method used to measure the propane and methanol shall have an accuracy of ± 0.5 percent of the measured value. (Less accurate methods may be used with the advanced approval of the Administrator.) The methanol and propane tests do not need to be conducted simultaneously.

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(7) To verify the enclosure calibration, calculate the mass of propane and the mass of methanol using the measurements taken in steps (4) and (6). See paragraph (d) of this section. This

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quantity must be within ± 2 percent of that measured in step 5 above. (For 1991–1995 calendar years, the difference may exceed ± 2 percent for methanol, provided it does not exceed ±6 percent.) *

(9) Calculate, using the equation in paragraph (d) of this section and the readings taken in step (8), the hydrocarbon and methanol mass. It may not differ by more than ±4 percent of the value in step (6). (For 1991-1995 calendar year methanol-fueled vehicles,

the difference may exceed ± 4 percent for methanol, provided it does not exceed ±6 percent.)

(d) Calculations. (1) The calculation of net methanol and hydrocarbon mass change is used to determine enclosure background and leak rate. It is also used to check the enclosure volume measurements. The methanol mass change is calculated from the initial and final methanol samples, temperature and pressure according to the following equation:

$$\mathbf{M}_{\text{CH3OH}} = \mathbf{V} \times \frac{\mathbf{T}_{\text{Ef}}}{\mathbf{V}_{\text{Ef}} \times \mathbf{T}_{\text{SHEDf}}} \Big[\big(\mathbf{C}_{\text{MS1f}} \mathbf{A} \mathbf{V}_{1f} \big) + \big(\mathbf{C}_{\text{MS2f}} \mathbf{A} \mathbf{V}_{2f} \big) \Big] - \frac{\mathbf{T}_{\text{Ei}}}{\mathbf{V}_{\text{Ei}} \times \mathbf{T}_{\text{SHEDi}}} \Big[\big(\mathbf{C}_{\text{MS1i}} \times \mathbf{A} \mathbf{V}_{1i} \big) + \big(\mathbf{C}_{\text{MS2i}} \times \mathbf{A} \mathbf{V}_{2i} \big) \Big]$$

Where:

- (i) M_{CH3OH}=Methanol mass change, μg.
- (ii) V=Enclosure volume, ft³, as measured in paragraph (b)(1) of this section.
- (iii) T_E=Temperature of sample withdrawn, °R.
- (iv) V_E =Volume of sample withdrawn, ft³.
- (v) P_B =Barometric pressure at time of sampling, in. Hg.
- (vi) C_{MS} =GC concentration of test sample.
- (vii) AV=Volume of absorbing reagent in impinger.
- (viii) i=Initial sample.
- (ix) f=Final sample.
- (x) 1=First impinger.

(xi) 2=Second impinger.

ppm carbon.

(2) The hydrocarbon mass change is calculated from the initial and final FID readings of hydrocarbon concentration, methanol concentration with FID response to methanol, temperature, and pressure according to the following equation:

(iii) C_{CH3OH}=Methanol concentration as

Where:

(i) M_{HC}=Hydrocarbon mass change, g.

(ii) C_{HC}=FID hydrocarbon concentration as ppm carbon including FID response to methanol in the sample.

 $M_{HC} = kV \times 10^{-4} \frac{\left(C_{HCf} - rC_{CH3OHf}\right)}{T_{c}} \times P_{Bf} - \frac{\left(C_{HCi} - rC_{CH3OHi}\right)}{T_{c}} \times P_{Bi}$

$$=\frac{1.501\times10^{-3}\times\mathrm{T_{e}}}{\mathrm{P_{B}}\times\mathrm{V_{E}}}\times\left[\left(\mathrm{C_{S1}}\times\mathrm{AV_{1}}\right)+\left(\mathrm{C_{S2}}\times\mathrm{AV_{2}}\right)\right]$$

 ± 0.2 percent of the measured value. (Less accurate methods may be used with advanced approval of the Administrator.) The methanol and propane tests do not need to be conducted simultaneously.

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(ix) To verify the enclosure calibration, calculate the mass of propane and the mass of methanol using the measurements taken in paragraphs (c)(1)(vi) and (viii) of this section. See paragraph (d) of this section. This quantity must be within ±2 percent of that measured in paragraph (c)(1)(vii) of this section. (For calendar years through 1995, the difference may exceed ± 2 percent for methanol, provided it does not exceed ±6 percent.) *

(xii) At the completion of the 24-hour cycling period, analyze the enclosure

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atmosphere for hydrocarbon and methanol content; determine the net withdrawn methanol (in the case of diurnal emission testing with fixedvolume enclosures); record temperature and barometric pressure. These are the final readings for the hydrocarbon and methanol retention check. The final hydrocarbon and methanol mass, calculated in paragraph (d) of this section, shall be within 3 percent of that determined in paragraph (c)(1)(viii) of this section. (For calendar years through 1995, the difference may exceed ± 3 percent for methanol, provided it does not exceed ± 6 percent.)

(4) The Administrator, upon request, may waive the requirement to comply with ± 2 percent methanol recovery tolerance, and/or the ± 3 percent retention tolerance and instead require

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52. Section 86.1217-96 of Subpart M is amended by revising paragraphs (c)(1)(vii), (c)(1)(ix), (c)(1)(xii), (d)(1),(d)(2) introductory text, and (d)(2)(i)through (d)(2)(iii), and adding paragraph (c)(4) to read as follows:

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§86.1217–96 Evaporative emission enclosure calibrations.

- * * *
 - (c) * * *
 - (1) * * *

(vii) Inject into the enclosure 2 to 6 grams of pure propane and 2 to 6 grams of pure methanol in gaseous form; i.e., at a temperature of at least 150°F (65°C). The propane and methanol may be measured by volume flow or by mass measurement. The method used to measure the propane and methanol shall have an accuracy and precision of