

(b) * * *

(1) For gasoline-, liquefied petroleum gas-, natural gas- and methanol-fueled vehicles a hydrocarbon analyzer utilizing the hydrogen flame ionization principle (FID) shall be used to monitor the atmosphere within the enclosure (a heated FID (HFID) (235°±15°F (113±8°C)) is recommended for methanol-fueled vehicles). Provided evaporative emission results are not affected, a probe may be used to detect or verify hydrocarbon sources during a running loss test. Instrument bypass flow may be returned to the enclosure. The FID shall have a response time to 90 percent of final reading of less than 1.5 seconds.

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(3) The methanol sampling system described in paragraph (b)(2) of this section shall be designed such that, if a test vehicle emitted the maximum allowable level of methanol (based on all applicable standards) during any phase of the test, the measured concentration in the primary impinger would exceed either 25 mg/l or a concentration equal to 25 times the limit of detection for the GC analyzer, and such that the primary impinger collects at least 90 percent of the analyte in the samples. The remaining analyte shall be collected by the secondary impinger. The provisions of this paragraph apply to the design of sampling systems, not to individual tests.

(c) * * *

(2) For the methanol sample, permanent records shall be made of the following: the volumes of deionized water introduced into each impinger, the rate and time of sample collection and the chromatogram of the analyzed sample.

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48. Section 86.1213-94 is amended by revising paragraph (c) to read as follows:

§ 86.1213-94 Fuel specifications.

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(c) *Mixtures of petroleum and methanol fuels for flexible fuel vehicles.*

(1) Mixtures of petroleum and methanol fuels used for exhaust and evaporative emission testing and service accumulation for flexible fuel vehicles shall consist of the gasoline listed in paragraph (a) of this section and the methanol fuel listed in paragraph (b) of this section, and shall be within the range fuel mixtures for which the vehicle was designed as reported in accordance with § 86.94-21. The Administrator may use any fuel within this range for testing.

(2) The fuel mixtures used by the manufacturers shall be sufficient to demonstrate compliance over the full design range, and shall include:

(i) For emission testing:

(A) The petroleum fuel specified in paragraph (a) of this section;

(B) A methanol fuel representative of the methanol fuel expected to be found in use, as specified in paragraph (d) of this section; and

(C) A combination of the fuels specified in paragraphs (c)(2)(i)(A) and (B) of this section that represents the composition which results in the highest Reid Vapor Pressure for the mixture. The mixture shall contain between nine and thirteen percent methanol.

(ii) For service accumulation, an alternating combination of the fuels specified in paragraphs (a) and (b) of this section that, based on good engineering judgement, demonstrates the durability of the emission control system. The fuels may be used as a single mixture or alternated.

(iii) Or, other combinations for testing or service accumulation which demonstrate compliance with the standards over the entire design range of the vehicle, provided that written approval is obtained from the Administrator prior to the start of testing.

(3) The specification range of the fuels to be used under paragraph (c) of this section shall be reported in accordance with § 86.094-21.

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49. Section 86.1214-85 of Subpart M is amended by revising paragraphs (a)(1), (a)(2), (b) and (c) and adding paragraph (d) to read as follows:

§ 86.1214-85 Analytical gases.

(a) * * *

(1) Gases for the hydrocarbon analyzer shall be:

(i) Single blends of propane using air as the diluent; and

(ii) Optionally, for response factor determination, single blends of methanol using air as the diluent.

(2) Fuel for the evaporative emission enclosure FID (or HFID for methanol-fueled vehicles) shall be a blend of 40 ±2 percent hydrogen with the balance being helium. The mixture shall contain less than 1 ppm equivalent carbon response. 98 to 100 percent hydrogen fuel may be used with advance approval by the Administrator.

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(b) Calibration gases (not including methanol) shall be traceable to within one percent of NIST (formerly NBS) gas standards, or other gas standards which have been approved by the Administrator.

(c) Span gases (not including methanol) shall be accurate to within

two percent of true concentration, where true concentration refers to NIST (formerly NBS) gas standards, or other gas standards which have been approved by the Administrator.

(d) Methanol in air gases used for response factor determination shall:

(1) Be traceable to within ±2 percent of NIST (formerly NBS) gas standards, or other gas standards which have been approved by the Administrator; and

(2) Remain within ±2 percent of the labeled concentration. Demonstration of stability shall be based on a quarterly measurement procedure with a precision of ±2 percent (two standard deviations), or other method approved by the Administrator. The measurement procedure may incorporate multiple measurements. If the true concentration of the gas changes by more than two percent, but less than ten percent, the gas may be relabeled with the new concentration.

50. Section 86.1216-90 of Subpart M is amended by revising paragraphs (c)(1) and (c)(3), and adding paragraphs (d) and (e) to read as follows:

§ 86.1216-90 Calibrations; frequency and overview.

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(c) * * *

(1) Calibrate the hydrocarbon analyzer (see § 86.1221). Certain analyzers may require more frequent calibration depending on particular equipment and uses.

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(3) Perform a hydrocarbon retention check and calibration on the evaporative emission enclosure (see § 86.1217).

(d) At least twice annually or after any maintenance perform a methanol retention check and calibration on the evaporative emission enclosure (see § 86.1217).

(e) Calibrate the methanol analyzer as often as required by the manufacturer or as necessary according to good practice.

51. Section 86.1217-90 of Subpart M is amended by revising paragraphs (c)(5), (c)(7) and (c)(9), (d)(1), (d)(2) introductory text and (d)(2)(i) through (d)(2)(iii) to read as follows:

§ 86.1217-90 Evaporative emission enclosure calibrations.

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(c) * * *

(5) Inject into the enclosure a known quantity of pure propane (4g is a convenient quantity) and a known quantity of pure methanol (4g is a convenient quantity) in gaseous form; i.e., at a temperature of at least 150-155°F (65-68°C). The propane and methanol may be measured by volume flow or by mass measurement. The