$$V_{nominal} = \frac{V_S + V_F}{2}$$

Where:

V_S is the battery voltage measured at the start of the FTP test, where the measurement is made after the key-on event but not later than 10 seconds after the key-on event; and

V_F is the battery voltage measured at the conclusion of the FTP test, where the measurement is made before the key-off event but not earlier than 10 seconds prior to the key-off event.

(ii) If the absolute value of the measured current to and from the battery during the measurement of either V_S or V_F exceeds three percent of the maximum absolute value of the current measured over the FTP, then that V_S or V_F value is not valid. If no valid voltage measurement can be made using this method, the manufacturer must develop an alternative method of determining nominal voltage. The alternative must be developed using good engineering judgment and is subject to EPA approval.

[76 FR 39548, July 6, 2011, as amended at 76 FR 57380, Sept. 15, 2011; 77 FR 63182, Oct. 15, 2012]

Subpart C—Procedures for Calculating Fuel Economy and Carbon-Related Exhaust Emission Values

§ 600.206–08 Calculation and use of FTP-based and HFET-based fuel economy values for vehicle configurations.

(a) Fuel economy values determined for each vehicle under § 600.113(a) and (b) and as approved in § 600.008–08 (c), are used to determine FTP-based city, HFET-based highway, and combined FTP/Highway-based fuel economy values for each vehicle configuration for which data are available.

(1) If only one set of FTP-based city and HFET-based highway fuel economy values is accepted for a vehicle configuration, these values, rounded to the nearest tenth of a mile per gallon, comprise the city and highway fuel economy values for that configuration.

(2) If more than one set of FTP-based city and HFET-based highway fuel economy values are accepted for a vehicle configuration:

(i) All data shall be grouped according to the subconfiguration for which the data were generated using sales projections supplied in accordance with § 600.208(a)(3).

(ii) Within each group of data, all values are harmonically averaged and rounded to the nearest 0.0001 of a mile per gallon in order to determine FTP-based city and HFET-based highway fuel economy values for each subconfiguration at which the vehicle configuration was tested.

(iii) All FTP-based city fuel economy values and all HFET-based highway fuel economy values calculated in paragraph (a)(2)(ii) of this section are (separately for city and highway) averaged in proportion to the sales fraction (rounded to the nearest 0.0001) within the vehicle configuration (as provided to the Administrator by the manufacturer) of vehicles of each tested subconfiguration. The resultant values, rounded to the nearest 0.0001 mile per gallon, are the FTP-based city and HFET-based highway fuel economy values for the vehicle configuration.

(3) For the purpose of determining average fuel economy under § 600.510–08, the combined fuel economy value for a vehicle configuration is calculated by harmonically averaging the FTP-based city and HFET-based highway fuel economy values, as determined in § 600.206(a)(1) or (2) of this section, weighted 0.55 and 0.45 respectively, and rounded to the nearest 0.0001 mile per gallon. A sample of this calculation appears in appendix II of this part.

(4) For alcohol dual fuel automobiles and natural gas dual fuel automobiles the procedures of paragraphs (a)(1) or (2) of this section, as applicable, shall be used to calculate two separate sets of FTP-based city, HFET-based highway, and combined fuel economy values for each configuration.

(i) Calculate the city, highway, and combined fuel economy values from

the tests performed using gasoline or diesel test fuel.

(ii) Calculate the city, highway, and combined fuel economy values from the tests performed using alcohol or natural gas test fuel.

(b) If only one equivalent petroleum-based fuel economy value exists for an electric configuration, that value, rounded to the nearest tenth of a mile per gallon, will comprise the petroleum-based fuel economy for that configuration.

(c) If more than one equivalent petroleum-based fuel economy value exists for an electric vehicle configuration, all values for that vehicle configuration are harmonically averaged and rounded to the nearest 0.0001 mile per gallon for that configuration.

[71 FR 77944, Dec. 27, 2006]

§ 600.206–12 Calculation and use of FTP-based and HFET-based fuel economy, CO₂ emissions, and carbon-related exhaust emission values for vehicle configurations.

(a) Fuel economy, CO_2 emissions, and carbon-related exhaust emissions values determined for each vehicle under § 600.113–08(a) and (b) and as approved in § 600.008 (c), are used to determine FTP-based city, HFET-based highway, and combined FTP/Highway-based fuel economy, CO_2 emissions, and carbon-related exhaust emission values for each vehicle configuration for which data are available. Note that fuel economy for some alternative fuel vehicles may mean miles per gasoline gallon equivalent and/or miles per unit of fuel consumed. For example, electric vehicles will determine miles per kilowatt-hour in addition to miles per gasoline gallon equivalent, and fuel cell vehicles will determine miles per kilogram of hydrogen.

(1) If only one set of FTP-based city and HFET-based highway fuel economy values is accepted for a vehicle configuration, these values, rounded to the nearest tenth of a mile per gallon, comprise the city and highway fuel economy values for that configuration. If only one set of FTP-based city and HFET-based highway CO_2 emissions and carbon-related exhaust emission values is accepted for a vehicle configuration, these values, rounded to the nearest gram per mile, comprise the city and highway CO_2 emissions and carbon-related exhaust emission values for that configuration.

(2) If more than one set of FTP-based city and HFET-based highway fuel economy and/or carbon-related exhaust emission values are accepted for a vehicle configuration:

(i) All data shall be grouped according to the subconfiguration for which the data were generated using sales projections supplied in accordance with § 600.208–12(a)(3).

(ii) Within each group of data, all fuel economy values are harmonically averaged and rounded to the nearest 0.0001 of a mile per gallon and all CO_2 emissions and carbon-related exhaust emission values are arithmetically averaged and rounded to the nearest tenth of a gram per mile in order to determine FTP-based city and HFET-based highway fuel economy, CO_2 emissions, and carbon-related exhaust emission values for each subconfiguration at which the vehicle configuration was tested.

(iii) All FTP-based city fuel economy, CO_2 emissions, and carbon-related exhaust emission values and all HFET-based highway fuel economy and carbon-related exhaust emission values calculated in paragraph (a)(2)(ii) of this section are (separately for city and highway) averaged in proportion to the sales fraction (rounded to the nearest 0.0001) within the vehicle configuration (as provided to the Administrator by the manufacturer) of vehicles of each tested subconfiguration. Fuel economy values shall be harmonically averaged, and CO_2 emissions and carbon-related exhaust emission values shall be arithmetically averaged. The resultant fuel economy values, rounded to the nearest 0.0001 mile per gallon, are the FTP-based city and HFET-based highway fuel economy values for the vehicle configuration. The resultant CO_2 emissions and carbon-related exhaust emission values, rounded to the nearest tenth of a gram per mile, are the FTP-based city and HFET-based highway CO_2 emissions and carbon-related exhaust emission values for the vehicle configuration.

(3)(i) For the purpose of determining average fuel economy under § 600.510,

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