

Fuel property	Limit
Sulfur, ppm by wt	15-40, except that administrator may use and approve for use, lower ranges where such ranges are consistent with current California requirements.
Phosphorous, g/gal (max)	0.005
RVP, psi	6.7-7.0
Olefins, vol%	4.0-6.0
Total aromatic hydrocarbons (vol%)	22-25
Benzene, vol%	0.8-1.0
Multi-substituted alkyl Aromatic hydrocarbons, vol%	12-14
MTBE, vol %	10.8-11.2
Additives:	See chapter 4 of the California Regulatory Requirements Applicable to the National Low Emission Vehicle Program (October, 1996). These procedures are incorporated by reference (see § 86.1).
Copper corrosion	No. 1.
Gum, washed, mg/100 ml (max)	3.0
Oxidation stability, minutes (min)	1000
Specific gravity	No limit; report to purchaser required.
Heat of combustion	No limit; report to purchaser required.
Carbon, wt%	No limit; report to purchaser required.
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. For model years 2004 and later, and unless otherwise approved by the Administrator, this gasoline must have a minimum sulfur content of 15 ppm. Unless otherwise approved by the Administrator, where the vehicle is to be used for evaporative emission durability demonstration, such fuel 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 this paragraph (a) must be reported in accordance with §§ 86.094-21(b)(3) and 86.1844-01.

(b)-(g) [Reserved]. For guidance see § 86.113-94.

[65 FR 6848, Feb. 10, 2000]

§ 86.113-07 Fuel specifications.

Section 86.113-07 includes text that specifies requirements that differ from § 86.113-94 or § 86.113-04. Where a paragraph in § 86.113-94 or § 86.113-04 is identical and applicable to § 86.113-07, this may be indicated by specifying the corresponding paragraph and the statement “[Reserved]. For guidance see § 86.113-94.” or “[Reserved]. For guidance see § 86.113-04.”.

(a) [Reserved]. For guidance see § 86.113-04.

(b)(1) [Reserved]. For guidance see § 86.113-94.

(b)(2) Petroleum fuel for diesel vehicles meeting the following specifications, or substantially equivalent specifications approved by the Administrator, must be used in exhaust emissions testing. The grade of petroleum diesel fuel recommended by the engine manufacturer, commercially designated as “Type 2-D” grade diesel, must be used:

Item		ASTM test method No.	Type 2-D
(i) Cetane Number		D613	40-50
(ii) Cetane Index		D976	40-50
(iii) Distillation range:			
(A) IBP	°F	D86	340-400
	(°C)		(171.1-204.4)
(B) 10 pct. point	°F	D86	400-460
	(°C)		(204.4-237.8)
(C) 50 pct. point	°F	D86	470-540
	(°C)		(243.3-282.2)
(D) 90 pct. point	°F	D86	560-630
	(°C)		(293.3-332.2)
(E) EP	°F	D86	610-690
	(°C)		(321.1-365.6)
(iv) Gravity	°API	D287	32-37
(v) Total sulfur	ppm	D2622	7-15
(vi) Hydrocarbon composition:			
(A) Aromatics, minimum (Remainder shall be paraffins, naphthenes, and olefins).	pct.	D5186	27
(vii) Flashpoint, min.	°F	D93	130
	(°C)		(54.4)
(viii) Viscosity	centistokes	D445	2.0-3.2

(3) Petroleum fuel for diesel vehicles meeting the following specifications, or substantially equivalent specifications approved by the Administrator, shall be used in service accumulation. The grade of petroleum diesel fuel rec-

ommended by the engine manufacturer, commercially designated as "Type 2-D" grade diesel fuel, shall be used: (b)(4) through (g) [Reserved]. For guidance see § 86.113-94.

Item		ASTM test method No.	Type 2-D
(i) Cetane Number		D613	38-58
(ii) Cetane Index		D976	min. 40
(iii) Distillation range:			
90 pct. point	°F	D86	540-630
(iv) Gravity	°API	D287	30-39
(v) Total sulfur	ppm	D2622	7-15
(vi) Flashpoint, min.	°F	D93	130
	(°C)		(54.4)
(vii) Viscosity	centistokes	D445	1.5-4.5

(h)(1) For model year 2004 through 2006 Tier 2 diesel-fueled vehicles that incorporate sulfur-sensitive technologies, the manufacturer may test the vehicle using a test fuel meeting the specifications listed in paragraphs (b)(2) and (b)(3) of this section, provided the manufacturer clearly recommends to the ultimate purchaser in the owner's manual that the vehicle should use fuel with no higher than 15 ppm sulfur.

(2) For model year 2004 through 2006 Tier 2 diesel-fueled vehicles that incorporate sulfur-sensitive technologies and that are certified for 50-state sale (i.e., certified to California and EPA standards), the manufacturer may test the vehicle using a test fuel whose

qualities, on a specification by specification basis, meet the requirements of either the specifications listed in paragraph (b)(2) of this section or the California test fuel specifications, provided the manufacturer clearly recommends to the ultimate purchaser in the owner's manual that the vehicle should use fuel with no higher than 15 ppm sulfur.

(3) Where a manufacturer uses a test fuel under paragraph (h)(1) or (h)(2) of this section, EPA shall use the same fuel for its compliance testing.

[66 FR 5167, Jan. 18, 2001]

§ 86.113-91 Fuel specifications.

(a) *Otto-cycle test fuel.* (1) Gasoline having the following specifications will