

performance test. You must begin complying with the operating limits for your affected source on the date you complete the performance tests specified in paragraph (a)(1) of this section. The requirements in this paragraph (a)(4) do not apply to solvent recovery systems for which you conduct liquid-liquid material balances.

(b) *Existing affected sources.* For an existing affected source, you must meet the requirements of paragraphs (b)(1) through (3) of this section.

(1) All emission capture systems, add-on control devices, and CPMS must be installed and operating no later than the applicable compliance date specified in § 63.4883. Except for solvent recovery systems for which you conduct liquid-liquid material balances according to § 63.4961(j), you must conduct a performance test of each capture system and add-on control device according to the procedures in §§ 63.4963, 63.4964, and 63.4965, and establish the operating limits required by § 63.4892, no later than the compliance date specified in § 63.4883. For a solvent recovery system for which you conduct liquid-liquid material balances according to § 63.4961(j), you must initiate the first material balance no later than the compliance date specified in § 63.4883.

(2) You must develop and begin implementing the work practice plan required by § 63.4893 no later than the compliance date specified in § 63.4883.

(3) You must complete the initial compliance demonstration for the initial compliance period according to the requirements of § 63.4961. The initial compliance period begins on the applicable compliance date specified in § 63.4883 and ends on the last day of the first full month following the compliance date. The initial compliance demonstration includes the results of emission capture system and add-on control device performance tests conducted according to §§ 63.4963, 63.4964, and 63.4965; results of liquid-liquid material balances conducted according to § 63.4961(j); calculations showing whether the organic HAP emission rate for the initial compliance period was equal to or less than the emission limit in § 63.4890(c); the operating limits established during the performance tests and the results of the continuous pa-

rameter monitoring required by § 63.4967; and documentation of whether you developed and implemented the work practice plan required by § 63.4893.

#### § 63.4961 How do I demonstrate initial compliance?

(a) *When add-on controls are used.* You may use the emission rate with add-on controls option for any coating operation, for any group of coating operations in the affected source, or for all of the coating operations in the affected source. You may include both controlled and uncontrolled coating operations in a group for which you use this option. You must use either the compliant material option or the emission rate without add-on controls option for any coating operation in the affected source for which you do not use the emission rate with add-on controls option. To demonstrate initial compliance, the coating operation or group of coating operations for which you use the emission rate with add-on controls option must meet the applicable emission limit in § 63.4890, and each controlled coating operation must meet the operating limits and work practice standards required in §§ 63.4892 and 63.4893, respectively. You must meet all the requirements of this section to demonstrate initial compliance with the emission limitations. When calculating the organic HAP emission rate according to this section, do not include any coatings, thinners, or cleaning materials used on coating operations for which you use the compliant material option or the emission rate without add-on controls option.

(b) *Compliance with operating limits.* Except as provided in § 63.4960(a)(4), you must establish and demonstrate continuous compliance during the initial compliance period with the operating limits required by § 63.4892, using the procedures specified in §§ 63.4966 and 63.4967.

(c) *Compliance with work practice requirements.* You must develop, implement, and document your implementation of the work practice plan required by § 63.4893 during the initial compliance period, as specified in § 63.4930.

(d) *Compliance with emission limits.* You must follow the procedures in

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paragraphs (e) through (m) of this section to demonstrate compliance with the applicable emission limit in §63.4890.

(e) *Determine the mass fraction of organic HAP, density, volume used, and volume fraction of coating solids.* Follow the procedures specified in §63.4951(a) through (d) to determine the mass fraction of organic HAP, density, and volume of each coating, thinner, and cleaning material used during each compliance period and the volume fraction of coating solids for each coating used during each compliance period.

(f) *Calculate the total mass of organic HAP emissions before add-on controls.* Using Equation 1 of §63.4951, calculate the total mass of organic HAP emissions before add-on controls from all coatings, thinners, and cleaning materials used during the compliance period.

(g) *Calculate the organic HAP emission reduction for each controlled coating operation.* Determine the mass of organic HAP emissions reduced for each controlled coating operation during each compliance period. The emission reduction determination quantifies the total organic HAP emissions that pass through the emission capture system and are destroyed or removed by the add-on control device. Use the procedures in paragraph (h) of this section to calculate the mass of organic HAP emission reduction for each controlled coating operation using an emission capture system and add-on control device other than a solvent recovery sys-

tem for which you conduct liquid-liquid material balances. For each controlled coating operation using a solvent recovery system for which you conduct a liquid-liquid material balance, use the procedures in paragraph (j) of this section to calculate the organic HAP emission reduction.

(h) *Calculate the organic HAP emission reduction for controlled coating operations not using liquid-liquid material balance.* For each controlled coating operation using an emission capture system and add-on control device other than a solvent recovery system for which you conduct liquid-liquid material balances, calculate the organic HAP emission reduction, using Equation 1 of this section. The calculation applies the emission capture system efficiency and add-on control device efficiency to the mass of organic HAP contained in the coatings, thinners, and cleaning materials that are used in the coating operation served by the emission capture system and add-on control device during the compliance period. For any period of time a deviation specified in §63.4962(c) or (d) occurs in the controlled coating operation, including a deviation during a period of startup, shutdown, or malfunction, you must assume zero efficiency for the emission capture system and add-on control device. Equation 1 of this section treats the materials used during such a deviation as if they were used on an uncontrolled coating operation for the time period of the deviation:

$$H_R = (A_I + B_I + C_I - R_w) \left( \frac{CE}{100} \times \frac{DRE}{100} \right) + H_{unc} \quad (\text{Eq. 1})$$

Where:

- H<sub>R</sub> = Mass of organic HAP emission reduction for the controlled coating operation during the compliance period, kg.
- A<sub>I</sub> = Total mass of organic HAP in the coatings used in the controlled coating operation during the compliance period, excluding coatings used during deviations, kg, as calculated in Equation 1A of this section.
- B<sub>I</sub> = Total mass of organic HAP in the thinners used in the controlled coating operation during the compliance period, ex-

- cluding thinners used during deviations, kg, as calculated in Equation 1B of this section.
- C<sub>I</sub> = Total mass of organic HAP in the cleaning materials used in the controlled coating operation during the compliance period, excluding cleaning materials used during deviations, kg, as calculated in Equation 1C of this section.
- R<sub>w</sub> = Total mass of organic HAP in waste materials sent or designated for shipment to a hazardous waste TSDF for

treatment or disposal during the compliance period, kg, determined according to § 63.4951(e)(4). The mass of any waste material reused during the same compliance period may not be included in  $R_w$ . (You may assign a value of zero to  $R_w$  if you do not wish to use this allowance.)

**CE** = Capture efficiency of the emission capture system vented to the add-on control device, percent. Use the test methods and procedures specified in §§ 63.4963 and 63.4964 to measure and record capture efficiency.

**DRE** = Organic HAP destruction or removal efficiency of the add-on control device, percent. Use the test methods and procedures in §§ 63.4963 and 63.4965 to measure and record the organic HAP destruction or removal efficiency.

**H<sub>unc</sub>** = Total mass of organic HAP in the coatings, thinners, and cleaning materials used during all deviations specified in § 63.4962(c) and (d) that occurred during the compliance period in the controlled coating operation, kg, as calculated in Equation 1D of this section.

(1) Calculate the mass of organic HAP in the coatings used in the controlled coating operation, using Equation 1A of this section. Do not include in the calculation the coatings used during any deviation specified in § 63.4962(c) or (d) that occurred during the month. Include such coatings in the calculation of the total mass of organic HAP in the coatings, thinners, and cleaning materials used during all deviations that occurred during the compliance period in the controlled coating operation in Equation 1D of this section.

$$A_I = \sum_{i=1}^m (\text{Vol}_{c,i}) (D_{c,i}) (W_{c,i}) \quad (\text{Eq. 1A})$$

Where:

**A<sub>I</sub>** = Total mass of organic HAP in the coatings used in the controlled coating operation during the compliance period, excluding coatings used during deviations, kg.

**Vol<sub>c,i</sub>** = Total volume of coating, i, used during the compliance period except during deviations, liters.

**D<sub>c,i</sub>** = Density of coating, i, kg per liter.

**W<sub>c,i</sub>** = Mass fraction of organic HAP in coating, i, kg per kg.

**m** = Number of different coatings used.

(2) Calculate the mass of organic HAP in the thinners used in the controlled coating operation, using Equation 1B of this section. Do not include

in the calculation the thinners used during any deviation specified in § 63.4962(c) or (d) that occurred during the month. Include such coatings in the calculation of the total mass of organic HAP in the coatings, thinners, and cleaning materials used during all deviations that occurred during the compliance period in the controlled coating operation in Equation 1D of this section.

$$B_I = \sum_{j=1}^n (\text{Vol}_{t,j}) (D_{t,j}) (W_{t,j}) \quad (\text{Eq. 1B})$$

Where:

**B<sub>I</sub>** = Total mass of organic HAP in the thinners used in the controlled coating operation during the compliance period, excluding thinners used during deviations, kg.

**Vol<sub>t,j</sub>** = Total volume of thinner, j, used during the compliance period except during deviations, liters.

**D<sub>t,j</sub>** = Density of thinner, j, kg per liter.

**W<sub>t,j</sub>** = Mass fraction of organic HAP in thinner, j, kg per kg.

**n** = Number of different thinners used.

(3) Calculate the mass of organic HAP in the cleaning materials used in the controlled coating operation, using Equation 1C of this section. Do not include in the calculation the cleaning materials used during any deviation specified in § 63.4962(c) or (d) that occurred during the compliance period. Include such cleaning materials in the calculation of the total mass of organic HAP in the coatings, thinners, and cleaning materials used during all deviations that occurred during the compliance period in the controlled coating operation in Equation 1D of this section.

$$C_I = \sum_{k=1}^p (\text{Vol}_{s,k}) (D_{s,k}) (W_{s,k}) \quad (\text{Eq. 1C})$$

Where:

**C<sub>I</sub>** = Total mass of organic HAP in the cleaning materials used in the controlled coating operation during the compliance period, excluding cleaning materials used during deviations, kg.

**Vol<sub>s,k</sub>** = Total volume of cleaning material, k, used during the compliance period except during deviations, liters.

**D<sub>s,k</sub>** = Density of cleaning material, k, kg per liter.

**W<sub>s,k</sub>** = Mass fraction of organic HAP in cleaning material, k, kg per kg.

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p = Number of different cleaning materials used.

(4) Calculate the mass of organic HAP in the coatings, thinners, and cleaning materials used in the controlled coating operation during deviations specified in § 63.4962(c) and (d), using Equation 1D of this section:

$$H_{\text{unc}} = \sum_{h=1}^q (\text{Vol}_h) (D_h) (W_h) \quad (\text{Eq. 1D})$$

Where:

$H_{\text{unc}}$  = Total mass of organic HAP in the coatings, thinners, and cleaning materials used during all deviations specified in § 63.4962(c) and (d) that occurred during the compliance period in the controlled coating operation, kg.

$\text{Vol}_h$  = Total volume of coating, thinner, or cleaning material, h, used in the controlled coating operation during deviations, liters.

$D_h$  = Density of coating, thinner, or cleaning material, h, kg per liter.

$W_h$  = Mass fraction of organic HAP in coating, thinner, or cleaning material, h, kg organic HAP per kg coating.

q = Number of different coatings, thinning solvents, or cleaning materials.

(i) [Reserved]

(j) *Calculate the organic HAP emission reduction for controlled coating operations using liquid-liquid material balance.* For each controlled coating operation using a solvent recovery system for which you conduct liquid-liquid material balances, calculate the organic HAP emission reduction by applying the volatile organic matter collection and recovery efficiency to the mass of organic HAP contained in the coatings, thinners, and cleaning materials that are used in the coating operation controlled by the solvent recovery system during the compliance period. Perform a liquid-liquid material balance for each compliance period as specified in paragraphs (j)(1) through (6) of this section. Calculate the mass of organic HAP emission reduction by the solvent recovery system as specified in paragraph (j)(7) of this section.

(1) For each solvent recovery system, you must install, calibrate, maintain, and operate according to the manufacturer's specifications, a device that indicates the cumulative amount of volatile organic matter recovered by the solvent recovery system each compliance period. The device must be initially certified by the manufacturer to be accurate to within  $\pm 2.0$  percent of the mass of volatile organic matter recovered.

(2) For each solvent recovery system, determine the mass of volatile organic matter recovered for the compliance period, based on measurement with the device required in paragraph (j)(1) of this section.

(3) Determine the mass fraction of volatile organic matter for each coating, thinner, and cleaning material used in the coating operation controlled by the solvent recovery system during the compliance period. You may determine the volatile organic matter mass fraction using Method 24 of 40 CFR part 60, appendix A, or an EPA-approved alternative method, or you may use information provided by the manufacturer or supplier of the coating. In the event of any inconsistency between information provided by the manufacturer or supplier and the results of Method 24 of 40 CFR part 60, appendix A, or an approved alternative method, the test method results will govern.

(4) Determine the density of each coating, thinner, and cleaning material used in the coating operation controlled by the solvent recovery system during the compliance period according to § 63.4951(c).

(5) Measure the volume of each coating, thinner, and cleaning material used in the coating operation controlled by the solvent recovery system during the compliance period.

(6) For each compliance period, calculate the solvent recovery system's volatile organic matter collection and recovery efficiency, using Equation 2 of this section:

$$R_v = 100 \frac{M_{VR}}{\sum_{i=1}^m \text{Vol}_i D_i W_{v,c,i} + \sum_{j=1}^n \text{Vol}_j D_j W_{v,t,j} + \sum_{k=1}^p \text{Vol}_k D_k W_{v,s,k}} \quad (\text{Eq. 2})$$

Where:

- $R_v$  = Volatile organic matter collection and recovery efficiency of the solvent recovery system during the compliance period, percent.
- $M_{VR}$  = Mass of volatile organic matter recovered by the solvent recovery system during the compliance period, kg.
- $\text{Vol}_i$  = Volume of coating, i, used in the coating operation controlled by the solvent recovery system during the compliance period, liters.
- $D_i$  = Density of coating, i, kg per liter.
- $W_{v,c,i}$  = Mass fraction of volatile organic matter for coating, i, kg volatile organic matter per kg coating.
- $\text{Vol}_j$  = Volume of thinner, j, used in the coating operation controlled by the solvent recovery system during the compliance period, liters.
- $D_j$  = Density of thinner, j, kg per liter.
- $W_{v,t,j}$  = Mass fraction of volatile organic matter for thinner, j, kg volatile organic matter per kg thinner.
- $\text{Vol}_k$  = Volume of cleaning material, k, used in the coating operation controlled by

- the solvent recovery system during the compliance period, liters.
- $D_k$  = Density of cleaning material, k, kg per liter.
- $W_{v,s,k}$  = Mass fraction of volatile organic matter for cleaning material, k, kg volatile organic matter per kg cleaning material.
- $m$  = Number of different coatings used in the coating operation controlled by the solvent recovery system during the compliance period.
- $n$  = Number of different thinners used in the coating operation controlled by the solvent recovery system during the compliance period.
- $p$  = Number of different cleaning materials used in the coating operation controlled by the solvent recovery system during the compliance period.

(7) Calculate the mass of organic HAP emission reduction for the coating operation controlled by the solvent recovery system during the compliance period, using Equation 3 of this section:

$$H_{CSR} = (A_{CSR} + B_{CSR} + C_{CSR}) \left( \frac{R_v}{100} \right) \quad (\text{Eq. 3})$$

Where:

- $H_{CSR}$  = Mass of organic HAP emission reduction for the coating operation controlled by the solvent recovery system during the compliance period, kg.
- $A_{CSR}$  = Total mass of organic HAP in the coatings used in the coating operation controlled by the solvent recovery system, kg, calculated using Equation 3A of this section.
- $B_{CSR}$  = Total mass of organic HAP in the thinners used in the coating operation controlled by the solvent recovery system, kg, calculated using Equation 3B of this section.
- $C_{CSR}$  = Total mass of organic HAP in the cleaning materials used in the coating operation controlled by the solvent recovery system, kg, calculated using Equation 3C of this section.
- $R_v$  = Volatile organic matter collection and recovery efficiency of the solvent recovery

system, percent, from Equation 2 of this section.

(i) Calculate the mass of organic HAP in the coatings used in the coating operation controlled by the solvent recovery system, kg, using Equation 3A of this section.

$$A_{CSR} = \sum_{i=1}^m (\text{Vol}_{c,i}) (D_{c,i}) (W_{c,i}) \quad (\text{Eq. 3A})$$

Where:

- $A_{CSR}$  = Total mass of organic HAP in the coatings used in the coating operation controlled by the solvent recovery system during the month, kg.
- $\text{Vol}_{c,i}$  = Total volume of coating, i, used during the month in the coating operation

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controlled by the solvent recovery system, liters.

$D_{c,i}$  = Density of coating, i, kg coating per liter coating.

$W_{c,i}$  = Mass fraction of organic HAP in coating, i, kg organic HAP per kg coating.

$m$  = Number of different coatings used.

(ii) Calculate the mass of organic HAP in the thinners used in the coating operation controlled by the solvent recovery system, using Equation 3B of this section:

$$B_{CSR} = \sum_{j=1}^n (Vol_{t,j}) (D_{t,j}) (W_{t,j}) \quad (\text{Eq. 3B})$$

Where:

$B_{CSR}$  = Total mass of organic HAP in the thinners used in the coating operation controlled by the solvent recovery system during the month, kg.

$Vol_{t,j}$  = Total volume of thinner, j, used during the month in the coating operation controlled by the solvent recovery system, liters.

$D_{t,j}$  = Density of thinner, j, kg thinner per liter thinner.

$W_{t,j}$  = Mass fraction of organic HAP in thinner, j, kg organic HAP per kg thinner.

$n$  = Number of different thinners used.

(iii) Calculate the mass of organic HAP in the cleaning materials used in the coating operation controlled by the solvent recovery system during the month, using Equation 3C of this section:

$$C_{CSR} = \sum_{k=1}^p (Vol_{s,k}) (D_{s,k}) (W_{s,k}) \quad (\text{Eq. 3C})$$

Where:

$C_{CSR}$  = Total mass of organic HAP in the cleaning materials used in the coating operation controlled by the solvent recovery system during the month, kg.

$Vol_{s,k}$  = Total volume of cleaning material, k, used during the month in the coating operation controlled by the solvent recovery system, liters.

$D_{s,k}$  = Density of cleaning material, k, kg cleaning material per liter cleaning material.

$W_{s,k}$  = Mass fraction of organic HAP in cleaning material, k, kg organic HAP per kg cleaning material.

$p$  = Number of different cleaning materials used.

(k) *Calculate the total volume of coating solids used.* Calculate the total volume of coating solids used, which is the combined volume of coating solids for all the coatings used during the compliance period, using Equation 2 of § 63.4951.

(l) *Calculate the organic HAP emissions rate.* Calculate the organic HAP emission rate to the atmosphere, using Equation 4 of this section:

$$H_{hap} = \frac{H_c - \sum_{i=1}^q (H_{R,i}) - \sum_{j=1}^r (H_{CSR,j})}{V_{st}} \quad (\text{Eq. 4})$$

Where:

$H_{hap}$  = Organic HAP emission rate for the compliance period, kg organic HAP per liter coating solids.

$H_c$  = Total mass of organic HAP emissions before add-on controls from all the coatings, thinners, and cleaning materials used during the compliance period, kg, determined according to paragraph (f) of this section.

$H_{R,i}$  = Total mass of organic HAP emission reduction for controlled coating operation, i, not using liquid-liquid material balances, during the compliance period, kg, from Equation 1 of this section.

$H_{CSR,j}$  = Total mass of organic HAP emission reduction for controlled coating operation, j, using a liquid-liquid material balance, during the compliance period, kg, from Equation 3 of this section.

$V_{st}$  = Total volume of coating solids used during the compliance period, liters, from Equation 2 of § 63.4951.

$q$  = Number of controlled coating operations except those controlled with a solvent recovery system.

$r$  = Number of coating operations controlled with a solvent recovery system.

(m) *Compliance demonstration.* To demonstrate initial compliance with the emission limit during the compliance period as calculated using Equation 4 of this section, the HAP emission rate for the compliance period must be less than or equal to the applicable emission limit in § 63.4890. You must keep all records as required by §§ 63.4930 and 63.4931. As part of the Notification of Compliance Status required by § 63.4910 and the semiannual compliance reports required in § 63.4920, you must identify the coating operation or group of coating operations for

which you used the emission rate with add-on controls option. If there were no deviations from the emission limit, include a statement that the coating operation or group of coating operations was in compliance with the emission limitations during the initial compliance period because the organic HAP emission rate was less than or equal to the applicable emission limit in § 63.4890, and you achieved the operating limits required by § 63.4892 and the work practice standards required by § 63.4893.

**§ 63.4962 How do I demonstrate continuous compliance with the emission limitations?**

(a) Following the initial compliance period, you must complete a compliance demonstration according to the requirements in § 63.4961(m) for each subsequent compliance period. Each month following the initial compliance period described in § 63.4960 is a compliance period.

(b) If the organic HAP emission rate for any compliance period exceeded the applicable emission limit in § 63.4890, this is a deviation from the emission limitation for that compliance period and must be reported as specified in §§ 63.4910(c)(6) and 63.4920(a)(7).

(c) You must demonstrate continuous compliance with each operating limit required by § 63.4892 that applies to you, as specified in Table 1 to this subpart.

(1) If an operating parameter is out of the allowed range specified in Table 1 to this subpart, this is a deviation from the operating limit that must be reported as specified in §§ 63.4910(c)(6) and 63.4920(a)(7).

(2) If an operating parameter deviates from the operating limit specified in Table 1 to this subpart, then you must assume that the emission capture system and add-on control device were achieving zero efficiency during the time period of the deviation. For the purposes of completing the compliance calculations specified in § 63.4961, you must treat the materials used during a deviation on a controlled coating operation as if they were used on an uncontrolled coating operation for the time period of the deviation, as indicated in Equation 1 of § 63.4961.

(d) You must meet the requirements for bypass lines in § 63.4967(b) for controlled coating operations for which you do not conduct liquid-liquid material balances. If any bypass line is opened and emissions are diverted to the atmosphere when the coating operation is running, this is a deviation that must be reported as specified in §§ 63.4910(c)(6) and 63.4920(a)(7). For the purposes of completing the compliance calculations in § 63.4961, you must treat the materials used during a deviation on a controlled coating operation as if they were used on an uncontrolled coating operation for the time period of the deviation, as indicated in Equation 1 of § 63.4961.

(e) You must demonstrate continuous compliance with the work practice standards in § 63.4893. If you did not develop a work practice plan, or you did not implement the plan, or you did not keep the records required by § 63.4930(k)(8), this is a deviation from the work practice standards that must be reported as specified in §§ 63.4910(c)(6) and 63.4920(a)(7).

(f) As part of each semiannual compliance report required in § 63.4920, you must identify the coating operation or group of coating operations for which you used the emission rate with add-on controls option. If there were no deviations from the emission limitations, submit an affirmative statement that you were in compliance with the emission limitations during the reporting period because the organic HAP emission rate for each compliance period was less than or equal to the applicable emission limit in § 63.4890, and you achieved the operating limits required by § 63.4892 and the work practice standards required by § 63.4893 during each compliance period.

(g)–(h) [Reserved]

(i) You must maintain records as specified in §§ 63.4930 and 63.4931.

[68 FR 28619, May 23, 2003, as amended at 71 FR 20466, Apr. 20, 2006]

**§ 63.4963 What are the general requirements for performance tests?**

(a) You must conduct each performance test required by § 63.4960 according to the requirements in § 63.7(e)(1) and