with the Society of Automotive Engineers, Inc. (SAE) Recommended Practice J1151, ''Methane Measurement Using Gas Chromatography,'' December 1991, 1994 SAE Handbook—SAE International Cooperative Engineering Program, Volume 1: Materials, Fuels, Emissions, and Noise; Section 13 and page 170 (13.170), which is incorporated by reference.

(A) This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(B) Copies may be inspected at U.S. EPA, OAR, 401 M St., SW., Washington, DC 20460, or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC. Copies of this material may be obtained from Society of Automotive Engineers International, 400 Commonwealth Drive, Warrendale, PA 15096–001.

(c) *Other analyzers and equipment.* Other types of analyzers and equipment may be used if shown to yield equivalent or superior results and if approved in advance by the Administrator.

[56 FR 25771, June 5, 1991, as amended at 58 FR 33209, June 16, 1993; 59 FR 48505, Sept. 21, 1994; 59 FR 50073, Sept. 30, 1994]

§ 86.112–91 Weighing chamber (or room) and microgram balance specifications.

(a) *Ambient conditions*—(1) *Temperature.* The temperature of the chamber in which the particulate filters are conditioned and weighed shall be maintained to within ±10 °F (6 °C) of a set point between 68 °F (20 °C) and 86 °F (30 °C) during all filter conditioning and filter weighing. A continuous recording of the temperature is required.

(2) *Humidity.* The relative humidity of the chamber in which the particulate filters are conditioned and weighed shall be maintained to within ±10 percent of a set point between 30 and 70 percent during all filter conditioning and filter weighing. A continuous recording of the temperature is required.

(3) The environment shall be free from any ambient contaminants (such as dust) that would settle on the particulate filters during their stabilization.

(4) It is required that two unused reference filters remain in the weighing room at all times in covered (to reduce dust contamination) but unsealed (to permit humidity exchange) petri dishes. These reference filters shall be placed in the same general area as the sample filters. These reference filters shall be weighed within 4 hours of, but preferably just prior to, the pre- and post-test sample filter weighings.

(5) If the weight of either of the reference filters changes between pre- and post-test sample filter weighings by more than ±2.0 percent of the test average primary filter loading (recommended minimum of 0.5 milligrams) or ±0.010 milligrams, whichever is greater, then the post-test sample filter weights are invalid. However, the post-test weighing procedure can be repeated to obtain valid weights within the time limits as specified in § 86.139.

(6) The reference filters shall be changed at least once per month, but never between pre- and post-test weighings of a given sample filter. The reference filters shall be the same size and material as the sample filters.

(b) *Microgram balance specifications.* The microgram balance used to determine the weights of all filters shall have a precision (standard deviation) and a readability of one microgram.

(c) *Other procedures and equipment.* Other procedures and equipment may be used if shown to yield equivalent or superior results and if approved in advance by the Administrator.

[56 FR 25773, June 5, 1991]

§ 86.113–04 Fuel specifications.

This section includes text that specifies requirements that differ from § 86.113–94. Where a paragraph in § 86.113–94 is identical and applicable to this section, this will be indicated by specifying the corresponding paragraph and the statement ''[Reserved]. For guidance see § 86.113–94.''.

(a) *Gasoline fuel.* (1) Gasoline having the following specifications will be used by the Administrator in exhaust and evaporative emission testing of petroleum-fueled Otto-cycle vehicles, except that the Administrator will not use gasoline having a sulfur specification higher than 0.0045 weight percent.

Gasoline having the following specification or substantially equivalent specifications approved by the Administrator, must be used by the manufacturer in exhaust and evaporative testing except that octane specifications do not apply:

Item	ASTM test method No.	Value
Octane, Research, Min.	D 2699	93
Sensitivity, Min.		7.5
Lead (organic), max. g/U.S. gal. (g/liter)	D 3237	0.050 (0.013)
Distillation Range:	D 86	
IBP[1]:deg. F (deg. C)		75–95 (23.9–35)
10 pct. point: deg.F (deg.C)		120–135 (48.9–57.2)
50 pct. point: deg.F. (deg.C)		200–230 (93.3–110)
90 pct. point: deg.F (deg.C)		300–325 (148.9–162.8)
EP, max: deg.F (deg.C)		415 (212.8)
Sulfur, weight pct.	D 1266	0.0015–0.008
Phosphorous, max. g/U.S. gal (g/liter)	D 3231	0.005 (0.0013)
RVP [2,3]	D 3231	8.7–9.2 (60.0–63.4)
Hydrocarbon composition:	D 1319	
Olefins, max. pct.		10
Aromatics, max, pct.		35
Saturates		Remainder

[1] For testing at altitudes above 1,219 m (4000 feet), the specified range is 75–105 deg. F (23.9–40.6 deg. C).
[2] For testing which is unrelated to evaporative emission control, the specified range is 8.0-9.2 psi (55.2–63.4 kPa).
[3] For testing at altitudes above 1,219 m (4000 feet), the specified range is 7.6–8.0 psi (52-55 kPa).

(2) For light-duty vehicles, light-duty trucks and medium-duty passenger vehicles certified for 50 state sale, and for Tier 2 and interim non-Tier 2 vehicles whose certification is carried over from the NLEV program or carried across from the California LEV I program, ''California Phase 2'' gasoline having the specifications listed in the table in this section may be used in exhaust emission testing as an option to the specifications in paragraph (a)(1) of this section. If a manufacturer elects to utilize this option, the manufacturer must conduct exhaust emission testing with gasoline having the specifications listed in the table in this paragraph (a)(2) and in the case of interim non-Tier 2 LDV/Ts and interim non-Tier 2 MDPVs whose certification is carried over from the NLEV program or carried across from California LEV I program certification the Administrator must also conduct exhaust emission testing with gasoline having the specifications listed in the table in this paragraph (a)(2). However, the Administrator may use or require the use of test fuel meeting the specifications in paragraph (a)(1) of this section for certification confirmatory testing, selective enforcement auditing and in-use testing for all other vehicles. All fuel property test methods for this fuel are contained in Chapter 4 of the California Regulatory Requirements Applicable to the National Low Emission Vehicle Program (October, 1996). These requirements are incorporated by reference (see § 86.1). The table follows:

Fuel property	Limit
Octane, (R+M)/2 (min)	91
Sensitivity (min)	7.5
Lead, g/gal (max) (No lead added)	0–0.01
Distillation range, °F.	
10 pct. point,	130–150
50 pct. point,	200–210
90 pct. point,	290–300
EP, maximum	390
Residue, vol% (max)	2.0
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

Fuel property	Limit
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) through (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: