

**Environmental Protection Agency**

**§ 86.513-2004**

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

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

- (i) They are commercially available;
- (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.

(f) *Lubricants.* (1) If the manufacturer specifies several lubricants to be used by the ultimate purchaser, the Administrator will select one to be used during service accumulation.

(2) The same lubricant(s) shall be used for both service accumulation and emission testing.

(g) The specification range of the fuels and of the engine lubricants to be used under paragraphs (a), (b), (c), (d) and (e) of this section shall be reported in accordance with § 86.416.

(h) Written approval from the Administrator of the fuel and lubricant specifications must be provided prior to the start of testing.

[59 FR 48512, Sept. 21, 1994, as amended at 60 FR 34354, June 30, 1995]

**§ 86.513-2004 Fuel and engine lubricant specifications.**

Section 86.513-2004 includes text that specifies requirements that differ from § 86.513-94. Where a paragraph in § 86.513-94 is identical and applicable to § 86.513-2004, this may be indicated by specifying the corresponding paragraph and the statement “[Reserved]. For guidance see § 86.513-94.” Where a corresponding paragraph of § 86.513-94 is not applicable, this is indicated by the statement “[Reserved].”

(a) *Gasoline.* (1) Gasoline having the following specifications will be used by the Administrator in exhaust emission testing of gasoline-fueled motorcycles. Gasoline having the following specifications or substantially equivalent specifications approved by the Administrator, shall be used by the manufacturer for emission testing except that the octane specifications do not apply.

TABLE 1 OF § 86.513-2004.—GASOLINE TEST FUEL SPECIFICATIONS

Item	Procedure	Value
Distillation Range:		
1. Initial boiling point, °C .....	ASTM D 86-97	23.9—35.0 <sup>1</sup> .
2. 10% point, °C .....	ASTM D 86-97	48.9—57.2.
3. 50% point, °C .....	ASTM D 86-97	93.3—110.0.
4. 90% point, °C .....	ASTM D 86-97	148.9—162.8.
5. End point, °C .....	ASTM D 86-97	212.8.
Hydrocarbon composition:		
1. Olefins, volume % .....	ASTM D 1319-98	10 maximum.
2. Aromatics, volume % .....	ASTM D 1319-98	35 minimum.
3. Saturates .....	ASTM D 1319-98	Remainder.
Lead (organic), g/liter .....	ASTM D 3237	0.013 maximum.
Phosphorous, g/liter .....	ASTM D 3231	0.005 maximum.
Sulfur, weight % .....	ASTM D 1266	0.08 maximum.
Volatility (Reid Vapor Pressure), kPa .....	ASTM D 3231	55.2 to 63.4 <sup>1</sup> .

<sup>1</sup> For testing at altitudes above 1 219 m, the specified volatility range is 52 to 55 kPa and the specified initial boiling point range is 23.9° to 40.6 °C.

(2) 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.

(3) The octane rating of the gasoline used shall be no higher than 4.0 Research octane numbers above the min-

imum recommended by the manufacturer.

(4) The Reid Vapor Pressure of the gasoline used shall be characteristic of commercial gasoline fuel during the season in which the service accumulation takes place.

**§86.514-78**

(b) through (d) [Reserved]. For guidance see §86.513-94.

[69 FR 2441, Jan. 15, 2004]

**§86.514-78 Analytical gases.**

(a) *Analyzer gases.* (1) Gases for the CO and CO<sub>2</sub> analyzers shall be single blends of CO and CO<sub>2</sub> 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 NO<sub>x</sub> analyzer shall be single blends of NO named as NO<sub>x</sub> with a maximum NO<sub>2</sub> concentration of 5 percent of the nominal value using nitrogen as the diluent.

(4) [Reserved]

(5) 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.

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

(7) The use of proportioning and precision blending devices to obtain the required analyzer gas concentrations is allowable provided their use has been approved in advance by the Administrator.

(b) Calibration gases (not including methanol) shall be known to within 2 percent of true values.

(c) 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 per-

**40 CFR Ch. I (7-1-04 Edition)**

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

[42 FR 1137, Jan. 5, 1977, as amended at 60 FR 34354, June 30, 1995]

**§86.515-78 EPA urban dynamometer driving schedule.**

(a) The dynamometer driving schedules are listed in appendix I. The driving schedules are defined by a smooth trace drawn through the specified speed vs. time relationships. They consist of a nonrepetitive series of idle, acceleration, cruise, and deceleration modes of various time sequences and rates. Appropriate driving schedules are as follows:

Class I—Appendix I(c)

Class II—Appendix I(b)

Class III—Appendix I(b)

(b) The speed tolerance at any given time on the dynamometer driving schedule prescribed in appendix I or as printed on a driver's aid chart approved by the Administrator, when conducted to meet the requirements of §86.537 is defined by upper and lower limits. The upper limit is 3.2 km/h (2 mph) higher than the highest point on the trace within 1 second of the given time. The lower limit is 3.2 km/h (2 mph) lower than the lowest point on the trace within 1 second of the given time. Speed variations greater than the tolerances (such as may occur during gear changes) are acceptable provided they occur for less than 2 seconds on any occasion. Speeds lower than those prescribed are acceptable provided the vehicle is operated at maximum available power during such occurrences. When conducted to meet the requirements of §86.532 the speed tolerance shall be as specified above, except that the upper and lower limits shall be 6.4 km/h (4 mph).

(c) Figure F78-4 shows the range of acceptable speed tolerances for typical points. Figure F78-4(a) is typical of portions of the speed curve which are increasing or decreasing throughout the two second time interval. Figure F78-4(b) is typical of portions of the speed curve which include a maximum or minimum value.