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40 CFR Ch. I (7-1-10 Edition)

(e) *Natural gas fuel.* (1) Natural gas fuel having the following specifications will be used by the Administrator for exhaust and evaporative emission testing of natural gas-fueled vehicles:

Item		ASTM test method No.	Value
Methane	min. mole pct.	D1945	89.0
Ethane	max. mole pct.	D1945	4.5
C ₃ and higher	max. mole pct.	D1945	2.3
C ₄ and higher	max. mole pct.	D1945	0.2
Oxygen	max. mole pct.	D1945	0.6
Inert gases: Sum of CO ₂ and N ₂	max. mole pct.	D1945	4.0
Odorant ¹			

¹ The natural gas at ambient conditions must have a distinctive odor potent enough for its presence to be detected down to a concentration in air of not over 1/5 (one-fifth) of the lower limit of flammability.

(2) Natural gas representative of commercially available natural gas fuel which will be generally available through retail outlets shall be used in service accumulation for natural gas-fueled vehicles.

(3) Other natural gas fuels may be used for testing and service accumulation provided:

- (i) They are commercially available; and
- (ii) Information acceptable to the Administrator is provided to show that only the designated fuel would be used in customer service; and
- (iii) Written approval from the Administrator of the fuel specifications must be provided prior to the start of testing.

(4) The specification range of the fuels to be used under paragraphs (e)(1), (e)(2) and (e)(3) of this section shall be reported in accordance with §86.094-21(b)(3) or §86.1844-01 as applicable.

(f) *Liquefied petroleum gas fuel.* (1) Liquefied petroleum gas fuel used for exhaust and evaporative emission testing and in service accumulation shall be commercially available liquefied petroleum gas fuel.

(i) Manufacturers shall recommend the liquefied petroleum gas fuel to be used for testing and service accumulation.

(ii) The Administrator shall determine the liquefied petroleum gas fuel to be used for testing and service accumulation.

(2) Other liquefied petroleum gas fuels may be used for testing and service accumulation provided:

- (i) They are commercially available; and
- (ii) Information, acceptable to the Administrator, is provided to show that only the designated fuel would be used in customer service; and
- (iii) Written approval from the Administrator of the fuel specifications must be provided prior to the start of testing.

(3) The specification range of the fuel to be used under paragraphs (f)(1) and (f)(2) of this section shall be measured in accordance with ASTM D2163-61 (Incorporated by reference; see §86.1) and reported in accordance with §86.094-21(b)(3) or §86.1844-01 as applicable.

(g) Fuels not meeting the specifications set forth in this section may be used only with the advance approval of the Administrator.

[59 FR 48506, Sept. 21, 1994, as amended at 60 FR 34342, June 30, 1995; 62 FR 47120, Sept. 5, 1997; 63 FR 24448, May 4, 1998; 64 FR 23921, May 4, 1999; 65 FR 8277, Feb. 18, 2000]

§86.114-94 Analytical gases.

(a) *Analyzer gases.* (1) Gases for the CO and CO₂ analyzers shall be single blends of CO and CO₂ respectively using nitrogen as the diluent.

(2) Gases for the THC 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.

(3) Gases for the methane analyzer shall be single blends of methane using air as the diluent.

(4) Gases for the NO_x analyzer shall be single blends of NO named as NO_x, with a maximum NO₂ concentration of 5 percent of the nominal value, using nitrogen as the diluent.

(5) Fuel for FIDs and HFIDs and the methane analyzer shall be a blend of 40 ±2 percent hydrogen with the balance being helium. The mixture shall contain less than one ppm equivalent carbon response. 98 to 100 percent hydrogen fuel may be used with advance approval by the Administrator.

(6) The allowable zero gas (air or nitrogen) impurity concentrations shall

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not exceed 1 ppm equivalent carbon response, 1 ppm carbon monoxide, 0.04 percent (400 ppm) carbon dioxide, and 0.1 ppm nitric oxide.

(7) "Zero grade air" includes artificial "air" consisting of a blend of nitrogen and oxygen with oxygen concentrations between 18 and 21 mole percent.

(8) The use of precision blending devices (gas dividers) to obtain the required calibration, as defined below, is acceptable, provided that the calibration curves they produce name a calibration gas within 2 percent of its certified concentration. This verification shall be performed at between 15 and 50 percent of the full scale concentration of the range and shall be included with each gas calibration incorporating a blending device. Alternative procedures to verify the validity of the analyzer calibration curves generated using a gas divider are acceptable provided the procedures are approved in advance by the Administrator.

(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 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 per-

cent, the gas may be relabeled with the new concentration.

[56 FR 25773, June 5, 1991, as amended at 60 FR 34342, June 30, 1995]

§ 86.115-00 EPA dynamometer driving schedules.

Section 86.115-00 includes text that specifies requirements that differ from § 86.115-78. Where a paragraph in § 86.115-78 is identical and applicable to § 86.115-00, this may be indicated by specifying the corresponding paragraph and the statement "[Reserved]. For guidance see § 86.115-78."

(a) The driving schedules for the EPA Urban Dynamometer Driving Schedule, US06, SC03, and the EPA New York City Cycles are contained in appendix I of this part. The driving schedules are defined by a smooth trace drawn through the specified speed vs. time relationships. They each consist of a distinct non-repetitive series of idle, acceleration, cruise, and deceleration modes of various time sequences and rates.

(b) The driver should attempt to follow the target schedule as closely as possible (refer to § 86.128-00 for additional cycle driving instructions). The speed tolerance at any given time for these schedules, or for a driver's aid chart approved by the Administrator, are as follows:

(b)(1)-(c) [Reserved]. For guidance see § 86.115-78.

[61 FR 54891, Oct. 22, 1996]

§ 86.115-78 EPA urban dynamometer driving schedule.

(a) The EPA Urban Dynamometer Driving Schedule and the EPA New York City Cycle are listed in appendix I of this part. The driving schedules are defined by a smooth trace drawn through the specified speed vs. time relationships. They each consist of a distinct nonrepetitive series of idle, acceleration, cruise, and deceleration modes of various time sequences and rates.

(b) The driver should attempt to follow the target schedule as closely as possible. The speed tolerance at any given time for these schedules, or for a driver's aid chart approved by the Administrator, are as follows: