

Step-by-Step F Compliance Demonstration

Single Capture and Control System, Emission Rate Demonstration

' 63.3370(f), (g), or (h)

Overview: This approach is valid when using a single control device (i.e., oxidizer or SRS) to demonstrate compliance with the MACT emission rate limits on a monthly average as-applied basis.

In this approach, a facility needs to:

1. Follow Step-by-Step B Compliance Demonstration.
2. Follow Step-by-Step C, D, or E Compliance Demonstration.
3. Determine the organic HAP emitted.
4. Calculate the monthly average organic HAP emission rates as-applied (L or S).
5. Calculate the monthly allowable HAP emission rate (H_a).
6. Compare to MACT limits.
7. Maintain monitoring and other compliance records.

MACT limits

Existing Affected Sources

$S \leq 0.04$ kg HAP/kg coating

or

$L \leq 0.20$ kg HAP/kg solids

New Affected Sources

$S \leq 0.016$ kg HAP/kg coating

or

$L \leq 0.08$ kg HAP/kg solids

Detailed Approach	Citation
<p>1. Follow Step-by-Step A, B1, B2, or B3 Compliance Demonstration.</p> <ul style="list-style-type: none"> • Identify all coatings and additives used in the process. • Gather “NESHAP quality” data for each coating and additive used in the process (mass and solids content) • Determine HAP content data per unit of coating or per unit of solids. 	<p>' 63.3370(i)(1)(i) and (iv), (i)(2)(v) and (vii), or (k)(1)(iv) and (vi)</p> <p>' 63.3370(i)(1)(ii), (i)(2)(vi), or (k)(1)(v)</p>
<p>2. Follow Step-by-Step C, D, or E Compliance Demonstration</p> <ul style="list-style-type: none"> • Determine and monitor the amount of volatile organic matter recovered (SRS liquid-liquid material balance, only) • Calculate the volatile organic matter collection and recovery efficiency (SRS liquid-liquid material balance, only) • Determine the control device efficiency (oxidizer and SRS CEM, only) • Determine the capture system efficiency (oxidizer and SRS CEM, only) • Calculate the overall organic HAP control efficiency 	<p>' 63.3370(i)(1)(v)</p> <p>' 63.3370(i)(1)(vi)</p> <p>' 63.3370(i)(2)(i) and (k)(1)(i)</p> <p>' 63.3370(i)(2)(iii) and (k)(1)(ii)</p> <p>' 63.3370(i)(2)(iv) and (k)(2)(i)</p>
<p>3. Determine the organic HAP emitted.</p> <p>Calculate the organic HAP emitted on a monthly basis using:</p> <ul style="list-style-type: none"> • Equation 8 if you are using a solvent recovery system and a liquid-liquid material balance; <p>OR</p> <ul style="list-style-type: none"> • Equation 12 if you are using a solvent recovery system and a CEM; 	<p>§63.3370(i)(1)(vii)</p> <p>OR</p> <p>' 63.3370(i)(2)(viii)</p> <p>OR</p>

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OR <ul style="list-style-type: none"> Equation 12 if you are using an oxidizer 	' 63.3370(k)(2)(ii)
4. Calculate the monthly average organic HAP emission rate as-applied per unit of solids (L) and/or per unit of coatings (S). If you choose to comply with the monthly average organic HAP emission rate, you must do one of the following. <ul style="list-style-type: none"> Calculate the organic HAP emission rate (L) based on coating solids applied (kg HAP/kg solids) using Equation 9. OR <ul style="list-style-type: none"> Calculate the organic HAP emission rate (S) based on coating materials applied (kg HAP/kg coatings) using Equation 10. 	' 63.3370(f) or (g) §63.3370(i)(1)(viii), (i)(2)(ix), and (k)(1)(iii) ' 63.3370(i)(1)(ix), (i)(2)(x), and (k)(1)(iv)
5. Determine the monthly allowable organic HAP emissions. If you choose to comply with the monthly allowable HAP emissions, you must do the following. <ul style="list-style-type: none"> Use the as-purchased mass of each coating material applied and the as-purchased coating solids content of each coating material applied (see item 1 of this detailed approach) Determine the as-purchased mass fraction of each coating material which was applied at 20 mass percent or greater coating solids content on an as-applied basis. Determine the total mass of each solvent, diluent, thinner, or reducer added to coating materials which were applied at less than 20 mass percent coating solids content on an as-applied basis each month. Calculate the monthly allowable organic HAP emission rate (H_a) using Equation 13a for existing sources or Equation 13b for new sources. 	' 63.3370(h) ' 63.3370(l)(1) and (2) ' 63.3370(l)(3) ' 63.3370(l)(4) ' 63.3370(l)(5)
6. Compare to MACT limits <ul style="list-style-type: none"> You are in compliance if $L \leq$ to 0.20 kg HAP/kg coating for existing affected sources or $L \leq$ 0.08 kg HAP/kg coating for new affected sources. You are in compliance if $S \leq$ to 0.04 kg HAP/kg coating for existing affected sources or $S \leq$ 0.16 kg HAP/kg coating for new affected sources. You are in compliance if H_e is $\leq H_a$ 	§63.3370(i)(1)(x)(B), (i)(2)(xi)(B) and (k)(3)(ii) §63.3370(i)(1)(x)(C), (i)(2)(xi)(C) and (k)(3)(iii) §63.3370(i)(1)(x)(D), (i)(2)(xi)(D) and (k)(3)(iv)

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<p>7. Maintain monitoring and other compliance records.</p> <ul style="list-style-type: none"> • Maintain continuous monitoring. • Maintain records of control device and capture system operating parameter data. • Maintain records of organic HAP content data • Maintain records of volatile matter and coating solids content data. • Maintain records of overall control efficiency determination using capture efficiency and control device destruction or removal efficiency test results. • Maintain records of all material usage, organic HAP usage, volatile matter usage, and coating solids usage and compliance demonstrations. • Maintain maintenance and calibration records for each mass flow meter • Maintain records of all liquid-liquid material balances. 	<p>§63.3410(a)(1)(i) ' 63.3410(a)(1)(ii)</p> <p>§63.3410(a)(1)(iii) §63.3410(a)(1)(iv) ' 63.3410(a)(1)(v)</p> <p>§63.3410(a)(1)(vi)</p> <p>§63.3410(a)(2) and ' 63.10(c) §63.3410(b)</p>

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