: Monomer VOC Emission Rate Formulas for Open Molding Resin and Gel Coat

Material	Application Method	Formula to Calculate the Monomer VOC Emission Rate or PV <sub>i</sub>
Production resin, tooling resin	Atomized	0.014 x (Resin VOC%) <sup>2.425</sup>
	Atomized, plus vacuum bagging with roll-out	0.01185 x (Resin VOC%) <sup>2.425</sup>
	Atomized, plus vacuum bagging without roll-out	0.00945 x (Resin VOC%) <sup>2.425</sup>

	<p>Non-atomized</p> <p>Non-atomized, plus vacuum bagging with roll-out</p> <p>Non-atomized, plus vacuum bagging without roll-out</p>	<p><math>0.014 \times (\text{Resin VOC}\%)^{2.275}</math></p> <p><math>0.011 \times (\text{Resin VOC}\%)^{2.275}</math></p> <p><math>0.0076 \times (\text{Resin VOC}\%)^{2.275}</math></p>
Pigmented gel coat, clear gel coat, tooling gel coat	All methods	$0.445 \times (\text{Gel Coat VOC}\%)^{1.675}$

5. The monomer VOC content of each open molding resin or gel coat material included in the emissions averaging option includes the amount of non-monomer VOC content that exceeds five percent (5%) by weight of the resin or gel coat material.
- D. The owner or operator of any facility with molding resin and gel coat operations choosing to use add-on emission controls instead of complying with the requirements of §§ 51.7(B) and (C) of this Part shall:
1. Install control equipment to meet the VOC emission limit determined by Equation 2 in § 51.7(C)(1) of this Part, except that instead of using the mass of each material used over the past consecutive 12-month period, the facility shall use the mass of each material used during the air pollution control device performance test;
  2. Use resin and gel coat with a non-monomer VOC content of no more than five percent (5%) by weight of the resin or gel coat. If the non-monomer VOC content of a resin or gel coat exceeds five percent (5%), then the excess non-monomer VOC over five percent (5%) must be added to the monomer VOC content.
  3. Monitor and record relevant control device and capture system operating parameters during the control device performance test and use the recorded values to establish operating limits for those parameters; and
  4. Monitor the operating parameters for the control device and emissions capture system and maintain the parameters within the established limits.
- E. Requirements for filled resins
1. The owner or operator of a facility subject to this regulation that uses resins to which fillers are added shall use Equation 5 to adjust the

emission rate for filled resins under all options specified in §§ 51.7(B) through (D) of this Part:

Equation 5

$$PVF = PVU \times (100 - \%Filler)/100$$

Where:

PVF = The as-applied monomer VOC emission rate for the filled production resin or tooling resin, in kilograms monomer VOC per megagram of filled material.

PVU = The monomer VOC emission rate for the neat (unfilled) resin before filler is added, as calculated using the formulas in § 51.7(C)(4) of this Part.

%Filler = The weight percent of filler in the as-applied filled resin system.

2. For filled resin used as a production resin the value of  $PV_F$  calculated by Equation 5 in § 51.7(E)(1) of this Part shall not exceed forty-six (46) kilograms of monomer VOC per megagram of filled resin applied;
3. For filled resin used as a tooling resin the value of  $PV_F$  calculated by Equation 5 in § 51.7(E)(1) of this Part shall not exceed fifty-four (54) kilograms of monomer VOC per megagram of filled resin applied;
4. For filled resin included in the emissions averaging procedure then the facility shall use the value of  $PV_F$  calculated by Equation 5 in § 51.7(E)(1) of this Part for the value of  $PV_i$  in Equation 4 in § 51.7(C)(3) of this Part.
5. The monomer VOC content of each, as applied, filled resin includes the amount of non-monomer VOC content that exceeds five percent (5%) by weight of the unfilled resin material.

#### F. Alternative RACT

1. The owner of operator of a subject facility may apply for alternative RACT if the facility submits for approval by the Director and EPA:
  - a. Economic and/or technical documentation to the satisfaction of the Department and EPA that the applicable emission limitations set forth in §§ 51.7.1(A) through (E) of this Part cannot feasibly be met, and,
  - b. A proposal to set applicable emission limitations different from those of §§ 51.7(A) through (E) of this Part that will represent an Alternative Reasonably Available Control Technology; and,



- c. A schedule for attaining the Alternative Reasonably Available Control Technology emission limitations within two (2) years of it being approved.
2. All compliance date and emission limitations approved under § 51.7(F)(1) of this Part will not be final until approved by EPA as a SIP revision.
3. Alternative RACT will be approved only if the facility can demonstrate that economically, technically or both that neither reformulation nor the installation of a control system is feasible.

## **51.8 Compliance Schedules**

- A. The owner or operator of a facility that is subject to this regulation shall comply with the requirements of this regulation no later than the following dates:
  1. For any fiberglass boat manufacturing facility subject to this regulation for which construction commenced prior to January 1, 2019, the compliance date is either January 1, 2022 or the date of initial startup of the fiberglass boat manufacturing facility, whichever is later.
  2. For any fiberglass boat manufacturing facility subject to this regulation for which construction commenced on or after the January 1, 2019, compliance shall be achieved upon commencing operation.

## **51.9 Work Practice Standards**

- A. All resin and gel coat containers with a capacity equal to or greater than fifty-five (55) gallons, including those used for on-site mixing of putties and polyester resin putties, shall have a cover with no visible gaps in place at all times except when materials are being manually added to or removed from a container, or when mixing equipment is being placed or removed from a container.
- B. The volatile organic compound content of cleaning solvents employed for routine application equipment cleaning shall contain a maximum of five percent (5%) VOC by weight, as applied or have a composite vapor pressure of no more than 0.50 mm Hg at sixty-eight degrees Fahrenheit (68°F), as determined by the cleaning solvent manufacturer's Safety Data Sheet or other appropriate documentation acceptable to the Department and EPA.
- C. Only non-volatile organic compound solvents shall be used to remove cured resin and gel coat from application equipment.

## **51.10 Monitoring and Recordkeeping Requirements**

- A. The owner or operator of a fiberglass boat manufacturing facility that is subject to the monomer and non-monomer VOC requirements of this regulation shall collect

and record the following information for each operation subject to this regulation on a monthly basis:

1. The name and identification number of each resin and gel coat;
2. The total quantity of atomized molding production resin, non-atomized production resin, pigmented gel coat, clear gel coat, atomized tooling resin, non-atomized tooling resin and tooling gel coat used per month;
3. The monomer VOC content for each resin and gel coat;
4. The non-monomer VOC content for each resin and gel coat;
5. All calculations performed pursuant to § 51.7 of this Part.
6. For each cleaning solvent employed for routine application equipment cleaning, either the volatile organic compound content, by weight percent or the composite vapor pressure, in mmHg; whichever is the applicable requirement selected to comply with the cleaning solvent requirements of § 51.9(B) of this Part.

### **51.11 Testing**

The monomer VOC content of resin and gel coat shall be determined by using SCAQMD Method 312-91, incorporated in § 51.4 of this Part, unless the facility maintains records from the manufacturer to document the monomer VOC content of resin and gel coat materials.

### **51.12 General Requirement**

The owner or operator of a fiberglass boat manufacturing facility subject to this regulation shall comply with the provisions of Part 9 of this Subchapter (Air Pollution Control Permits) as applicable.