\* \* \* \* (3) \* \* \*

Where:

\*

\*

54. Section 86.1227–90 of Subpart M is amended by adding paragraph (c) to read as follows:

## §86.1227–90 Test procedures; overview.

\*

(c) Background concentrations are measured for all species for which emissions measurements are made. For evaporative testing, this requires measuring initial concentrations. (When testing methanol-fueled vehicles, manufacturers may choose not to measure background concentrations of methanol, and then assume that the concentrations are zero during calculations.)

55. Section 86.1227–96 of Subpart M is amended by adding paragraph (c) to read as follows:

(iii) SAMppm=methanol concentration in the sample bag, or gas

 $0.02406 \times \text{Fuel injected} \times \text{Fuel density}$ 

Air volume  $\times$  Mol. Wt. CH<sub>3</sub>OH

## §86.1227–96 Test procedures; overview.

(c) Background concentrations are measured for all species for which emissions measurements are made. For evaporative testing, this requires measuring initial concentrations. (When testing methanol-fueled vehicles, manufacturers may choose not to measure background concentrations of methanol, and then assume that the concentrations are zero during calculations.)

56. Section 86.1242–90 of Subpart M is amended by revising paragraph (l)(2), and removing paragraph (l)(3) to read as follows:

## §86.1242–90 Records required.

\*

\* \* (1) \* \* \*

(2) The concentration of the GC analyses of the test samples (methanol). 57. Section 86.1243–90 of Subpart M is amended by revising paragraphs (a) introductory text, (a)(1), (a)(2) introductory text, and (a)(2)(i) through (a)(2)(iii) to read as follows:

bottle, in ppmC. SAMppm for sample

bags:

## §86.1243–90 Calculations; evaporative emissions.

(a) The calculation of the net hydrocarbon, methanol and hydrocarbon plus methanol mass change in the enclosure is used to determine the diurnal and hot soak mass emissions. The mass changes are calculated from initial and final hydrocarbon and methanol concentrations in ppm carbon, initial and final enclosure ambient temperatures, initial and final barometric pressures, and net enclosure volume using the following equations:

(1) For methanol:

$$M_{CH3OH} = V_{n} \times \frac{T_{Ef}}{(V_{E} \times T_{SHEDf})} \times \left[ (C_{MS1f} \times AV_{1f}) + (C_{MS2f} \times AV_{2f}) \right]$$
$$- \frac{T_{Ei}}{(V_{E} \times T_{SHEDi})} \times \left[ (C_{MS1i} \times AV_{1i}) + (C_{MS2i} \times AV_{2i}) \right]$$

Where:

(i)  $M_{CH3OH}$ =Methanol mass change,  $\mu g$ .

(ii)  $V_n$ =Net enclosure volume, ft<sup>3</sup>, as determined by subtracting 50 ft<sup>3</sup> (1.42 m<sup>3</sup>) (volume of vehicle with trunk and windows open) from the enclosure volume. A manufacturer may use the measured volume of the vehicle (instead of the nominal 50 ft<sup>3</sup>) with advance approval by the Administrator: *Provided*, the measured volume is determined and used for all vehicles tested by that manufacturer.

- (iii)  $T_E$ =Temperature of sample withdrawn, °R.
- (iv)  $V_E$ =Volume of sample withdrawn, ft<sup>3</sup>.
- (v) T<sub>SHED</sub>=Temperature of SHED, °R

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

(vi) P<sub>B</sub>=Barometric pressure at time of sampling, in. Hg.

- (vii)  $C_{MS}$ =GC concentration of sample. (viii) AV=Volume of absorbing reagent
- in impinger. (ix) i=Initial sample.
- (x) f=Final sample.
- (xi) 1=First impinger.
- (xii) 2=Second impinger.
- (2) For hydrocarbons:

Where:

(i) M<sub>HC</sub>=Hydrocarbon mass change, g.

 (ii) C<sub>HC</sub>=FID hydrocarbon concentration as ppm carbon including FID response to methanol in the sample. (iii) C<sub>CH23OH</sub>=Methanol concentration as ppm carbon.