§ 600.113–88  Fuel economy calculations.

The Administrator will use the calculation procedure set forth in this paragraph for all official EPA tests. For the 1988 model year, manufacturers may choose to use this procedure or use the calculation procedure described in § 600.113–78. However, once a manufacturer uses this procedure, it must be used for all subsequent tests. This procedure must be used by manufacturers for 1989 and later model years. The calculations of the weighted fuel economy values require input of the weighted grams/mile values for HC, CO and CO₂ for both the city fuel economy test and the highway fuel economy test. Additionally, for tests of gasoline-fueled vehicles, the specific gravity, carbon weight fraction and net heating value of the test fuel must be determined.

The city and highway fuel economy values shall be calculated as specified in this section. A sample appears in Appendix II to this part.

(a) Calculate the weighted grams/mile values for the city fuel economy test for HC, CO, and CO₂ as specified in § 86.144 of this chapter. For tests of gasoline-fueled vehicles, measure and record the test fuel’s properties as specified in paragraph (c) of this section.

(b)(1) Calculate the mass values for the highway fuel economy test for HC, CO, and CO₂ as specified in paragraph (b) of § 86.144 of this chapter. For tests of gasoline-fueled vehicles, measure and record the test fuel’s properties as specified in paragraph (c) of this section.

(2) Calculate the grams/mile values for the highway fuel economy test for HC, CO, and CO₂ by dividing the mass values obtained in paragraph (b)(1) of this section, by the actual distance traveled, measured in miles, as specified in paragraph (h) of § 86.135 of this chapter.

(c) Gasoline test fuel properties shall be determined by analysis of a fuel sample taken from the fuel supply. A sample shall be taken after each addition of fresh fuel to the fuel supply. Additionally, the fuel shall be resampled once a month to account for any fuel property changes during storage. Less frequent resampling may be permitted if EPA concludes, on the basis of manufacturer-supplied data, that the properties of test fuel in the manufacturer’s storage facility will remain stable for a period longer than one month. The fuel samples shall be analyzed to determine the following fuel properties:

(1) Specific gravity per ASTM D 1298.
(2) Carbon weight fraction per ASTM D 3334.
(3) Net heating value (Btu/lb) per ASTM D 3338.

(d) Calculate the city fuel economy and highway fuel economy from the grams/mile values for HC, CO, CO₂ and, for test of gasoline-fueled vehicles, the test fuel’s specific gravity, carbon weight fraction and net heating value.
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§ 600.113–93 Fuel economy calculations.

The Administrator will use the calculation procedure set forth in this paragraph for all official EPA testing of vehicles fueled with gasoline, diesel, methanol or natural gas fuel. The calculations of the weighted fuel economy values require input of the weighted grams/mile values for total hydrocarbons (HC), carbon monoxide (CO), and carbon dioxide (CO$_2$); and, additionally for methanol-fueled automobiles, methanol (CH$_3$OH) and formaldehyde (HCHO); and additionally for natural gas-fueled vehicles non-methane hydrocarbons (NMHC) and methane (CH$_4$) for both the city fuel economy test and the highway fuel economy test. Additionally, the specific gravity, carbon weight fraction and net heating value of the test fuel must be determined. The city and highway fuel economy values shall be calculated as specified in this section. A sample appears in appendix II to this part.

(a) Calculate the weighted grams/mile values for the city fuel economy test for HC, CO and CO$_2$; and, additionally for methanol-fueled automobiles, CH$_3$OH and HCHO; and additionally for natural gas-fueled automobiles NMHC and CH$_4$ as specified in §86.144 of this chapter. Measure and record the test fuel’s properties as specified in paragraph (c) of this section.

(b)(1) Calculate the mass values for the highway fuel economy test for HC, CO and CO$_2$; and, additionally for methanol-fueled automobiles, CH$_3$ OH and HCHO; and additionally for natural gas-fueled automobiles NMHC and CH$_4$ as specified in §86.144(b) of this chapter. Measure and record the test fuel’s properties as specified in paragraph (c) of this section.

(2) Calculate the grams/mile values for the highway fuel economy test for HC, CO and CO$_2$; and, where applicable CH$_3$OH, HCHO, NMHC and CH$_4$ by dividing the mass values obtained in paragraph (b)(1) of this section, by the actual distance traveled, measured in miles, as specified in §86.135(h) of this chapter.

(c)(1) Gasoline test fuel properties shall be determined by analysis of a