

surrogate for organic HAP capture efficiency. For the protocols in paragraphs (c) and (d) of this section, the capture efficiency measurement must consist of three test runs. Each test run must be at least 3 hours duration or the length of a production run, up to 8 hours.

(c) *Liquid-to-uncaptured-gas protocol using a temporary total enclosure or building enclosure.* The liquid-to-uncaptured-gas protocol compares the mass of liquid TVH in regulated materials applied in the web coating/printing or dyeing/finishing operation to the mass of TVH emissions not captured by the emission capture system. Use a temporary total enclosure or a building enclosure and the procedures in paragraphs (c)(1) through (6) of this

section to measure emission capture system efficiency using the liquid-to-uncaptured-gas protocol.

(1) Either use a building enclosure or construct an enclosure around the web coating/printing or dyeing/finishing operation where regulated materials are applied, and all areas where emissions from these applied regulated materials subsequently occur, such as flash-off, curing, and drying areas. The areas of the web coating/printing or dyeing/finishing operation where capture devices collect emissions for routing to an add-on control device, such as the entrance and exit areas of an oven or tenter frame, must also be inside the enclosure. The enclosure must meet the applicable definition of a temporary total enclosure or building enclosure in

Method 204 of appendix M to 40 CFR part 51.

(2) Use Method 204A or 204F of appendix M to 40 CFR part 51 to determine the mass fraction of TVH liquid input from each regulated material used in the web coating/printing or dyeing/finishing operation during each capture efficiency test run. To make the determination, substitute TVH for each occurrence of the term volatile organic compounds (VOC) in the methods.

(3) Use Equation 1 of this section to calculate the total mass of TVH liquid input from all the regulated materials applied in the web coating/printing or dyeing/finishing operation during each capture efficiency test run.

$$\text{TVH}_{\text{applied}} = \sum_{i=1}^n (\text{TVH}_i) (M_i) \quad (\text{Eq. 1})$$

Where:

$\text{TVH}_{\text{applied}}$ = Mass of liquid TVH in regulated materials applied in the web coating/printing or dyeing/finishing operation during the capture efficiency test run, kg.

TVH_i = Mass fraction of TVH in regulated material, i , that is applied in the web coating/printing or dyeing/finishing operation during the capture efficiency test run, kg TVH per kg material.

M_i = Total mass of regulated material, i , applied in the web coating/printing or dyeing/finishing operation during the capture efficiency test run, kg.

n = Number of different regulated materials applied in the web coating/printing or dyeing/finishing operation during the capture efficiency test run.

(4) Use Method 204D or E of appendix M to 40 CFR part 51 to measure the total mass, kg, of TVH emissions that are not captured by the emission capture system; they are measured as they exit the temporary total enclosure or building enclosure during each capture efficiency test run. To make the measurement, substitute TVH for each occurrence of the term VOC in the methods.

(i) Use Method 204D if the enclosure is a temporary total enclosure.

(ii) Use Method 204E if the enclosure is a building enclosure. During the capture efficiency measurement, all organic compound-emitting operations inside the building enclosure, other than the web coating/printing or dyeing/finishing operation for which capture efficiency is being determined, must be shut down, but all fans and blowers must be operating normally.

(5) For each capture efficiency test run, determine the percent capture efficiency of the emission capture system using Equation 2 of this section:

$$\text{CE} = \frac{(\text{TVH}_{\text{applied}} - \text{TVH}_{\text{uncaptured}})}{\text{TVH}_{\text{applied}}} \times 100 \quad (\text{Eq. 2})$$

Where:

CE = Capture efficiency of the emission capture system vented to the add-on control device, percent.

$\text{TVH}_{\text{applied}}$ = Total mass of TVH liquid input applied in the web coating/printing or dyeing/finishing operation during the capture efficiency test run, kg.

$\text{TVH}_{\text{uncaptured}}$ = Total mass of TVH that is not captured by the emission capture system and that exits from the temporary total enclosure or building enclosure during the capture efficiency test run, kg.

(6) Determine the capture efficiency of the emission capture system as the

average of the capture efficiencies measured in the three test runs.

(d) *Gas-to-gas protocol using a temporary total enclosure or a building enclosure.* The gas-to-gas protocol compares the mass of TVH emissions captured by the emission capture system to the mass of TVH emissions not captured. Use a temporary total enclosure or a building enclosure and the procedures in paragraphs (d)(1) through (5) of this section to measure emission capture system efficiency using the gas-to-gas protocol.

(1) Either use a building enclosure or construct an enclosure around the web coating/printing or dyeing/finishing operation where regulated materials are

applied, and all areas where emissions from these applied regulated materials subsequently occur, such as flash-off, curing, and drying areas. The areas of the web coating/printing or dyeing/finishing operation where capture devices collect emissions generated by the web coating/printing or dyeing/finishing operation for routing to an add-on control device, such as the entrance and exit areas of an oven or a tenter frame, must also be inside the enclosure. The enclosure must meet the applicable definition of a temporary total enclosure or building enclosure in Method 204 of appendix M to 40 CFR part 51.