

§ 63.9324

40 CFR Ch. I (7-1-07 Edition)

(4) Use Method 4 of appendix A to 40 CFR part 60, to determine stack gas moisture.

(5) Methods for determining gas volumetric flow rate, dry molecular weight, and stack gas moisture must be performed, as applicable, during each test run.

(b) Measure total gaseous organic mass emissions as carbon at the inlet and outlet of the add-on control device simultaneously, using either Method 25 or 25A of appendix A to 40 CFR part 60, as specified in paragraphs (b)(1) through (3) of this section. You must use the same method for both the inlet and outlet measurements.

(1) Use Method 25 of appendix A to 40 CFR part 60 if the add-on control device is an oxidizer, and you expect the total gaseous organic concentration as

carbon to be more than 50 parts per million at the control device outlet.

(2) Use Method 25A of appendix A to 40 CFR part 60 if the add-on control device is an oxidizer, and you expect the total gaseous organic concentration as carbon to be 50 ppm or less at the control device outlet.

(c) For each test run, determine the total gaseous organic emissions mass flow rates for the inlet and the outlet of the add-on control device, using Equation 1 of this section. If there is more than one inlet or outlet to the add-on control device, you must calculate the total gaseous organic mass flow rate using Equation 1 of this section for each inlet and each outlet and then total all of the inlet emissions and total all of the outlet emissions.

$$M_f = Q_{sd}C_c(12)(0.0416)(10^{-6}) \quad (\text{Eq. 1})$$

Where:

M_f = total gaseous organic emissions mass flow rate, kg/hour (kg/h)

C_c = concentration of organic compounds as carbon in the vent gas, as determined by Method 25 or Method 25A, parts per million by volume (ppmv), dry basis

Q_{sd} = volumetric flow rate of gases entering or exiting the add-on control device, as determined by Method 2, 2A, 2C, 2D, 2F, or 2G, dry standard cubic meters/hour (dscm/h)

0.0416 = conversion factor for molar volume, kg-moles per cubic meter (mol/m^3) (@ 293 Kelvin [K] and 760 millimeters of mercury [mmHg]).

(d) For each test run, determine the add-on control device organic emissions destruction or removal efficiency, using Equation 2 of this section:

$$\text{DRE} = 100 \times \frac{M_{fi} - M_{fo}}{M_{fi}} \quad (\text{Eq. 2})$$

Where:

DRE = organic emissions destruction or removal efficiency of the add-on control device, percent

M_{fi} = total gaseous organic emissions mass flow rate at the inlet(s) to the add-on control device, using Equation 1 of this section, kg/h

M_{fo} = total gaseous organic emissions mass flow rate at the outlet(s) of the add-on control device, using Equation 1 of this section, kg/h.

(e) Determine the emission destruction or removal efficiency of the add-on control device as the average of the efficiencies determined in the three test runs and calculated in Equation 2 of this section.

§ 63.9324 How do I establish the emission capture system and add-on control device operating limits during the performance test?

During the performance test required by § 63.9310, you must establish the operating limits required by § 63.9302 according to this section, unless you have received approval for alternative monitoring and operating limits under § 63.8(f) as specified in § 63.9302.

(a) *Thermal oxidizers.* If your add-on control device is a thermal oxidizer, establish the operating limits according to paragraphs (a)(1) and (2) of this section.

(1) During the performance test, you must monitor and record the combustion temperature at least once every 15 minutes during each of the three test

runs. You must monitor the temperature in the firebox of the thermal oxidizer or immediately downstream of the firebox before any substantial heat exchange occurs.

(2) Use the data collected during the performance test to calculate and record the average combustion temperature maintained during the performance test. This average combustion temperature is the minimum operating limit for your thermal oxidizer.

(b) *Catalytic oxidizers.* If your add-on control device is a catalytic oxidizer, establish the operating limits according to either paragraphs (b)(1) and (2) or paragraphs (b)(3) and (4) of this section.

(1) During the performance test, you must monitor and record the temperature just before the catalyst bed and the temperature difference across the catalyst bed at least once every 15 minutes during each of the three test runs.

(2) Use the data collected during the performance test to calculate and record the average temperature just before the catalyst bed and the average temperature difference across the catalyst bed maintained during the performance test. These are the minimum operating limits for your catalytic oxidizer.

(3) As an alternative to monitoring the temperature difference across the catalyst bed, you may monitor the temperature at the inlet to the catalyst bed and implement a site-specific inspection and maintenance plan for your catalytic oxidizer as specified in paragraph (b)(4) of this section. During the performance test, you must monitor and record the temperature just before the catalyst bed at least once every 15 minutes during each of the three test runs. Use the data collected during the performance test to calculate and record the average temperature just before the catalyst bed during the performance test. This is the minimum operating limit for your catalytic oxidizer.

(4) You must develop and implement an inspection and maintenance plan for your catalytic oxidizer(s) for which you elect to monitor according to paragraph (b)(3) of this section. The plan must address, at a minimum, the ele-

ments specified in paragraphs (b)(4)(i) through (iii) of this section.

(i) Annual sampling and analysis of the catalyst activity (*i.e.*, conversion efficiency) following the manufacturer's or catalyst supplier's recommended procedures.

(ii) Monthly inspection of the oxidizer system, including the burner assembly and fuel supply lines for problems and, as necessary, adjust the equipment to assure proper air-to-fuel mixtures.

(iii) Annual internal and monthly external visual inspection of the catalyst bed to check for channeling, abrasion, and settling. If problems are found, you must take corrective action consistent with the manufacturer's recommendation and conduct a new performance test to determine destruction efficiency according to § 63.9323.

(c) *Emission capture system.* For each capture device that is not part of a PTE that meets the criteria of § 63.9322(a), establish an operating limit for either the gas volumetric flow rate or duct static pressure, as specified in paragraphs (c)(1) and (2) of this section. The operating limit for a PTE is specified in Table 3 to this subpart.

(1) During the capture efficiency determination required by § 63.9310, you must monitor and record either the gas volumetric flow rate or the duct static pressure for each separate capture device in your emission capture system at least once every 15 minutes during each of the three test runs at a point in the duct between the capture device and the add-on control device inlet.

(2) Calculate and record the average gas volumetric flow rate or duct static pressure for the three test runs for each capture device. This average gas volumetric flow rate or duct static pressure is the minimum operating limit for that specific capture device.

§ 63.9330 How do I demonstrate initial compliance with the emission limitation?

(a) You must demonstrate initial compliance with the emission limitation that applies to you according to Table 3 to this subpart.