Step-by-Step B1 Compliance Demonstration
Individual As-Applied Compliant Coating Materials
§63.3370(c)(1) and (2)

Overview: This approach can be used if every coating meets one of the MACT limits as it is applied to the web and **no averaging across all coatings is needed** to demonstrate compliance.

In this approach, a facility needs to:

1. Identify all coatings and additives used in process.
2. Gather "NESHAP quality" data for each coating.
3. Calculate the as-applied organic HAP content mass fractions.
4. Demonstrate that each coating meets one of the applicable MACT limits.
5. Maintain compliance records.

MACT limits

Existing Affected Sources
$C_{ahi} \leq 0.04$ kg HAP/kg coating
or
$H_{si} \leq 0.20$ kg HAP/kg solids

New Affected Sources
$C_{ahi} \leq 0.016$ kg HAP/kg coating
or
$H_{si} \leq 0.08$ kg HAP/kg solids

See separate listing of all variables

Detailed Approach	
1. Identify all coatings and additives used in process. • Identify and maintain data sets for coating products and solvent or other additives	
2. Gather "NESHAP quality" data for each coating and additive, as-purchased, using one of the following methods: Method 311 • Organic HAPs that are OSHA defined carcinogens present at ≥ 0.1% percent by weight. • Organic HAPs that are present at concentrations ≥ 1.0% by weight. • Express mass fraction of organic HAPs to four places after the decimal point. • Calculate total mass fraction of organic HAPs by summing the individual mass fractions and express to three places after the decimal point.	§63.3360(c)(1) and App. A of Part 63.
OR Method 24 • Determine the VOC as a mass fraction of non-aqueous volatile matter and substitute for organic HAP content. • Calculate solids content from measured volatile content, if needed.	§63.3360(c)(2), (d)(1), and App. A of Part 60.
OR Formulation data • Provided by the manufacturer of the material. • Method 311 data takes precedence when available. • Formulation data must represent all organic HAP present ≥ 0.1% for OSHA defined carcinogens and ≥ 1.0% for other organic HAP compounds.	§63.3360(c)(3) and (d)(2)

Step-by-Step B1 Compliance Demonstration
Individual As-Applied Compliant Coating Materials
§63.3370(c)(1) and (2)

Detailed Approach

3. Calculate the as-applied organic HAP content mass fractions (C_{ahi} and H_{si}).

- If any coating material is added to the original coating before application, determine the weighted average organic HAP content of the final coating by summing the weight of each constituent (first the coating itself and then the sum of all other materials) and dividing by the total product weight, using Equation 1a. — §63.3370(c)(1)

Note: Equation 1b is the same as 1a except that VOC content is used instead of HAP content. Must then equate VOC to HAP.

While the equations separate "coating material" from other "added material," there is no effect of this designation on the calculation- as long as all materials are included.

- To show compliance with the organic HAP content as a percent of solids, you will need to use Equation 2 and then Equation 3. Equation 2 calculates the weighted average solids content of the final coating by summing the solids content of each coating constituent (first the coating itself and then the sum of all other materials) and dividing by the total product weight. — §63.3370(c)(2)

- Equation 3 divides the value in Equation 1a (or 1b, if assuming all VOC is HAP) by the value in Equation 2 to obtain the HAP weight per weight of solids. — §63.3370(c)(2)

4. Demonstrate that <u>each coating</u>, as-applied, meets one of the applicable MACT limits.

- The organic HAP content is determined as-applied using equations 1 through 3 (item 3 of this detailed approach). — §63.3370(c)
- If coating materials are applied to the web without any solvent or other material added, then the as-applied organic HAP mass fraction reduces to the as-purchased organic HAP mass fraction. — §63.3370(b)
- You are in compliance if C_{ahi} or H_{si} meet the applicable MACT limits.
- C_{ahi} or H_{si} need to be calculated for each coating used in a month.

5. Maintain compliance records.

- Maintain records of organic HAP content data. — §63.3410(a)(1)(iii)
- Maintain records of volatile matter and coating solids content data — §63.3410(a)(1)(iv)

Step-by-Step B1 Compliance Demonstration
Individual As-Applied Compliant Coating Materials
§63.3370(c)(1) and (2)

Detailed Approach	
• Maintain records of material usage, organic HAP usage, volatile matter usage, and coating solids usage, and compliance demonstrations.	§63.3410(a)(1)(vi)

Credits: This document was made possible through the efforts of the POWC Implementation Tool Development Partnership effort, an effort to bring together the regulated and regulatory community. It was through a group effort that this document was developed. The logo of the partner who was the lead for this tool is listed first below. To see a description of our partners or to get more information about the partnership effort, see http://wwww.epa.gov/ttn/atw/powc/powcpg.html