

| Fuel property | Limit |
|----------------------------|--|
| (xxi) Hydrogen, wt % | No limit; report to purchaser required |

(3)(i) Unless otherwise approved by the Administrator, unleaded gasoline representative of commercial gasoline that will be generally available through retail outlets must be used in service accumulation. Unless otherwise approved by the Administrator, this gasoline must have a minimum sulfur content of 15 ppm. Unless otherwise approved by the Administrator, fuel used for evaporative emission durability demonstration must contain ethanol as required by § 86.1824-01(a)(2)(iii). Leaded gasoline must not be used in service accumulation.

(ii) Unless otherwise approved by the Administrator, the octane rating of the gasoline used must be no higher than 1.0 Retail octane number above the lowest octane rating that meets the fuel grade the manufacturer will recommend to the ultimate purchaser for the relevant production vehicles. If the manufacturer recommends a Retail octane number rather than a fuel grade, then the octane rating of the service accumulation gasoline can be no higher than 1.0 Retail octane number above the recommended Retail octane number. The service accumulation gasoline must also have a minimum sensitivity of 7.5 octane numbers, where sensitivity is defined as the Research octane number minus the Motor octane number.

(iii) The Reid Vapor Pressure of the gasoline used must be characteristic of the motor fuel used during the season in which the service accumulation takes place.

(4) The specification range of the gasoline to be used under paragraph (a) of this section must be reported in accordance with § 86.094-21(b)(3).

(b) heading and (b)(1) [Reserved]. For guidance see § 86.1313-94.

(b)(2) [Reserved]. For guidance see § 86.1313-98.

(b)(3) through (g) [Reserved]. For guidance see § 86.1313-94.

[66 FR 5178, Jan. 18, 2001]

§ 86.1313-2007 Fuel specifications.

Section 86.1313-2007 includes text that specifies requirements that differ from § 86.1313-94 and § 86.1313-2004. Where a paragraph in § 86.1313-94 or § 86.1313-2004 is identical and applicable to § 86.1313-2007, this may be indicated by specifying the corresponding paragraph and the statement “[Reserved]. For guidance see § 86.1313-94.” or “[Reserved]. For guidance see § 86.1313-04.”.

(a) [Reserved]. For guidance see § 86.1313-2004.

(b) heading and (b)(1) [Reserved]. For guidance see § 86.1313-94.

(b)(2) Petroleum fuel for diesel engines meeting the specifications in Table N07-2, or substantially equivalent specifications approved by the Administrator, shall be used in exhaust emissions testing. The grade of petroleum fuel used shall be commercially designated as “Type 2-D” grade diesel fuel except that fuel commercially designated as “Type 1-D” grade diesel fuel may be substituted provided that the manufacturer has submitted evidence to the Administrator demonstrating to the Administrator’s satisfaction that this fuel will be the predominant in-use fuel. Such evidence could include such things as copies of signed contracts from customers indicating the intent to purchase and use “Type 1-D” grade diesel fuel as the primary fuel for use in the engines or other evidence acceptable to the Administrator. (Note: Vehicles certified under § 86.007-11(f) must be tested using the test fuel specified in § 86.1313-2004, unless otherwise allowed by the Administrator.) Table N07-2 follows:

TABLE N07-2

| Item | ASTM test method No. | Type 1-D | Type 2-D |
|--|----------------------|---------------|---------------|
| (i) Cetane Number | D613 | 40-54 | 40-50 |
| (ii) Cetane Index | D976 | 40-54 | 40-50 |
| (iii) Distillation range: | | | |
| (A) IBP | D86 | 330-390 | 340-400 |
| (B) 10 pct. point | | (165.6-198.9) | (171.1-204.4) |
| (C) 50 pct. point | D86 | 370-430 | 400-460 |
| (D) 90 pct. point | D86 | (187.8-221.1) | (204.4-237.8) |
| (E) EP | D86 | 410-480 | 470-540 |
| (iv) Gravity | | (210.0-248.9) | (243.3-282.2) |
| (v) Total sulfur | D86 | 460-520 | 560-630 |
| (vi) Hydrocarbon composition: | D86 | (237.8-271-1) | (293.3-332.2) |
| (A) Aromatics, minimum (Remainder shall be paraffins, naphthenes, and olefins) | D86 | 500-560 | 610-690 |
| (vii) Flashpoint, min | D287 | (260.0-293.3) | (321.1-365.6) |
| (viii) Viscosity | D2622 | 40-44 | 32-37 |
| | | 7-15 | 7-15 |
| | D5186 | 8 | 27 |
| | D93 | 120 | 130 |
| | D445 | (48.9) | (54.4) |
| | | 1.6-2.0 | 2.0-3.2 |

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(3) Petroleum Diesel fuel for diesel engines meeting the specifications in table N07-3, or substantially equivalent specifications approved by the Administrator, shall be used in service accumulation. The grade of petroleum diesel fuel used shall be commercially designated as Type 2-D'' grade diesel fuel except that fuel commercially designated as ''Type 1-D'' grade Diesel fuel may be substituted provided that the manufacturer has submitted evi-

dence to the Administrator demonstrating to the Administrator's satisfaction that this fuel will be the predominant in-use fuel. Such evidence could include such things as copies of signed contracts from customers indicating the intent to purchase and use ''Type 1-D'' grade diesel fuel as the primary fuel for use in the engines or other evidence acceptable to the Administrator. Table N07-03 follows:

TABLE N07-3

| Item | ASTM test method No. | Type 1-D | Type 2-D |
|--|----------------------|---------------|---------------|
| (i) Cetane Number | D613 | 40-56 | 38-58 |
| (ii) Cetane Index | D976 | min. 40 | min. 40 |
| (iii) Distillation range: 90 pct. point | D86 | 440-530 | 540-630 |
| (iv) Gravity | D287 | (226.7-276-7) | (293.3-332.2) |
| (v) Total sulfur | D2622 | 39-45 | 30-39 |
| (vi) Flashpoint, min | D93 | 7-15 | 7-15 |
| (vii) Viscosity | D445 | 130 (94.4) | 130 (54.4) |
| | | 1.2-2.2 | 1.5-4.5 |

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(b)(4) through (g) [Reserved]. For guidance see § 86.1313-94.

[66 FR 5180, Jan. 18, 2001]

§ 86.1314-84 Analytical gases.

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

(b) Gases for the hydrocarbon analyzer shall be single blends of propane using air as the diluent.

(c) 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.

(d) Fuel for the FID 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 of the Administrator.

(e) The allowable zero gas (air or nitrogen) impurity concentrations shall not exceed 1 ppm equivalent carbon response, 1 ppm carbon monoxide, 0.04 percent (400 ppm) carbon dioxide and 0.1 ppm nitric oxide.

(f)(1) "Zero-grade air" includes artificial "air" consisting of a blend of nitrogen and oxygen with oxygen concentrations between 18 and 21 mole percent.

(2) Calibration gases shall be accurate to within ±1 percent of NBS gas standards, or other gas standards which have been approved by the Administrator.

(3) Span gases shall be accurate to within ±2 percent of NBS gas standards, or other gas standards which have been approved by the Administrator.

(g) The use of precision blending devices (gas dividers) to obtain the required calibration gas concentrations is acceptable, provided that the blended gases are accurate to within ±1.5 percent of NBS gas standards, or other gas standards which have been approved by the Administrator. This accuracy implies that primary gases used for blending must be "named" to an accuracy of at least ±1 percent, traceable

to NBS or other approved gas standards.

[48 FR 52210, Nov. 16, 1983, as amended at 49 FR 48144, Dec. 10, 1984]

§ 86.1314-94 Analytical gases.

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

(b) Gases for the hydrocarbon analyzer shall be:

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

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

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

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

(e) Fuel for FIDs and HFIDs and methane analyzers 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.

(f) The allowable zero gas (air or nitrogen) impurity concentrations shall not exceed 1 ppm equivalent carbon response, 1 ppm carbon monoxide, 0.04 percent (400 ppm) carbon dioxide and 0.1 ppm nitric oxide.

(g)(1) "Zero-grade air" includes artificial "air" consisting of a blend of nitrogen and oxygen with oxygen concentrations between 18 and 21 mole percent.

(2) 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.

(3) 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.

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