

40 C.F.R. § 86.513

Fuel and engine lubricant specifications.

(a) *Gasoline.* (1) Use gasoline meeting the following specifications for exhaust and evaporative emission testing:

Table 1 of § 86.513—Gasoline Test Fuel Specifications

Item	Value	Procedure 1
Distillation Range:		
1. Initial boiling point, °C	23.9–35.0 ²	ASTM D86
2. 10% point, °C	48.9–57.2	
3. 50% point, °C	93.3–110.0	
4. 90% point, °C	148.9–162.8	
5. End point, °C	212.8 maximum	
Total aromatic hydrocarbon, volume %	35 maximum	ASTM D1319 or ASTM D5769
Olefins, volume % ³	10 maximum	ASTM D1319 or ASTM D6550
Lead (organic), g/liter	0.013 maximum	ASTM D3237
Phosphorous, g/liter	0.0013 maximum	ASTM D3231
Sulfur, weight %	0.008 maximum	ASTM D2622
Dry Vapor Pressure Equivalent (<i>DVPE</i>), kPa	55.2 to 63.4 ⁴	ASTM D5191

1 Incorporated by reference, see § 86.1.

2 For testing at altitudes above 1,219 m, the specified initial boiling point range is (23.9 to 40.6) °C.

3 ASTM D6550 prescribes measurement of olefin concentration in mass %. Multiply this result by 0.857 and round to the first decimal place to determine the olefin concentration in volume %.

4 For testing at altitudes above 1,219 m, the specified volatility range is 52 to 55 kPa. Calculate dry vapor pressure equivalent, *DVPE*, based on the measured total vapor pressure, *pT*, using the following equation: $DVPE \text{ (kPa)} = 0.956 \cdot pT - 2.39$ (or $DVPE \text{ (psi)} = 0.956 \cdot pT - 0.347$). *DVPE* is intended to be equivalent to Reid Vapor Pressure using a different test method.

(2) The following specifications apply for fuels used during service accumulation for certification:

(i) Unleaded gasoline and engine lubricants representative of commercial fuels and engine lubricants which will be generally available through retail outlets shall be used in service accumulation.

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