

# Step-by-Step D Compliance Demonstration

## Overall Control Efficiency, Single SRS, Liquid-Liquid Material Balance ' 63.3370(e) and (i)(1)

**Overview:** This approach is valid when using a single solvent recovery system (SRS) to demonstrate compliance with the volatile organic matter collection and recovery efficiency as determined through a liquid-liquid material balance. This approach only applies to always-controlled work stations. If you have one or more intermittently-controlled work station or one or more never-controlled work station, you must use Step-by-Step G.

<b>MACT limits</b>
<u>Existing Affected Sources</u> $R_v = \geq 95\%$
<u>New Affected Sources</u> $R_v = \geq 98\%$

In this approach, a facility needs to:

1. Identify all coatings and additives used in process.
2. Gather “NESHAP quality” data as-purchased for each coating and additive applied.
3. Install a mass flow meter in-line with the SRS.
4. Calculate the monthly volatile organic matter collection and recovery efficiencies.
5. Compare the monthly volatile organic matter collection and recovery efficiencies with the MACT limits.
6. Maintain monitoring and other compliance records.

Detailed Approach	Citation
<p><b>1. Identify all coatings and additives used in process.</b></p> <ul style="list-style-type: none"> <li>• Maintain records of volatile organic matter content data.</li> </ul>	§63.3370(i)(1)(i)
<p><b>2. Gather “NESHAP quality” data as-purchased for each coating and additive applied using one of the following [§63.3360(d)(1)].</b></p> <p><u>Method 24</u></p> <ul style="list-style-type: none"> <li>• Determine the volatile organic and coating solids as a mass fraction of non-aqueous volatile matter.</li> </ul> <p>OR</p> <p><u>Formulation data</u></p> <ul style="list-style-type: none"> <li>• Use volatile organic content and coating solids content data provided by the manufacturer of the material.</li> </ul>	§63.3370(i)(1)(iii)
<p><b>3. Install a mass flow meter in-line with the solvent recovery system.</b></p> <ul style="list-style-type: none"> <li>• Install, calibrate, maintain, and operate (according to the manufacturer’s specifications) a totalizing mass flow meter that indicates the cumulative amount of volatile matter recovered by the control device on a monthly basis [§63.3350(d)(2)].</li> <li>• The installed monitoring device must be certified by the manufacturer to be accurate to within <math>\pm 2.0</math> percent by mass [§63.3350(d)(2)].</li> <li>• Develop and submit for approval a testing protocol to determine the mass of volatile organic matter and HAP retained in the coated web or otherwise not emitted (if not assumed to be zero) [§63.3360(g)].</li> </ul>	§63.3370(i)(1)(v)

No HAP data is needed for this calculation since efficiency is based on VOC.

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Detailed Approach	Citation
<p><b>4. Calculate the monthly volatile organic matter collection and recovery efficiencies.</b></p> <ul style="list-style-type: none"> <li>Calculate the volatile organic matter collection and recovery efficiency, <math>R_V</math>, using Equation 7.</li> </ul>	§63.3370(i)(1)(vi)
<p><b>5. Compare the monthly volatile organic matter collection and recovery efficiencies with the MACT limits.</b></p> <ul style="list-style-type: none"> <li>You are in compliance if <math>R_V</math> is <math>\geq 95\%</math> for existing sources or is <math>\geq 98\%</math> for new sources.</li> <li>If monthly compliance with the MACT standard can not be demonstrated, a facility has the option of using the data from this step and data on HAP content data—as shown in Step-by-Step F.</li> </ul>	§63.3370(i)(1)(x)(A)
<p><b>Recommendation:</b></p> <p>Review a representative data set (e.g. 12 months) and compare the <math>R_V</math> values versus the MACT limits prior to compliance deadline. Establish a database or spreadsheet program to perform the necessary compliance calculations. Maintain parallel electronic and hard copy files of monthly results.</p>	
<p><b>6. Maintain monitoring and other compliance records.</b></p> <ul style="list-style-type: none"> <li>Maintain continuous monitoring records of volatile matter recovered by the solvent recovery device.</li> <li>Maintain records of organic HAP content data.</li> <li>Maintain records of volatile matter and coating solids content data.</li> <li>Maintain records of all material usage, organic HAP usage, volatile matter usage, and coating solids usage and compliance demonstrations.</li> <li>Maintain maintenance and calibration records for each mass flow meter</li> <li>Maintain records of all liquid-liquid material balances.</li> </ul>	<p>§63.3410(a)(1)(i)</p> <p>§63.3410(a)(1)(iii) §63.3410(a)(1)(iv)</p> <p>§63.3410(a)(1)(vi)</p> <p>§63.3410(a)(2) and ' 63.10(c)</p> <p>§63.3410(b)</p>

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