COSMOS
Navigate the Compliance Universe

40 C.F.R. § 63.1414

Test methods and emission estimation equations.

(a) *Test methods.* When required to conduct a performance test, the owner or operator shall use the test methods specified in paragraphs (a)(1) through (6) of this section, except where another section of this subpart requires either the use of a specific test method or the use of requirements in another subpart containing specific test method requirements.

(1) Method 1 or 1A, 40 CFR part 60, appendix A, shall be used for selection of the sampling sites if the flow measuring device is a pitot tube, except that references to particulate matter in Method 1A do not apply for the purposes of this subpart. No traverse is necessary when Method 2A or 2D, 40 CFR part 60, appendix A is used to determine gas stream volumetric flow rate.

(2) Method 2, 2A, 2C, or 2D, 40 CFR part 60, appendix A, is used for velocity and volumetric flow rates.

(3) Method 3, 40 CFR part 60, appendix A, is used for gas analysis.

(4) Method 4, 40 CFR part 60, appendix A, is used for stack gas moisture.

(5) The following methods shall be used to determine the organic HAP concentration.

(i) Method 316 or Method 320, 40 CFR part 60, appendix A, shall be used to determine the concentration of formaldehyde.

(ii) Method 18, 40 CFR part 60, appendix A, shall be used to determine the concentration of all organic HAP other than formaldehyde.

(iii) Method 308, 40 CFR part 60, appendix A, may be used as an alternative to Method 18 to determine the concentration of methanol.

(6) When complying with the alternative standard, as specified in § 63.1413(f), the owner or operator shall use a Fourier Transform Infrared Spectroscopy (FTIR) instrument following Method PS-15, 40 CFR part 60, appendix B.

(b) *Batch process vent performance testing procedures*—(1) *Average batch vent flow rate determination.* The average batch vent flow rate for a batch emission episode shall be calculated using Equation 1 of this section:

$$AFR_{episode} = \frac{\sum_{i=1}^{n} FR_i}{n} \qquad \text{[Eq. 1]}$$

Where:

$AFR_{episode}$ = Average batch vent flow rate for the batch emission episode, scmm. FR_i = Volumetric flow rate for individual measurement i, taken every 15 minutes using the procedures in paragraph (a)(2) of this section, scmm. n = Number of flow rate measurements taken during the batch emission episode.

(2) *Average batch vent concentration determination using an integrated sample.* If an integrated sample is taken over the entire batch emission episode to determine the average batch vent concentration of total organic HAP, organic HAP emissions shall be calculated using Equation 2 of this section:

$$E_{episode} = K\left[\sum_{j=1}^{n}(C_j)(M_j)\right]AFR(T_k) \qquad \text{[Eq. 2]}$$

Where:

$E_{episode}$ = Emissions, kg/episode. K = Constant, 2.494 × 10-6 (ppmv)-1 (gm-mole/scm) (kg/gm) (min/hr), where standard temperature is 20 °C. C_j = Average batch vent concentration of sample organic HAP component j of the gas stream, dry basis, ppmv. M_j = Molecular weight of sample organic HAP component j of the gas stream, gm/gm-mole. AFR = Average batch vent flow rate of gas stream, dry basis, scmm. T_h = Hours/episode. n = Number of organic HAP in stream.

(3) *Average batch vent concentration determination using grab samples.* If grab samples are taken to determine the average batch vent concentration of total organic HAP, organic HAP emissions shall be calculated as follows:

(i) For each measurement point, the emission rate shall be calculated using Equation 3 of this section:

$$\text{Epoint} = K\left[\sum_{j=1}^{n}C_jM_j\right]FR \qquad [Eq.\ 3]$$

Where:

E_{point} = Emission rate for individual measurement point, kg/hr. K = Constant, 2.494 × 10-6 (ppmv)-1 (gm-mole/scm) (kg/gm) (min/hr), where standard temperature is 20 °C. C_j = Concentration of sample organic HAP component j of the gas stream, dry basis, ppmv. M_j = Molecular weight of sample organic HAP component j of the gas stream, gm/gm-mole. FR = Flow rate of gas stream for the measurement point, dry basis, scmm. n = Number of organic HAP in stream.

(ii) The organic HAP emissions per batch emission episode shall be calculated using Equation 4 of this section:

$$E_{episode} = (DUR)\left[\sum_{i=1}^{n}\frac{E_i}{n}\right] \qquad [Eq.\ 4]$$

Where:

episode = Emissions, kg/episode. DUR = Duration of the batch emission episode, hr/episode. E_i = Emissions for measurement point i, kg/hr. n = Number of measurements.

(4) *Control device efficiency determination for a batch emission episode.* The control efficiency for the control device shall be calculated using Equation 5 of this section:

$$R = \frac{\sum_{i=1}^{n} E_{inlet,i} - \sum_{i=1}^{n} E_{outlet,i}}{\sum_{i=1}^{n} E_{inlet,i}} (100) \qquad [Eq.\ 5]$$

Where:

R = Control efficiency of control device, percent. E_{inlet} = Mass rate of total organic HAP for batch emission episode i at the inlet to the control device as calculated under paragraph (b)(2) or (b)(3) of this section, kg/episode. E_{outlet} = Mass rate of total organic HAP for batch emission episode i at the outlet of the control device, as calculated under paragraph (b)(2) or (b)(3) of this section, kg/episode. n = Number of batch emission episodes in the batch cycle selected to be controlled.